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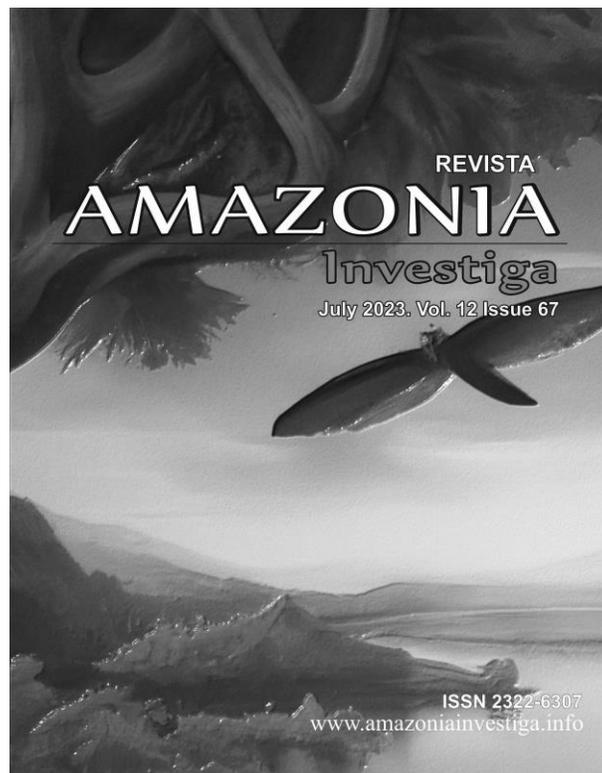


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## Digital competence of the university student. A systematic and bibliographic update

### Competencia digital del estudiante universitario. Una actualización sistemática y bibliográfica

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#### Abstract

Society has experienced an essential technological revolution in recent decades, generating significant repercussions in the educational field, especially in higher education. This technological evolution demands the development of digital skills that allow us to face problems and situations in this environment.

In this sense, Higher Education Institutions (HEIs) have attached great importance to the training in digital skills of university students in their academic policies. Digital competence implies the knowledge, abilities, skills, and attitudes necessary to access, analyze, evaluate, reflect critically, create, and communicate in four key areas: technological, informational, multimedia, and communicative.

The objective of this article is to analyze documents related to the digital competencies of university students. To achieve this, a descriptive bibliometric study was carried out. Among the conclusions, the need to strengthen the training in digital skills of university students is highlighted so that they can take advantage of the communication tools available in the knowledge society.

**Keywords:** Digital competencies, higher education, higher education institutions, university students.

#### Resumen

La sociedad ha experimentado una importante revolución tecnológica en las últimas décadas, generando repercusiones significativas en el ámbito educativo, especialmente en la enseñanza superior. Esta evolución tecnológica demanda el progreso de competencias digitales que permitan afrontar problemas y situaciones en este entorno.

En este sentido, las Instituciones de Educación Superior (IES) han otorgado gran importancia a la formación en competencias digitales de los estudiantes universitarios en sus políticas académicas. La competencia digital implica la combinación de conocimientos, habilidades, destrezas y actitudes necesarios para acceder, analizar, evaluar, reflexionar críticamente, crear y comunicarse en cuatro áreas clave: tecnológica, informacional, multimedia y comunicativa.

El objetivo de este artículo es analizar documentos relacionados con las competencias digitales de los estudiantes universitarios. Para lograrlo, se llevó a cabo un estudio bibliométrico descriptivo. Entre las conclusiones se destaca la necesidad de fortalecer la educación en competencias digitales de los alumnos universitarios, para que puedan aprovechar las herramientas de comunicación disponibles en la sociedad del aprendizaje.

**Palabras clave:** Competencias digitales, educación superior, instituciones de educación superior, estudiantes universitarios.

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## Introduction

University students' digital competency is crucial in an age of rapid technological advancement and widespread digitalization. Understanding students' digital capabilities is vital as educational institutions integrate digital tools, platforms, and methods into their curricula globally. This extensive systematic and bibliographic update examines the complex world of digital competence among university students, including the newest research, trends, and perspectives.

Digital literacy and proficiency are now required for academic success, employability, and lifelong learning in higher education. The term "digital competence" comprises digital literacy, information fluency, critical thinking in digital situations, ethical digital behavior, and the ability to adapt to new technology. Thus, this update tries to comprehend digital competence's many facets and its effects on students and instructors.

As the global workforce becomes more digital, university students need the ability to succeed. Inadequate digital competency can affect academic and occupational success. This update is crucial for educators, policymakers, academics, and stakeholders interested in comprehensive student development in the digital era.

This article presents the results of the bibliometric analysis of the digital competence of university students. Its objective is to contribute to an improved thoughtful of the study of Digital competencies of the university student, as well as their motivations in higher education.

## Literature review

The university's substantive processes today are teaching, research, and community outreach. As an objective, the university must ensure the comprehensive training of its students. The increasingly accelerated development of technology requires fully prepared professionals and people to graduate, capable of responding to society's various problems.

In this sense, digital competence has become a fundamental skill in higher education. According to the European Parliament report, digital competence implies "the critical and safe use of Information Society Technologies for work, free time and communication" (European Parliament, 2006). This means not only the ability to use digital tools but also the ability to evaluate

information and communicate effectively in virtual environments critically.

The importance of digital skills in higher education is not limited only to students but also affects teachers and professionals. As Pelgrum (2001) points out, "Digital skills are essential for teachers today, as they must be prepared to integrate technology effectively into their teaching practices and facilitate student learning in digital environments."

In addition, digital skills are essential for research and professional development in an increasingly globalized and connected world. Carretero et al., (2019) argued that "digital skills are necessary for researchers and practitioners in general, as they allow them to access online resources and tools, collaborate virtually with colleagues worldwide, and disseminate their research results more widely".

To address this panorama, it is necessary to work on training university teachers. Núñez-Canal et al., (2022) state, "It is essential to provide teachers with the necessary skills and knowledge to integrate digital technologies into their educational practices and make the most of the opportunities they provide to improve teaching and learning."

In addition, creating flexible and collaborative virtual environments in the university environment is required. Englund et al., (2017) state that "virtual learning environments can encourage active student participation, collaboration, and collective knowledge creation, which is especially relevant for digital natives, who have grown up immersed in technology and are more familiar with her".

In the current university context, digital skills have become essential for the comprehensive development of students, teaching practice, research, and professional development. University teacher training and creating collaborative virtual environments are vital aspects of promoting the effective use of technology and preparing students to face the challenges of a digital society.

In addition to digital skills, higher education must address students' motivations for developing these skills. According to studies by Krumsvik (2011) and Mateescu et al., (2021), university students are motivated to acquire digital skills due to their relevance in the labor

market and ability to improve employability. Employers highly value technology skills in an increasingly digitized world, prompting students to seek digital learning opportunities during their higher education.

Along with employability, students may be motivated by the need to adapt and fully participate in an increasingly digital society. As Bennett et al., (2008), digital competence has become a form of digital citizenship, which implies actively participating in social, political, and economic life through technology. Students recognize the importance of these skills for their participation in society and their ability to access information, services, and opportunities online.

On the other hand, the training of university teachers in digital skills is essential to guarantee quality education. According to a study by Ramírez-Montoya & García-Peñalvo (2017), teachers with well-developed digital skills can create rich and compelling learning environments, use digital resources efficiently, and encourage active student participation. Teacher training in digital skills allows for more innovative, collaborative, and student-centered teaching, which is aligned with the needs and expectations of digital natives.

Digital competence has become a fundamental skill in higher education, driven by labor market demand and the need to participate fully in the digital society. Students' motivation to acquire these skills is based on their employability and ability to adapt to a constantly evolving digital environment. Training teachers in digital skills is also crucial to provide quality education and making the most of the opportunities offered by technology in the university environment.

Digital competency is vital for students, professors, and professionals in higher education. It requires digital tools, interpreting information, and communicating in virtual spaces. These abilities help teachers enhance teaching, making students more employable and digitally active. Technology, teacher training, and collaborative virtual environments are essential to maximizing education. Overall, digital competence is

necessary for success in higher education and society.

## Methodology

The methodology used in this research combines a documentary approach of descriptive scope and a qualitative approach. According to Martínez-Corona et al., (2023), documentary research refers to a series of methods and techniques for searching, processing, and storing information in documents and systematically, coherently, and arguably presenting new information in a scientific paper. This definition supports using desk research to collect and analyze relevant scientific articles in the study area.

Regarding the choice of the unit of analysis and the selection criteria, the use of the Scopus database and the open-access journal is justified by its broad scope and recognition in the academic field. In this regard, Hiebl (2023) mentions that academic databases, such as Scopus, provide a wide range of reliable and updated sources for literature review.

The literature also supports using an Excel spreadsheet to collect and organize data from selected articles. For example, Chowdhury et al., (2023) mention that spreadsheets are practical for classifying and analyzing data in bibliometric studies and literature analysis.

In addition, using relevant keywords, such as "digital competence" or "digital competence", in searching for scientific articles is considered a common practice in documentary research. According to Ray (2023), keywords are essential to identify relevant literature in a specific area and maximize the effectiveness of the search.

## Results

For the search for research articles, the Scopus database was used given its relevance since it not only collects bibliographic information but also analyzes the behavior of the citations received by the journals, thus allowing the generation of many bibliometric indicators. Obtaining the following results (See Table 1):

**Table 1.**  
Articles associated to the object of study.

| Author                           | Objective  | Main Contribution   |
|----------------------------------|--|---|
| Boté-Vericad et al., (2023)      | To analyze the balanced of digital teaching competence of university professors of health sciences in two Spanish autonomous communities: Andalusia and Catalonia.   | In equally groups, teachers report a high command of technical skills, such as communication with other educators or contribution in online courses.<br>The suggestion is to enhance the practical component of teacher training through increased experimentation, emphasizing the conscious, effective, and feasible utilization of technologies. Additionally, restructuring the curriculum to incorporate cross-cutting content would encourage students to use the internet and other technologies responsibly. Perpetual improvement of digital training for teachers and the exploration of innovative teaching methods are crucial. |
| Gabarda-Méndez et al., (2023)    | Develop digital competence from a transversal perspective in teachers.   | Furthermore, addressing the limited access to ICT prospects for students with disabilities is essential, as it contributes to the digital division and hampers equal approach to data and knowledge.  |
| Fernández-Cerero et al., (2023)  | To know the influence of technical teaching of college teachers concerning educational inclusion and cultivating the characteristic of life of students with disabilities.   | The variation from face-to-face to digital teaching revealed the positive trend of digital education in health professions. The report revealed that students from the Faculty of Mathematics and Informatics demonstrated a consistent and commendable level of health literacy across various health literacy scales. These encouraging findings can be attributed to the students' advanced digital skills, which contributed to their adeptness in navigating health-related information and resources.   |
| Marchwacka et al., (2023)        | Describe the ways of teaching and learning used by teachers in the first semester of the COVID-19 pandemic.  | They consider that college educator teaching processes should contain accreditation of digital skills.  |
| Kaloyanova et al., (2023)        | The COVID-19 epidemic has highlighted the significance of digital health literacy while also presenting several challenges.<br>Understanding the importance of digital health literacy has become crucial in effectively navigating the digital landscape for health-related information and services during these unprecedented times.            | First-year scholars of Education degrees in Catalonia and Andorra generally hold a positive perception of their digital teaching competence. They tend to view themselves as highly proficient in virtuous characteristics, communication, and utilizing resources and applications. However, they perceive themselves as less experienced in pedagogical design, evaluation, and utilizing digital technologies for knowledge purposes.  |
| Alonso-García et al., (2023)     | To know the perception of students about digital competence in teaching.   | It stresses that technology should be a way to improve teaching, research, and knowledge sharing.   |
| Marimon-Martí et al., (2023)     | This study aims to analyze the discernment of first-year scholars pursuing Education degrees in Catalonia and Andorra regarding their digital teaching capability. It further investigates potential differences in perception based on gender and degree program, contributing to the diagnosis and formative self-assessment of future teachers. | The HyFlex model has the potential to be transferred and applied to the subjects of face-to-face degrees that want to be digitally transformed.   |
| Romero et al., (2023)            | Identify how the digital challenges to promote lifelong learning through ICT in Higher Education (HE) are reflected in specific contexts and where digital transformation (DT) acquires particular relevance.  | The study concludes that university classrooms undergo a transformative process, serving as spaces where students' creativity and ability to seek innovative solutions are challenged. This is evident in   |
| Area-Moreira et al., (2023)      | To analyze to what extent the implemented HyFlex model was valued by the students and its effects on academic performance throughout a turbulent three-year period such as the years of the Covid-19 pandemic.   |   |
| Gutiérrez-Pequeño et al., (2023) | The implementation of the "Youth Social Media Lab" project was investigated as an exemplar of content creation that integrates multimedia elements (such as images, video, text, and audio) while fostering participatory  |   |



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|------------------------------------|---|---|
|                                    | cultures and nurturing the acquisition of digital skills.   | their selection of diverse topics within the field of social education and the development of scripts (storyboards) for creating videos. Moreover, the social media laboratory examined in this study becomes an inter-epistemic space that promotes the recognition of students' cognitive diversity, cultural hybridization, and the integration of different perspectives and approaches. The laboratory provides opportunities for experimenting with novel digital, multimedia, and interactive formats for content creation, as well as investigating a variety of topics concerning the contemporary role of youth in the laboratory.  |
| Hernández-Sellés et al., (2023)    | Present an analysis about the tasks and roles of teachers in collective work in virtual circumstances, recognizing its typology and the importance given by the scholars.   | It made it possible to identify seven key responsibilities that a college professor should progress when applying an online collective work methodology: pedagogical, evaluator, social, technological, counselor/mediator, organizer/manager, and staff.,<br>Education 4.0 represents a crucial component for promoting inclusive and accessible higher education, aligning with the United Nations Sustainable Development Goals (SDGs). To ensure the integrity and sustainability of Education 4.0 in higher education, it is vital for educational technologies to be entirely incorporated, innovative, and scalable. First in this manner can they be deemed satisfactorily novel. |
| Jugembayeva & Murzagaliyeva (2023) | The study purposes to examine the key methodical and academic factors that drive the evolution of educational formats in response to advanced technological trends. Specifically, the focus is on assessing the eagerness of physics scholars for digital knowledge within the University 4.0 model, which emphasizes technological integration and innovation in higher education. | A study investigating the innovative eagerness of physics scholars to engage in digital educational experiences within the framework of the University 4.0 standard divulges encouraging findings. Scholars exhibit a high level of inventiveness and possess a optimistic attitude towards novel didactic actions. These outcomes highlight their potential to actively participate in and benefit from the digital renovation of superior instruction.  |
| Fuertes-Alpiste et al., (2023)     | To study the perceptions of teachers and students concerning interactive synchronous videoconferences carried out by five teachers of 3 different subjects from the Faculty of Education of the University of Barcelona.  | The study has allowed us to know the perceptions of mixed teaching by teachers and students, being those favorable, which will reinforce the implementation of these actions in the learning of Pedagogy studies. It concludes that training students fall mainly on the university's role. However, it should be noted that universities must also collaborate with industry in developing benchmarks and standards to measure and establish what skill sets should be taught and prepared in academia.  |
| Kuntadi et al., (2022)             | Measure and analyze the level of digital skills students with industry experience possess.  | It considers the new need of the society created in the digital era, where all citizens, particularly future teachers, must acquire skills and abilities that allow them to function actively and adequately in the society of knowledge.   |
| Fernández-Jiménez (2022)           | Analyze digital skills in higher education.   |   |



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|------------------------------------|---|---|
| Abanades-Sánchez- (2022)           | Know our students' perceptions about online classes and the teacher's interaction through them.   | It concludes that the twelve must innovate in skills to develop their students and have a more guiding profile and leadership that allows them to empathize more with them. It must be permanently formed. He considers that, in a digital and hyper-connected era, traditional ways of learning are complemented by the exponential increase in tools offered by ICT.  |
| Merchán-Murillo (2022)             | Analyze and address the use of technology for learning, its complexity, the teaching process, and the need for student support.   | Education is in a process of continuous change because the learning needs of students are changing. The skills necessary to develop jobs in companies are also changing. Therefore, the work and profiles required by them are increasingly different. It stands out as a contribution that, even when young university students grow and develop in a technological context, it is not a guarantee that they have sufficient digital competencies since their respective investigations show an absence of advanced levels of digital competence. In this sense, they reflect on the need to implement academic programs that promote the development of such skills with the condition of adapting them as technologies evolve. |
| León Lizárraga et al., (2022)      | To assess 114 university students' perception of themselves regarding their level of digital competence in communication in digital media and content creation.   | This study showed that when digital technologies are used for academic or recreational purposes, the use of skills depends on whether or not they have passed courses.  |
| Cerdeza González et al., (2023)    | To analyze the frequency of digital technologies' academic, recreational, social, and economic uses in pedagogy students based on four variables: type of digital competence, gender, permanence in the program, and approval of subjects.  | Digital competence is crucial in all domains of our contemporaneous living. You need to study, work and connect concurrently in a continuous technology: to improve the educational context. The COVID-19 pandemic and other present social and economic difficulties have through us go from conventional to blended, distance, and online education formats.  |
| Kassymova et al., (2023)           | To explore the opinions of master's students about their digital competence by identifying the frequency, experience, and satisfaction in the use of ICT in their knowledge method when they study at the university and teach English as a Foreign Language (EFL). in the environment of online instruction.     | The effects of this analysis divulge the elevated grade of arrangement amongst university teachers concerning the aptitude of ICT to adjust to the step of work and learning of students, regardless of their descriptions. It also highlights the significance of design comprehensive educational simulations that offer the similar knowledge occasions to all scholars through the proper incorporation of ICT in the schoolroom.   |
| Latorre-Coscolluela et al., (2023) | To analyze the effects among a sequence of measurements connected to the discernment of university instruction team on the aptitude of ICT to answer to the distinctive desires of scholars, on the supposed effectiveness and positions concerning these tools, and, finally, on dynamic behavior about its use. | They see the requirement for professional digital competence as central, as digital technology is not simply part of academic performs but is appropriate integral to communication and collaboration with colleagues and parents.  |
| Siri-Sollied et al., (2023)        | Investigate the possibilities and limitations of student-teacher learning outcomes in an online collaborative learning activity.  | Additionally, in connection with performing as a academic lead for a assumed group of staff, the scholar instructor increased knowledge, and respective of the expected education outcomes were attained concluded online practice.   |

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| Morra et al.<br>(2022)                        | Recapitulate the teaching and direction we provide to BLAs (Biology Learning Assistants) on how best to adjust digital instructive tools to engage scholars throughout their virtual terms.  | He considers that digital tools have specific technological obligations, which include hardware, software, and sufficient Internet structure. When counselling their use, the requirement to increase the reasonable accessibility of these technologies to reduce the gap in the most neglected populations should be considered.                                   |
| Anthony samy<br>(2022)                        | Contribute to helping scholars and professors use the appropriate motivational approaches to raise students' digital literateness.   | Teachers must apply motivating strategies that promote the digital competence of students.   |
| Silva-Quiroz, J. & Morales Morga-do<br>(2022) | To determine first-year pedagogy students' digital competence (CD) level, crossed with two socioeconomic variables: the type of educational establishment where they attended high school and the territorial scope of their university. | They consider that university teaching should incorporate CD as part of student's academic training, especially students preparing to be teachers. On the other hand, other forms of exercise should be implemented for those students who do not have the financial resources so that their inclusion in the digital competence learning process can be guaranteed. |

Source: Own elaboration.

### Discussion

The table shows a common factor among multiple investigations is that digital skills positively affect students and teachers in the university environment. However, possibilities for reflections are opened based on the evidence of the articles that involve media literacy in the cognitive elements and, in this way, increase the experimentation of the practical component applied for the restructuring of the curriculum of the subjects.

Likewise, the use of the Hyflex model is reflected as a tool for ethical aspects, communication, use of multimedia resources, and specific applications, with an inclusive element that is part of ICTs for students with disabilities and accessible information as an opportunity for equality.

The trend of digital competence and the Hyflex model has an essential shift in the academic curriculum and the recognition of the cognitive plurality of students, cultural hybridization, and communication between evaluators, counselors, and educational managers.

### Conclusions

The results show that studies on digital competence in the university represent an interest for the global scientific society due to its implications in academic, professional, and cultural life.

The current educational system cannot be understood without Information and Communication Technologies (ICT). In this

sense, permanent training is required in teachers that allows them to guarantee inclusive, equitable, and quality education and promote learning opportunities during all life for all, as stipulated in the fourth Sustainable Development Goal Agenda 2030.

Given the ongoing development of technologies that bring information saturation, new text formats, and consequently different forms of communication which affect human activities and interpersonal relationships, they demand to integrate digital resources in their training processes, which must generate the development of digital skills in the student body.

Developing digital competence in students stimulates innovation and creativity, and they develop soft skills such as teamwork.

Using motivating strategies in the teaching process through ICT raises students' digital literacy.

Digital competence constitutes a transversal competence in training professionals at the undergraduate and postgraduate levels (master's and doctorate).

Information and communication technologies (ICT) allow access to shared documents, virtual teaching materials, and videoconferences at any time and place and in the search for updated and relevant information.

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## Forming communicative competence in future specialists of the socio-economic sphere

### Формування комунікативної компетентності майбутніх фахівців соціально-економічної сфери

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#### Abstract

This article explores the cultural tendencies of verbal etiquette among future professionals in the socio-economic field in the context of postmodern society during their professional training. The aim of the article is to investigate the formation peculiarities of communicative competence in education seekers of socio-economic professions regarding the development of speech culture related to the problem of verbal etiquette in postmodern society. The components of communicative competence in future professionals of the socio-economic field include subjective, praxeological, and gnoseological aspects, which are interdependent and contribute to the development of communicative interaction in their professional activities. The research was conducted within the educational process of higher education institutions, employing identical measurement techniques, time, and duration of training, which allowed for diagnosing the level of communicative

#### Анотація

У статті досліджуються культурні тенденції мовного етикету майбутніх фахівців соціально-економічної сфери в контексті постмодерного суспільства під час професійної підготовки. Мета статті – дослідити особливості формування комунікативної компетентності у здобувачів освіти соціально-економічних професій щодо розвитку мовленнєвої культури у зв'язку з проблемою мовного етикету в постмодерністському суспільстві. Компоненти комунікативної компетентності майбутніх фахівців соціально-економічної сфери включають суб'єктивний, праксеологічний та гносеологічний аспекти, які є взаємозалежними та сприяють розвитку комунікативної взаємодії у професійній діяльності. Дослідження проводилося в рамках навчального процесу вищих навчальних закладів із застосуванням однакових методик вимірювання, часу та тривалості навчання, що дозволило діагностувати рівень

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competence of future professionals in the socio-economic field according to the criteria of speech culture. Communicative competence of future professionals in the socio-economic field is defined as the integration of scientific knowledge, intellectual and practical skills and abilities, virtual literacy in interpersonal interaction, competence in overcoming communication barriers, general culture, and personal qualities of education seekers capable of solving life-creative tasks.

**Keywords:** future professionals, socio-economic field, communicative competence, postmodern space, educational process.

## Introduction

Radical changes in the development of political, economic, and educational systems, the continuous intensification of the information space, the acceleration of life pace, modern demands for the efficiency of professional communication, and increased intellectual workload - these are the defining characteristics of the prospects of the socio-cultural postmodern society.

Researching the development of the communicative competence of future professionals in the educational environment of higher education institutions is crucial, as it lays the foundation for their communicative and professional-personal growth. The formation of education seekers' personalities in the context of applying a competency-based approach to the development of communicative competence in future professionals in the socio-economic field, taking into account the specifics of individual communicative characteristics, remains unknown.

In the studies of modern researchers (Di Pietro, 2021; T. Engelking, 2018; Gong, Gao, Li, & Lai, 2021), communicative competence is presented as the basis for the development of a multicultural personality, dependent on successful interpersonal communication and the creation of communicative behavior models in the context of language and culture acquisition, as well as the prerequisites for achieving life-sustaining goals during communication and the implementation of professional training for students. Various aspects of professional preparation for future professionals in the socio-economic sphere are highlighted in the research of scholars such as B. Grimwood, M. Gordon &

комунікативної компетентності майбутніх фахівців соціально-економічної сфери за критеріями культури мовлення. Комунікативна компетентність майбутніх фахівців соціально-економічної сфери визначається як інтеграція наукових знань, інтелектуальних і практичних умінь і навичок, віртуальна грамотність у міжособистісній взаємодії, компетентність у подоланні комунікативних бар'єрів, загальна культура, особистісні якості здобувачів освіти, здатні вирішення життєво-творчих завдань.

**Ключові слова:** майбутні фахівці, соціально-економічне поле, комунікативна компетентність, постмодерний простір, освітній процес.

Z. Stevens (2018). The understanding of short-term variability in life satisfaction according to the model of individual differences in life satisfaction assessment is presented in the works of H. Bell, H. Gibson, M. Tarrant, L. Perry & L. Stoner (2016). The peculiarities of forming communicative competence in future educators, social workers, and psychologists have been investigated by L. Munalim & G. Gonong (2019), E. Niehaus, J. Reading, M. Nelson, Wegener & A. Arthur (2018). J. Kenworthy, A. Voci & M. Hewstone (2016) regard students' communicative competence as a combination of communicative knowledge and skills required for effective professional performance.

Despite a considerable number of scientific works on the issue of professional training of future professionals in the socio-economic sphere, the effectiveness of developing their communicative competence in the context of personal self-development and improving the educational activities of learners remains relevant.

The **aim of this article** is to investigate the peculiarities of developing communicative competence among students in socio-economic professions in terms of fostering language culture through the issue of speech etiquette in postmodern society.

The research was conducted within the educational process of higher education institutions, using the same measurement techniques, duration of training, and time frame. This allowed for the assessment of the level of communicative competence among future professionals in the socio-economic sphere

according to the criteria of the language culture. All participants provided their consent to participate in the study, and ethical rights were upheld.

The **leading idea** of the research is driven by the peculiarities of identifying the cultural-linguistic tendencies of future professionals in the socio-economic sphere regarding the issue of speech etiquette in postmodern society during their professional training. This will contribute to a purposeful and effective development of communicative competence among future specialists in higher education institutions during the modernization phase of the educational process, within the context of implementing innovative contemporary approaches.

### Literature Review

N. Rabetska (2018) considers in her work communicative competence of future specialists in the socio-economic sphere in professional training. Defines the communicative competence of future specialists in the socio-economic sphere; considers the principles of organizing the educational process of higher educational institutions.

J. Pipitone, & C. Raghavan, (2017) in their article builds upon existing place-based research through the application of a socio-spatial perspective to make sense of how students' experiences in/of place shape, and are shaped by, the production of experiential learning space. They conduct a socio-spatial analysis of this data guided by Lefebvre's spatial theory and offer three spatial readings of our findings including a diverse country of paradox, encountered histories, and positioned bodies through narrative.

O. Halan (2018) emphasizes that the need for a new generation of social work specialists is a priority in the educational process of higher education institutions. He notes that today the development of society is characterized by a number of negative trends associated with the aggravation of socio-economic, socio-pedagogical problems and, as a result, socio-psychological maladaptation of his life is observed.

S. Arkhypova (2018) characterize the main groups of key competences of specialists in the social sphere and to develop a model of their formation in the process of professional training.

### Methodology

*The communicative competence of future professionals in the socio-economic sphere* is characterized as a multi-component, complex-structured, individual-personal formation, based on a combination of knowledge and skills related to the experience of organizing professional communications within the context of interpersonal interaction. It is defined by the ability to perceive and understand partners for effective information exchange, the application of nonverbal and verbal communication elements, skills in emotional self-regulation to prevent and overcome conflicts in fulfilling duties, the display of empathy and tolerance towards one's environment to provide timely assistance in resolving non-standard life situations (Zurbriggen, Jendryczko, & Nussbeck, 2021).

*Socioeconomic professions* are professions that are determined by the effectiveness of communication in the "person-to-person" type context, involving the study of the essence of these relationships and the development of society regarding their impact on social processes in various manifestations of social interaction. These professions contribute to solving problems related to conflictual interactions in society, focusing on their development and the study of social trends and patterns in the preservation of historically established cultural traditions at all levels of interaction (Pedersen, Fitzke, Bouskill, & Sedano, 2021).

The *professional activity* of specialists in the socio-economic sphere is a process of direct interaction with people (or victims), in which case they consciously apply professional skills, education, and experience to provide the necessary socio-psychological and legal assistance in solving their difficult life situations (Grimwood, Gordon, & Stevens, 2018).

The components of the communicative competence of future professionals in the socio-economic field include the subjective, praxeological, and gnoseological components, which are interrelated and contribute to the development of communicative interaction in their professional activities (Liu & Zhang, 2014).

*The praxeological component* involves organizing productive constructive creative-innovative activities of professionals in the socio-economic field, which ensures the successful implementation of new technologies, programs,

and methods and also contributes to effective support of reflective and research-experimental activities.

*The gnoseological component* reflects respondents' sensitivity to receiving information through various means regarding the formation of their labor, moral, and intellectual assets, rapid acquisition of scientific research methods, and ways of studying individual characteristics of individuals. Gnostic abilities ensure obtaining information about one's environment, enabling control and self-regulation, and meeting the needs and capabilities of learners.

The *subjective component* contributes to the qualitative professional training for personal self-development and activation of educational activities for learners within the framework of domestic and global concepts of modern education. The student transitions from the role of an object being taught to the role of a subject responsible for their worldview, activating their exploratory and cognitive activities, self-developing, and self-improving in the process.

By the technology of preparing future professionals in the socio-economic sphere, we understand the holistic combination of teaching techniques, methods, and tools, as well as forms of correction and control, stages (individual-developmental, practice-oriented, and information-motivational) that harmoniously complement each other, forming a stable unity, within the context of their sequential implementation in the educational environment of higher education institutions, ensuring the effectiveness of the intended outcome.

The research was conducted at the Central

**Table 1.**

*The level of knowledge of the specifics of professional communication in future socio-economic professionals in the experimental group (EG) and control group (CG)*

| Levels       | Number of points | CG, in % | EG, in % |
|--------------|------------------|----------|----------|
| Sufficient   | from 21 to 30    | 18,6     | 18,3     |
| Satisfactory | from 11 to 20    | 44,1     | 45,0     |
| Low          | from 1 to 10     | 38,3     | 36,7     |

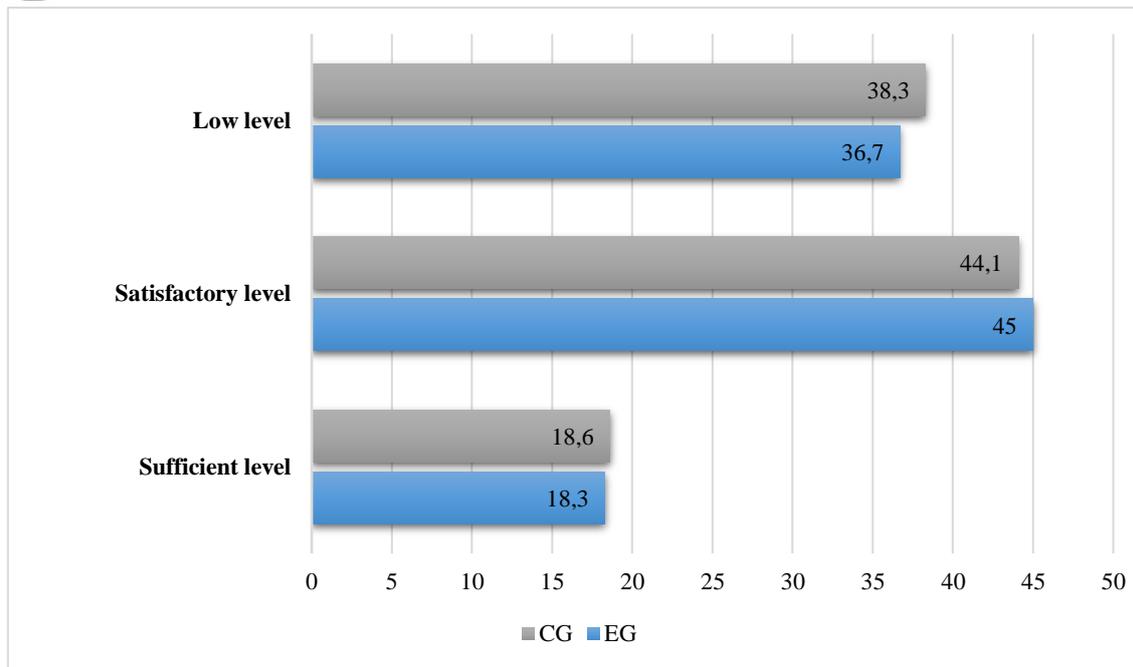
As seen in Figure 1, in the majority of individuals in the experimental group, communicative competence (45.0%) is formed at a satisfactory level. A significant percentage (36.7%) demonstrates a low level of communicative

Ukrainian State Pedagogical University named after Volodymyr Vynnychenko and the State Institution Southern Ukrainian National Pedagogical University named after K. D. Ushynsky, according to the decision of the specialized academic council (protocol No. 21 dated March 25, 2022). The empirical study involved 242 students aged 18-25 years. The experimental group (EG) consisted of 120 students who participated in the experimental methodology for developing communicative competence, while the control group (CG) included 122 respondents who only exhibited the phenomenon under observation. All participants voluntarily took part in the experiment, and their ethical rights were respected.

During the experimental research work, extensive observations were conducted on the behavior, effectiveness of interpersonal relationships, and communication style of future professionals in the socio-economic field. Interviews were also conducted with them, during which role-playing games, business simulations, discussions, and self-analysis of creative individual tasks were employed. The observations were carried out within the framework of a longitudinal study, ensuring the dynamic and representative nature of the sample results.

In the psychodiagnostic dimension of the communicative competence of future professionals in the socio-economic field, the questionnaire by N. Kozhemyako "Assessment of Knowledge Level in Professional Communication Specifics" was used. This questionnaire consists of 30 test tasks. Each correct answer is awarded one point (Table 1).

competence. Only 15 students (18.3%) possess a high level of communicative competence, which is not significantly different from the control group.



**Fig. 1.** Levels of development of communicative competence in students of the experimental group (EG) and control group (CG) (in %)

The next indicator of communicative competence is the awareness of the specifics of using virtual communication. Knowledge and skills related to virtual literacy are of particular importance in the modern context, as interpersonal communication occurs not only face-to-face but also through mediated channels. The need for consultation, obtaining information about needs, and receiving recommendations through the use of information and communication technologies, telephone, or the Internet provides comfortable conditions for communication between students and teachers.

In the context of preparing future professionals in the socio-economic field for their professional activities, cloud technologies, mind maps, and the author's screencasts were applied in every practical session. These tools were used to structure the theoretical components related to the research topic and present the main stages of developing a typical animation.

*Virtual communication* simulates the structure and functions of human interaction based on the outcomes of real relationships through virtual representations. Researchers (Buckner, Zhang & Blanco, 2021) have found that virtual communication:

- bolsters the development of creative “Me”;
- facilitates the communicative process itself;
- removes psychological barriers;
- has some advantages over real opportunities

in communication;

- there is some looseness and selective broadcasting of social standards (virtual attributes of physical superiority and beauty);
- social hierarchy, regarding the possibility of influencing the development of communications between partners, etc (Ngai & Janusch, 2015).

Characteristic features of individual student communication, with the advantage of computer networks, are:

- the possibility of communication with a large number of people who are in different parts of the world of the postmodern cultural space;
- impossibility of using non-verbal means of communication regarding the use of manipulative interaction;
- decrease of the emotional component during virtual communication;
- the anonymity of communication;
- reducing the psychological risk of increased trauma;
- formation of new forms and styles of Internet etiquette.

The style of virtual communication (Gong, Gao, Li, & Lai, 2021) is defined as an individual characteristic of educational seekers' virtual communication, characterized by interaction with respondents through network technologies.

The formation of virtual communication skills in future professionals in the socio-economic sphere involves the communicator's ability to understand the language of numbers, develop individual tactics, and establish interpersonal relationships with virtual interlocutors. The criteria for expert assessment regarding the features of communicative knowledge and skills in virtual communication include the ability to receive and understand information, express opinions, build virtual relationships, and develop an individual behavior strategy.

Thus, the virtual communicative competence of students will shape their understanding of the essence of cultural tendencies in speech etiquette in postmodern society, contributing to the development of their skills in mediated interaction in virtual spaces, remote telephone conversations for obtaining information, consultations in resolving complex situations, acquiring necessary preliminary information, scheduling meetings, and providing consultations. Therefore, the awareness of future professionals in the socio-economic sphere regarding the features of virtual communication confirms the level of development of their communicative competence.

In the future, we practically applied distance learning web services (e-mail, Google Classroom, Telegram, SMS, and Viber) and proved their effectiveness in the qualified training of future specialists of the experimental group of people. Regarding the qualitative implementation of this method in the educational process of higher education institutions, it is worth noting the possibility of using interactive video and audio presentations (Skype, Zoom, MS Teams, Google Meet) to implement virtual communication on various platforms (Reese, 2011).

Statistical calculations based on the Student's criterion ( $S_{m1} = \sqrt{SS / N(N - 1)}$ ;  $S_{m1}(CG) = 0.187$ ;  $S_{m2}(EG) = 0.189$ ) indicate that the difference in performance indicators between the CG and EG individuals is not significant, and the results are approximately the same. This allows for their identification on general grounds of developing communicative competence. As for the effectiveness of using virtual communication technologies in the educational environment of educational institutions, it should be noted that the success of using interactive posters and project technologies according to this criterion for the topic "Computer Animation" through digital input in the EG is higher ( $S_{m1}(EG) = 0.194$ ) than in the CG individuals, who used

written submissions on provided forms ( $S_{m1}(CG) = 0.177$ ). The calculations show a certain difference in the indicators, indicating the advantages of distance learning for EG individuals.

$\Delta_1 = 0,296 \pm 0,32$  – in EG individuals;  
 $\Delta_2 = 0,289 \pm 0,38$  – in CG individuals.

Thus, the experimental and control samples have some minor errors regarding the implementation of distance learning in the educational process of educational institutions, which highlights the importance of the following priorities of virtual communication in the development of communicative competence among education seekers: accessibility of training (for people with special needs, increasing the audience of students):

- individual focus of training,
- providing comfortable conditions for students and teachers,
- individual psychological features of cognitive processes,
- individual learning pace
- improvement of information culture, etc.

One of the indicators of the formation of communicative competence of future specialists in the socioeconomic sphere is education in overcoming communication barriers. In general, communication barriers are obstacles to the exchange of information from the recipient (receiver) to the communicator (sender of information). Kuhbandner C., Spachtholz P., & Pastötter B. (2016) argue that communication barriers are psychological in nature and serve as a defense mechanism against distorted information.

Communication barriers in postmodern society are due to the following factors (Grimwood, Gordon, & Stevens, 2018):

- the difference in national traditions and cultures of people communicating;
- the difference in the level of education, values, and religious affiliation;
- age difference;
- social and property status;
- belonging to the male or female gender;
- disagreement in life needs and goals;
- a feature of the psyche of communicators;
- the presence of stereotyped thinking in the human mind, etc.

As for speech and stylistic provocations of

communication barriers, it is worth noting the following obstacles in communication (Pedersen, Fitzke, Bouskill, & Sedano, 2021):

- stylistic and phonetic barriers (violation of pace, diction, speed, and volume of speech);
- intellectual barrier (logico-agrammatic features of thinking);
- semantic barrier (caused by a person's own life experience);
- emotional barrier (difference in emotional background between partners);
- motivational barrier (diversity of goals, instructions, and motivation);
- socio-role barrier, etc.

There are also *speech barriers to communication* (communication in different languages). Often, the same expressions can be interpreted differently by communicators, and some words can be understood differently by them. Knowledge of overcoming communication barriers is the most important component in the ability to communicate effectively. Therefore, the acquisition by future specialists of the socio-economic field of knowledge and skills to overcome communicative barriers is a significant indicator of the level of communication competence formation (Savicki & Price, 2017).

Thus, the communicative competence of future workers in the socio-economic sphere is determined by the dependence of scientific knowledge, intellectual and practical abilities, and skills, virtual education regarding interpersonal interaction, education in overcoming communication barriers, general culture, and personal qualities of education seekers capable of solving life-creating tasks.

**Results and Discussion**

In the process of researching the levels of formation of communicative readiness for effective communication in future workers of the socio-economic sphere in the context of the indicated indicators, the following psychodiagnostic methods were used, presented in Table 2. The criteria for evaluating communicative competence about the problems of speech etiquette in a postmodern society were noted as follows (Buckner, Zhang & Blanco, 2021): cognitive (knowledge of professional communication, specific skills of virtual communication, skills to overcome communication barriers), personal (availability of empathy, communicative tolerance, conflict resistance, and emotional self-regulation skills), activity (perceptive skills and non-verbal communication, speech literacy, reflection ).

**Table 2.** Psychodiagnostic measurements of the levels of communicative competence formation in future workers in the socio-economic sphere

| Criteria              | Measures  | Methods   |
|-----------------------|---|---|
| Cognitive criterion   | Specifics of professional communication           | Questionnaire "Determining the level of knowledge of the specifics of professional communication" (N. Kozhemyako) |
|                       | Orientation in professional terminology           | "Language barriers in communication" test (V. McLean)   |
|                       | Specificity of the skill of virtual communication | Questionnaire "To what extent do you know professional terminology" (I. Vlasiuk)                                  |
|                       | Skills for overcoming communication barriers      | Test "Computer communications" (O. Punko)   |
| Personal criterion    | Communicative tolerance                           | Diagnostics of emotional intelligence (E. Hall)   |
|                       | Emotional self-regulation skills                  | Diagnostics of communicative tolerance (V. Boyko)   |
|                       | Presence of empathy                               | Behavior description test (K. Thomas)   |
|                       | Conflict tolerance                                | Diagnosis of the ability to empathize (E. Rogov)  |
| Operational criterion | Speech literacy                                   | Test "Assessment of the level of sociability" (V. Ryakhovsky)   |
|                       | Perceptual skills                                 | Test "Types of speech activity"   |
|                       | Non-verbal communication skills                   | Self-assessment of the level of ontogenetic reflection (N. Fetiskin)  |
|                       | Presence of reflection                            | Test "What do facial expressions and gestures tell you?" (O. Shayuk)  |

Experimental work on the formation of communicative competence in future employees of the socio-economic sphere involved the gradual introduction of a set of techniques,

methods, and teaching tools that harmoniously complement each other, guaranteeing the effectiveness of the planned result (Table 3).

**Table 3.**

*Criteria for assessing the formation of the level of communicative competence of future specialists in the socio-economic sphere*

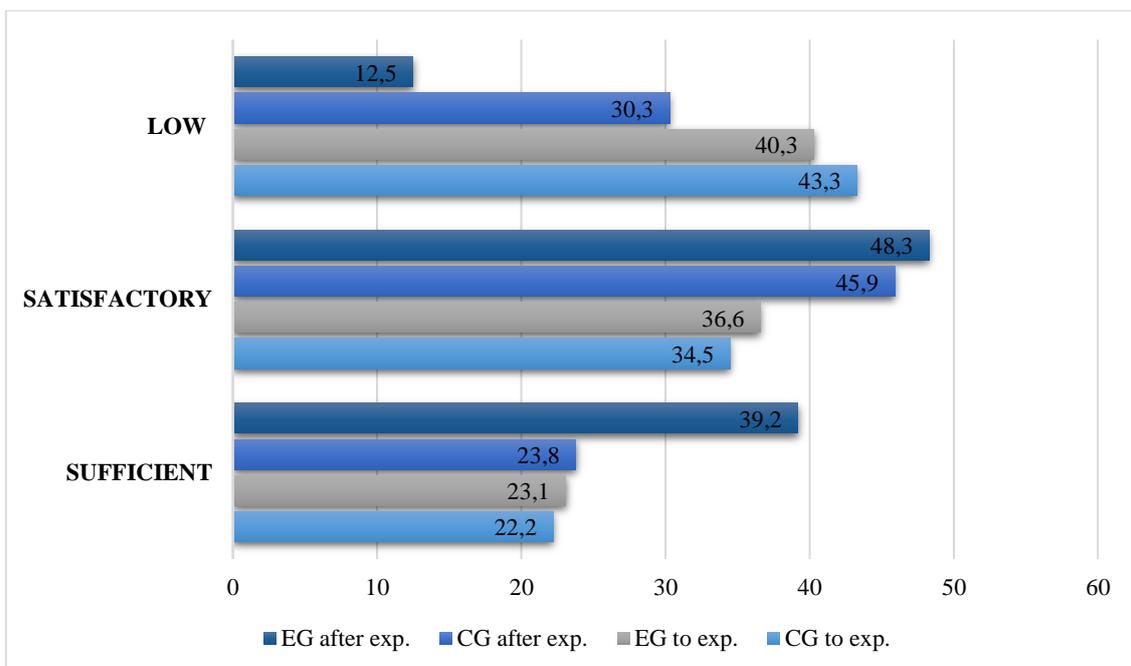
| Levels       | Criteria  | Before experiment |          | After experiment |          |
|--------------|-----------|-------------------|----------|------------------|----------|
|              |           | CG, in %          | CG, in % | CG, in %         | CG, in % |
| Sufficient   | Cognitive | 22,2              | 23,1     | 23,8             | 39,2     |
| Satisfactory |           | 34,5              | 36,6     | 45,9             | 48,3     |
| Low          |           | 43,3              | 40,3     | 30,3             | 12,5     |
| Sufficient   | Activity  | 20,5              | 19,2     | 24,6             | 38,3     |
| Satisfactory |           | 45,1              | 45,8     | 45,1             | 46,7     |
| Low          |           | 34,4              | 35,0     | 30,3             | 15,0     |
| Sufficient   | Personal  | 21,3              | 20,8     | 26,2             | 46,7     |
| Satisfactory |           | 46,7              | 46,7     | 46,7             | 50,0     |
| Low          |           | 32,0              | 32,5     | 27,1             | 10,0     |

According to the results of the diagnostics, after the end of the experiment, it was found that in the group studied in the implementation of technologies of preparation for professional activity, there were significant positive changes in the formation of communicative competence of future specialists in the socio-economic sphere in comparison with the control group of people, according to the results of which no significant changes were observed (Fig. 2, 3, 4).

As can be seen from Fig. 2., significant changes in the development of communicative competence of future workers in the socio-economic sphere according to the cognitive criterion were observed in the

experimental group, in the context of which purposeful corrective work was carried out. Thus, at a low level, the indicators of results decreased by 24.2%, at a satisfactory level, they increased by 2.5%, and at a sufficient level, by 21.7%, which indicates an increase in the level of communicative interaction of specialists.

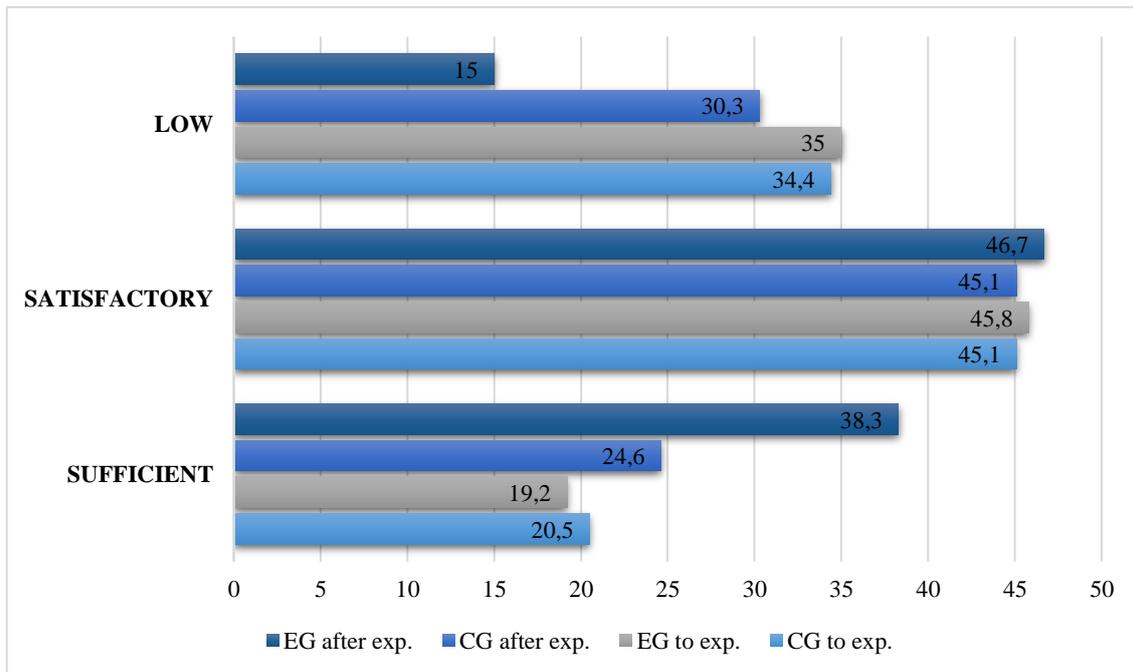
Changes in this criterion are also observed in the control group, but not so significantly compared to the experimental group: at a low level, the results decreased by 5.7%, at a satisfactory level, they increased by 1.6%, and at a sufficient level, by 4.1%.



**Fig. 2.** Indicators of the levels of the formation of communicative competence in respondents according to the cognitive criterion before and after the experiment

Perceptible changes in measuring the levels of formation of professional communications in future employees of the socioeconomic sphere according to the activity criterion are shown in Fig. 3, where, thanks to the targeted work,

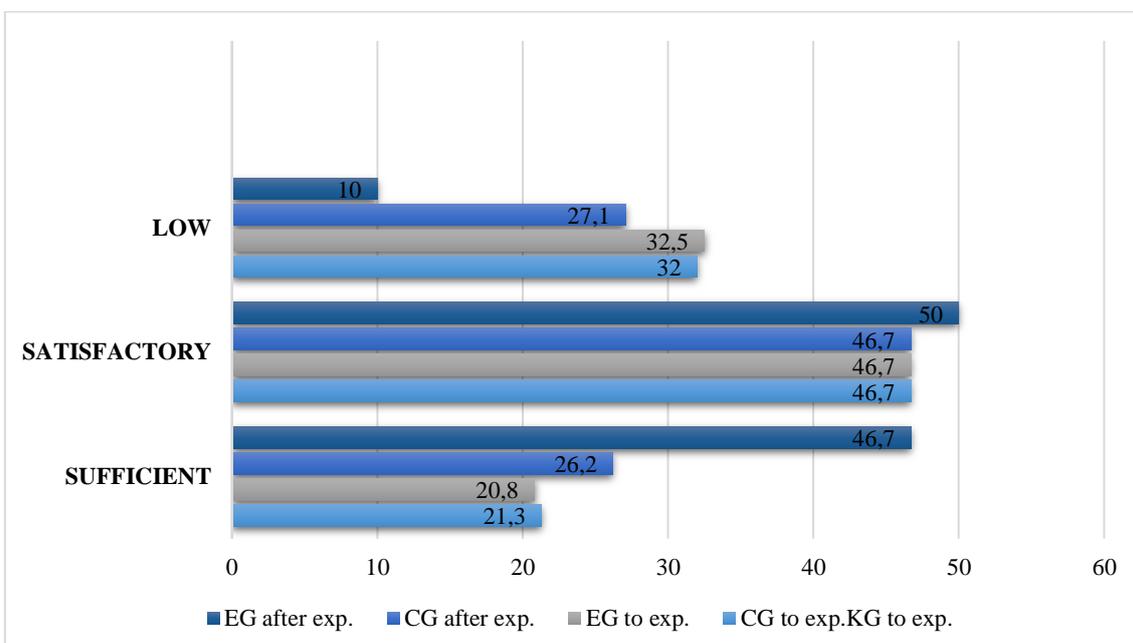
improvements occurred in the experimental group. Thus, at a low level, the indicators of results decreased by 20.0%, at a satisfactory level, they increased by 0.9%, and at a sufficient level, by 19.1%.



**Fig. 3.** Indicators of the levels of the formation of communicative competence in respondents according to the activity criterion before and after the experiment

Changes according to this criterion are also characteristic of the control group, which turned out to be less significant compared to the experimental group. At a low level, the indicators

of results decreased by 4.1%, at a satisfactory level, no changes were detected, at a sufficient level, the results increased by 4.1%.



**Fig. 4.** Indicators of the levels of the formation of communicative competence in respondents according to personal criteria before and after the experiment

Perceptible changes were ascertained in terms of the level of formation of communicative competence of future workers in the socioeconomic sphere according to the personal criterion, which occurred in the experimental group (Fig. 4) in the context of purposeful work with education seekers. Thus, at a low level, the indicators of the results decreased by 22.5%, at a satisfactory level, there was a difference of 3.3%, at a sufficient level, the indicators increased by 19.2%.

In the control group, no significant changes, according to this criterion, were noted in comparison with the experimental group of persons. Indicators of low-level results were diagnosed, which decreased by 4.9%, at a satisfactory level, no changes are visible (the indicator corresponds to the mark of 46.7%), at a sufficient level, the indicators of results increased by 4.9%.

### Conclusions

Thus, the implementation of training technologies for the professional support of future workers in the socio-economic sphere contributed to increasing the level of communicative competence at a high level, which is characterized by a mark according to the results of the study in the experimental group of people with a difference before and after the experiment of  $39.2\% \geq 19.2\%$  and in the control group -  $24.6\% \geq 20.5\%$ , at a satisfactory level the difference was noted in EG students -  $48.3\% \geq 45.8\%$ , and in CG students - by  $45.9\% \geq 45.1\%$ , the low level was evidenced by the indicators of future EG specialists with a difference of  $12.5\% \leq 35.0\%$  and among CG respondents – by  $29.5\% \leq 34.4\%$ .

Therefore, communicative competence is characterized as a complex integral personal formation, which is determined by developed individual and personal qualities and the presence of practical skills and communication skills, as well as knowledge of the rules and norms of communicative behavior in society, which are necessary for the implementation of constructive interaction with the surrounding people, and the ability to their application in the field of professional activity.

The conducted research does not reveal all aspects of the need for the formed communicative competence of future workers in the socioeconomic sphere but outlines the peculiarities of its development according to the problem of speech culture and communication etiquette in a postmodern society. The perspective of further scientific research is the

development of communicative competence of future employees of the socioeconomic sphere in the content of continuous education regarding the implementation of comparative pedagogical experience in the formation of communicative competence based on the results in Ukraine and abroad.

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## Biography as a factor of shaping the artist's creative style

### Біографія як чинник формування творчого стилю митця

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#### Abstract

The objective of the article is to specify the essence of the chronicle as a sociocultural, anthropocentric phenomenon, as well as to justify the significance of biographical factors in the establishment and development of the master's creative style. Its implementation has become possible via involving a number of general scientific methods (induction, deduction, synthesis, etc.) alongside with the following interdisciplinary approaches: culture studies, comparative, biographical, analytical, systemic, etc. It was confirmed that: the biography is the central genre of comparative humanitarian studies. It implements ontology, outlook and the key achievements of an individual. Due to its multifaceted and universal character, the biography appears an important factor of shaping, transforming and studying the master's technique; it fixes and explicates the basic stages of a creative personality's individual history, biography events that have presupposed active/passive character, justified the person's spiritual requirements and revealed their philosophical paradigm. While rebroadcasting

#### Анотація

Мета статті – уточнити сутність життєпису як соціокультурного, антропоцентричного феномену, довести вагомість біографічних чинників на становлення та розвиток творчого стилю майстра. Її реалізація уможливилась шляхом застосування низки загальнонаукових методів (індукція, дедукція, аналіз, синтез й т.д.), а також міждисциплінарних підходів: культурологічного, компаративного, біографічного, аналітичного, системного та ін. Доведено: життєпис – центральний жанр сучасної гуманітаристики. Він імплементує онтологію, світогляд, провідні напрацювання особистості. Завдяки своїй багатогранності, універсальності біографія постає вагомим чинником формування, трансформації, студювання почерку метра; фіксує, експлікує основні етапи індивідуальної історії креативної персони, життєписні події, котрі обумовили активність / пасивність, пояснює духовні запити людини, розкриває її філософську парадигму. Ретранслюючи літопис метра, автор паралельно висвітлює соціокультурну

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the master's chronicle, the author simultaneously reveals the sociocultural situation in which the character used to exist, and demonstrates the dominating concepts of the period.

**Key words:** biography, the artist, creative style, artistic opus, humanitarian studies.

## Introduction

Humanitarian studies give significant importance to realizing the creative personality's practical activity, as it enhances civilizational processes reconstruction and promotes the study of Homo sapiens progress regulations. The master's creative style is a complex and controversial phenomenon and its formation depends on many factors. In our view, among the dominant ones are the following: sociocultural, historical situation of the era in which the individual exists; family-like atmosphere, immediate environment; psychological qualities, the mindset, skills, etc. The artistic canvas of the world is multifaceted. While experiencing its images, considering certain events, passing them through the "Self" prism, the master broadcasts the experienced impressions via opuses. Thus, life collisions not only become the facts of the individual's past but are also consciously or intuitively projected onto the artist's elaborations, thereby determining the specifics of the writing manner. Within this framework, biography is a panoramic mirror reflecting the person's daily routines with their searches, discoveries, achievements, hopes, disappointments, losses, etc. The universality of the aforementioned genre, a significant scientific potential require a comprehensive study of its regularities, functions, tasks, as well as revealing its impact on civilizational transformations.

The objective of the article is to specify the essence of biography as a sociocultural, anthropocentric phenomenon, to confirm the importance of biographical factors for the establishment and development of the master's creative style.

Scientific novelty – for the first time ever within the science discourse, the interaction between the master's chronicle and the uniqueness of their creative achievements was justified.

## Literature review

The current stage of humanitarian studies development is characterized by flourishing of personality study, which has supplemented and clarified a significant corpus of philanthropic knowledge. Various aspects of demiurge's

ситуацію, в якій побутував герой оповіді, демонструє домінуючі концепти доби.

**Ключові слова:** біографія, митець, творчий стиль, мистецький опус, гуманітаристика.

biography research are represented by works of the leading contemporary Ukrainian scientists who conduct their investigations within the focus of European scientific trends. They study biography content I. Golubovich (2009), O. Popovych (2011), Yu Vernik (2013) and some others); its conceptual and typological features (V. Andreiev (2011), V. Bondarchuk (2017), U. Hrab (2016), V. Levchenko (2016), S. Liashko (2013), M. Minakov (2015), V. Menzhulin (2011), O. Onufriienko (2011) and some others); the genre genesis and transformation from the antiquity to nowadays N. Novosad & Moroz (2014), Z. Svjashhenko (2017) and some others); realize the implementation of the epoch profile, the dominant anthropological ideas within the master's chronicle A. Valevskiy (1993), T. Vlasova & Kryvchik, Gh.Gh (2018) and some others); the ways of broadcasting individual and corporate experience via the master's biography Astalosh & Mykulanynets, (2021), N. Bohdanova (2011), A. Kosheljev (2021), L. Mykulanynets (2018, 2021) and some others); the communicative potential of the master's chronicle Artemenko, (2018), Iu. Vernik (2013), N. Dichek (2016), O. Zlotnyk (2019) and some others); explicate the description of being as a means of culture interpretation L. Mykulanynets (2015), O. Popovych (2011) and some others); interpret an artwork as part of the master's personal history Babenko, (2005), S. Matsenko (2014), T. Cherkashyna (2008), (2015) and some others); reveal biographical concepts within the artistic opuses L. Mykulanynets (2022), Muratova O. (2020) and some others), etc.

Scientific reference review witnesses a significant interest to the creative personality's ontology, the biography as a form of its fixation and cognition. Ever-changing civilizational conditions, innovative social requirements demand further mastering of the genre within the framework of the key basis of the trans-modern epoch. The works that reveal the biography within the aspect of its impact on the formation, metamorphosis of the demiurge's creative style,

their choice of specific issues, genres for self-expression appear relevant.

### Methodology

Implementing the objective of the article has become possible due to involving a number of general scientific methods (induction, deduction, analysis, synthesis, etc.), as well as interdisciplinary approaches: culture studies – by studying the interaction between sociocultural and personalized dimensions of the creative individual's existence; comparative – by comparing the uniqueness of the stages of the master's chronicles; stylistic – by revealing the specifics of the master's style transformation at various stages of the existence; biographical – by researching age and ontological aspects of the master's daily routine; analytical – by the grasp of the corpus of theses on the aforementioned issues; systemic – comprehensively and in accordance with humanitarian studies achievements, via considering the suggested question; theoretical generalization – by summarizing the research results.

### Results and discussions

Biography is one of the oldest and most significant humanistic genres in European history. In different eras, it performed important civilizational and social functions, and reflected the dominant worldview priorities. The tradition of connecting artworks understanding with their creator's biography dates back to the theses by F. Schleiermacher (1768 - 1834), who was convinced in the following: mastering a text means understanding its author, i. e. the subject of the text. The 19<sup>th</sup> century became the next stage within this route. This time was marked by a boost of personality studies presupposed by the scientific activity of Sh. O. Sainte-Beuve (2008) - the biographical method founder. The essence of the scholar's views is that an artistic opus cannot be considered without the analysis of demiurge's individuality, their psychology, family atmosphere and immediate surrounding. The abovementioned factors impact shaping and transformation of the master's talent and artistic manner. The ideas of the scholar were appreciated by the researchers of further periods, and they were convinced that the most important experience, as well as the facts of being, are reconsidered and reflected in opuses.

At the boundary of the 19<sup>th</sup> and the early 20<sup>th</sup> centuries, scientists studied the chronicles in order to understand the master's / philosopher's character. The construction of the strategy of

personal existence, the presence (absence) of controversies between the ideas and actions represented by creativity aroused interest. In the result of the accumulated information, conclusions were made regarding the following: the opinion authority of a person having a certain fortune, a peculiar daily routine; the reasonableness of their assertions, the appropriateness of their use while shaping innovative humanistic knowledge. The relevance of such research is due to the enhancement of the master's social role, interpreting them as accelerators of public and cultural processes, an attempt to understand global disturbances through the grasp of the prominent person's microcosm.

In the 20<sup>th</sup> century, the interest to the creative person increased. They are interpreted as carriers of a special life-giving energy able to change the world efficiently. Thus, the study of individual history by the public shapes a critical non-conformist consciousness and prevents people from neglecting their personal features. Most anthropologists of the aforementioned period regard the master's elaborations as an expression of their essence (although the formal school representatives disagree on this).

The role of the artist during the postmodernism epoch is extremely complicated and ambiguous (as something personal as the "product" of their activity), it lies in recreating the atmosphere of the existence absurdity, in revealing the cult of an autonomous personality, in combining various trends and focuses into a single unity, in theatricalizing the surrounding reality, etc. The abovementioned processes have intensified the search of representatives of various humanitarian fields in order to find adequate methodology of researching the master's creative style. A certain scientific universality was justified by biographical studies, which, by implementing a wide range of philanthropic knowledge, documentary references, the achievements of applied disciplines, have offered the ways of studying various aspects of a creative personality's existence and practical activity. This promoted a more appropriate cognition of their nature and gave the clue to interpreting their theses.

The 21<sup>st</sup> century is a boost of personality studies, which have integrated into almost all the spheres of Homo sapiens activity. It was especially profoundly displayed in visual art forms - on television and the Internet domain. Nowadays, we can manifest the emergence of a significant number of films, documentaries and journalistic



programs. The goal is to reveal the secrets of success, the ways of structuring the progress pathway, creative style interpretation, the philosophy of prominent profiles of both nowadays and the preceding historical epochs. The center of the concept of such projects is usually a chronological description of a personality's existence, drawing parallels between the facts of their daily routine and significant achievements (which have become their feedback), civilizational mission outline, etc. They are focused on the recipient of various intellectual and spiritual levels; they aspire after demonstrating a successful hero model (which anyone could imitate) and encouraging an average dweller to self-fulfill.

Within the scientific discourse, the chronicle research is characteristic of nearly all the humanitarian disciplines. Significant achievements are represented in pedagogy, culture studies, sociology, philology, psychology, philosophy and some others. A specific biographical trend was formed in art studies. By implementing a large-scale corpus of the achievements of applied sciences, it studies the uniqueness of the master's being by means of projecting its impact on the individual creative style. Thus, a postulate is being justified: life events registered in the creative individual's chronicles are being sublimated due to the master's theses.

The generally accepted traditional definition of a chronicle is the following: this is a retrospective, chronological description of the personality's existence and significant achievements from birth to death. The art studies type of the genre has its own specifics, since the ontology constituents are cultural artifacts created by its character. The study of various domains of the creative personality's daily routine is an essential background for the grasp of the artistic and image-bearing, emotional and intellectual world of their achievements. While plunging into the life atmosphere, the scientist reconstructs and explains the individual's practical activity, acknowledges with the multifaceted circumstances that reveal the sense and the stylistic parameters of opuses. Private experience, moral and ethical, political and public positions are reflected in an artistic sample depicting the reality through the prism of the author's subjective vision. An opus is a form of highlighting an individual reality concept, implementing exceptional ideas of the dynamics of essential processes. The master's philosophical paradigm finds its artistic expression through a characteristic combination of a content series.

There exists a large number of interactions between a demiurge and an artwork; they outline the issues of the selected genre, stylistics, the presentation method and predicting the reaction.

An important feature of biography is a vivid sociocultural context. Any master is a hero of a certain epoch (although they may not tolerate its ideology or the dominant views); their life unfolds within the historical realities determining individual specifics of being. Moreover, an author who is structuring a chronicle builds the narrative in accordance with literature and artistic canons, social requirements functioning at a specific time. He emphasizes the key civilization basis, public ideals manifested by the character. Thus, the genre under consideration appears as an anthropological phenomenon able to broadcast information not only about a person, but also about their attitudes, controversies, challenges and the heritage of an era.

While cognizing the creative personality's biography, scientists traditionally divide it into stages. This contributes to highlighting the key moments of life, a detailed study of the factors having influenced the formation and crystallization of everyday status. The generally accepted stages are the following: early (the personality's formation and individual writing manner), mature (the assertion of their own philosophy and professional skills), late (summarizing the creative and ontological results). The quality of everyone's experience determines not only shaping psychological features and world outlook, but is also reflected in their achievements. Let us consider each period in more detail in order to reveal the personality's evolution and to realize the role in the artistic style formation.

The early stage (approximately up to 18-25 years) encompasses childhood and youth. In scientific research, scientists (with an exception for wunderkinds' biographies) usually skip early childhood. This tendency is a certain atavism of the previous epochs (before the 20th century), when children were considered not quite mature people. It was essential to wait for their adulthood, and only then to regard their potential and achievements seriously. However, it has already been scientifically confirmed that the abovementioned stage is a crucial form of a personality's existence, which will focus their values, requirements and ideals in the future. Within this period, there occur: the formation of the "Self" concept, the characteristic features of personal creative style, the manner of expressing



an artistic image and thought presentation, which are going to become the mature style basis.

At this stage, a significant importance is given to the master's identity, social and cultural environment, family-like atmosphere, historical and political background for growth, which speed up (or slow down) the process of professional self-fulfillment. The private life events, learning from the wise and iconic teachers, being acknowledged with outstanding masters' opuses, perceiving world masterpieces, distinguishing favorite ones define the specifics of the creative personality's way of thinking. The elaborations of the aforementioned development stage are not often autonomous or innovative, they are exposed to the existing canons; however, they implement the accumulated experience, demonstrate the difficult path of the identity search and become the basis for personal discoveries.

It is vital that the biography author focuses on understanding the psycho-age, immanent and stylistic, sociocultural background for the hero formation. It requires a detailed revealing of significant events, impressions and meetings from the young talented person's life. This will enable to understand the temperament, character, preferences and appeal to certain topics, artistic trends, as well as to justify the choice of expressive means, etc., thus to decode the program of progress. The abovementioned stage of wunderkinds should be scrupulously studied, since their giftedness and independent, unique style are established during the early period.

The mature stage (in the Christian and Jewish tradition it refers to 33 – 70 year olds) is characterized by the activity intensity, the emergence of remarkable opuses, the establishment of personal philosophical position, identifying new creative paths, etc. This is the most long-lasting, controversial and heterogeneous stage of the master's ontology, the consequence of which is usually the following: realizing the importance of personal practical activity, responsible attitude to the ideas being broadcast; self-reflection, energy concentration on opuses; conscious qualitative world transformation through the responsible cultural creative work, aspiring after transferring the accumulated experience to the next generations of recipients, leaving a personal footprint in history.

The importance of the abovementioned period requires not only the analysis of the master's achievements, but also seeking methods of

interpreting the individual writing manner. It is essential to outline the reasons for appealing to a certain issue or genre clearly. For this, it is appropriate for the scientist to study the autobiographical material thoroughly (in case it is available, since not every performer aspires after explaining his spiritual intentions verbally), the information that the demiurges have broadcast about themselves and their opuses, to plunge into their microcosm. It is also worth considering a significant layer of epistolary and science literature, letters, their contemporaries' memories, diaries, archival documents, etc. It is vital to see a real person rather than an idealized image being quite often offered by classical art studies, which is still under the influence of the Victorian chronicle type (only positive sides of the master's existence are demonstrated).

While reproducing the chronotope of the artist's life creativity, the author is obliged to restore the psychological portrait, mental organization, to accentuate the collisions running through their being. It is important to outline private events in detail, as well as to be highly adequate, i. e. not to descend to the level of the so-called "yellow press", not to get involved in myth-making and indulgence in the show business laws (in order to arouse interest to the character from the recipients' side). It is appropriate to compare the personal and occupational, to justify the choice of genres, subordination of the opus content to the master's life vicissitudes. When the master deliberately deviates from the autobiographical nature of personal achievements, which is a quite rare phenomenon in itself (K. Debussy, O. Skriabin and some others), it is worth explaining the nature and essence of the parallel existence of creative and private world. Moreover, it is not desirable to explain the artwork semantics primitively, by interpreting it as a literal reflection of the chronicle data. Before becoming an artwork, the phenomenon is exposed to reconsideration and is being sublimated into creative energy, and only thereafter becomes a cultural artifact.

The stylistic parameters of the mature stage are characterized by asserting an individual way of thinking (rooted in tradition, or deliberately opposed to it, but with a clearly defined unique manner), selecting the author's methodology for solving artistic issues, philosophical late themes, the independence of thought, designing new artistic ways and some others. During this period, the demiurge is usually not afraid to experiment, to go beyond the manifested canons; they promote their elaborations, etc.

The late period is consolidating the achieved results, reassessing the values being broadcast during the lifetime, transition to the patriarch's status, the reduction of practical intensity, summarizing ontological results. This stage of the master's existence is characterized by the artistic thinking transformation, the reflection of the progress being accomplished, accentuating attention on the past years' experience. The daily priorities change, the demiurge's activeness is directed from external dimensions to internal ones; the reflections and philosophical generalizations are getting intense. The aforementioned processes also affect the master's public image and their style specifics. They tend to appeal to eternal issues (God, death, immortality, civilization, humanity, etc.), as well as to global problems.

In old age, the master is less interested in the public side of life; they rarely appear at public events, their circle of communication being limited to the family and close friends. Such a chronicle scenario affects their creative style. Quite often, they appeal to chambering, intimacy of expression, the simplicity of thought and a kind of autobiography (via self-quoting, allusion and reminiscence). For a conscious master, the period under analysis lies in summing up, preparing for eternity; therefore, the demiurge's "words" are perceived as a special *Homo sapiens* message.

Every stage of the master's biography is self-sufficient and significant, even if it was not enlightened by significant achievement. Moreover, it is worth remembering that talent has its specific time for public recognition. The master may sometimes predict cultural tendencies that are likely to become dominant in further centuries. Thus, a thoughtful researcher takes great responsibility in structuring the creative personality's chronicle, realizing the important civilizational role of their work.

The conducted research enables to manifest that the artist's biography is a multifaceted narration about the life-creating mission implementation. It reflects the key facts of existence, explains the motives, actions and behavior of the character. The master transmits the external stimuli (historical, economic, social, etc.) through the inner being, and then reflects them via personal practical activity, thereby making them a creative style constituent. The artistic heritage is a concentration of a large-scale layer of phenomena being perceived and reconsidered by a unique profile and embodied in an artistic form.

## Conclusions

Biography is the central anthropological genre of contemporary humanitarian study. It implements the ontology, world outlook and the key achievements of a unique personality. Due to its multifaceted nature and universality, biography becomes a significant factor of shaping, transformation and studying the master's style; it registers and explicates the basic stages of individual history, as chronicled events presuppose creative activity / passivity, explain spiritual inquiries and reveal a philosophical paradigm. While rebroadcasting the master's chronicle, the author simultaneously depicts the sociocultural situation, in which the character of the narration exists and demonstrates the dominant concepts of the era.

Before becoming an artistic image, the reality passes through the demiurge's inner essence, while the existence facts are becoming a meaningful component of an artistic opus. Life episodes can be broadcast in different ways: through practice integration into a certain civilizational process; the blending of personal experience and social phenomena within artistic activity. The condition for implementing chronicles with creative samples lies in the master's ability to productively observe and consider the reality, to specifically sympathize with it (so that it occurs part of their "Self"), to be conscious and responsible towards themselves.

The article under consideration does not reveal all the aspects of the issued problematic field. Research dedicated to the study of prominent masters' biographies, as well as to revealing the role of staged opuses in the master's creative activity, and realizing the demiurge's civilizing mission appear perspective.

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## Accounting and financial mechanism of business interaction: directions for the recovery of the tourism industry

### Трансформація обліково-фінансового механізму взаємодії бізнесу: напрями відновлення в контексті розвитку туристичної індустрії в Україні

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#### Abstract

The object of the study is the transformation trends of the accounting and financial mechanism of business interaction in the context of the development of the tourism industry in Ukraine. The main goal is to show the mutual influence of inflation trends, growth rates, debt volumes and the degree of fragmentation on incentives for investment in the recovery of the tourism industry. The main hypothesis of the study is the assumption of the possibility of restoring the tourism potential of Ukraine due to the introduction of the latest financial and economic technologies of digital transformation, national restoration projects, digital interaction platforms. The main conclusion: supply chain disruptions will not affect business activity and business interaction, while the cost of living crisis may be nearing its peak. It is proposed to carry out an effective policy in the field of providing the financial market with innovative regulatory tools and attracting new investment resources with a guarantee of a high-quality end result through the implementation of a framework accounting and financial mechanism for the interaction of tourism business with international donors, state and local authorities based on mastering the latest tools of public interaction on modern digital platforms.

#### Анотація

Об'єктом дослідження є тенденції трансформації обліково-фінансового механізму взаємодії бізнесу в контексті розвитку туристичної індустрії в Україні. Основна мета - показати взаємовплив трендів інфляції, темпів зростання, обсягів заборгованості та ступеня фрагментації на стимули для інвестицій в відновлення туристичної індустрії. Основною гіпотезою дослідження є припущення можливості відновлення туристичного потенціалу України за рахунок впровадженні новітніх фінансово-господарських технологій цифрової трансформації, національних проєктів відновлення, платформ цифрової взаємодії. Висновок дослідження: перебої в ланцюжку постачань не вплинуть на ділову активність та взаємодію бізнесу, при цьому криза вартості життя може наблизитися до максимальних значень. Запропоновано проводити ефективну політику у сфері забезпечення фінансового ринку інноваційними інструментами регулювання та залучення нових інвестиційних ресурсів із гарантуванням якісного кінцевого результату через впровадження рамкового обліково-фінансового механізму взаємодії туристичного бізнесу із міжнародними донорами, державними та місцевими органами влади на основі опанування новітніх

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**Keywords:** accounting and financial mechanism, business interaction, tourism industry, transformation, development.

інструментів публічної взаємодії на сучасних цифрових платформах.

**Ключові слова:** обліково-фінансовий механізм, взаємодія бізнесу, туристична індустрія, розвиток.

## Introduction

The presented study begins with the Introduction, which presents the problems of using the accounting and financial mechanism in the context of determining directions for the recovery of the tourism industry. This section contains analytics on the development of the modern economic environment, which is accompanied by many challenges and crisis situations. It is noted that the surrounding business world is changing faster than ever before: new technologies appear, ideas are implemented that completely change existing industries. Literature Review contains an analysis of existing research by topic, specific examples of key author's research and publications. Existing trends and gaps in this issue are analyzed in detail. Parallels are drawn between previous publications and the rationale for the current study. Methodology contains the set goal of the research, the applied methods are disclosed in detail in the theoretical and practical plane. The hypothesis of this study is also presented, which assumes the potential recovery of the tourism industry of Ukraine through the introduction of the latest financial and economic technologies of digital transformation. In the Results and Discussion section, the authors reveal all aspects of changes in the accounting and financial mechanism in the tourism industry. The authors prove that today's high inflation, low growth rates, high indebtedness and a high degree of fragmentation reduce the incentives for investment necessary for the recovery of the tourism industry. Supply chain disruptions are projected to have no impact on business activity and business interactions, while the cost of living crisis may also be nearing peak values. It is proposed to carry out an effective policy in the field of providing the financial market with innovative regulatory tools and attracting new investment resources with a guarantee of a high-quality end result through the implementation of a framework accounting and financial mechanism for the interaction of tourism business with international donors, state and local authorities based on mastering the latest tools of public interaction on modern digital platforms. As a result of the analysis, Conclusions were made, which indicated the reasons why several global banking institutions

suddenly found themselves on the verge of bankruptcy. The probability of a global financial recession, according to the forecasts of the world's leading economists, is becoming a reality in 2023-2024. However, precisely because of this, the emergence of new threats of financial recession can create new civilizational breakthroughs in sustainable development. It is concluded that at the current stage of the development of the economy of Ukraine, in the conditions of the socio-economic crisis, the state should implement an effective policy in the field of providing the financial market with instruments of banking regulation and attracting new investment resources.

The development of the modern economic environment is accompanied by many challenges and crisis situations, which are an integral part of the Ukrainian economy. The surrounding business world is changing faster than ever before: new technologies appear, ideas are implemented that completely change existing industries. Therefore, the transformation of modern economic systems, which can be represented by the accounting and financial mechanism of business interaction, takes place under the influence of the outlook of new generations, the geopolitical situation in the world, other external and internal factors, and active military operations on the territory of Ukraine. All this forms a new business environment (Povrezniuk et al., 2020), where each company seeks to gain and maintain certain competitive advantages in the market (including the tourist market) in order to achieve long-term success.

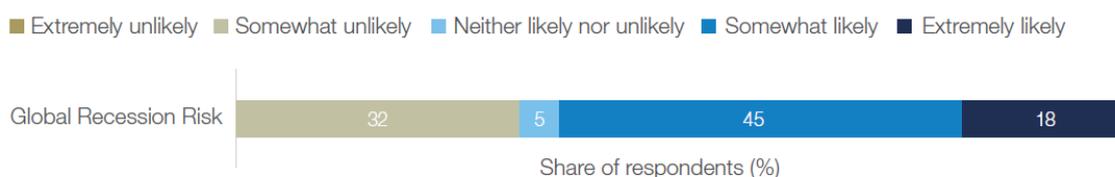
Depending on the stage of development of the business, the company faces various strategic tasks, in particular: entering new markets, launching a new product, gaining market share, increasing the efficiency of cost management, stimulating development, etc. To implement these and other tasks, it is necessary to have significant time, human and financial resources. Companies that do not adapt to the realities of modern times may face a drop in efficiency, the loss of these necessary resources. Often, the biggest business difficulties lie precisely in the

area of finding sources of financing. This is especially true of financing tools, and their availability remains limited. Therefore, the questions become particularly relevant: where to find the necessary resources and how to dispose of them effectively?

The events of the turbulent year 2022 for the entire civilized world and the consequences of the almost two-year global pandemic, the lack of confidence in further sustainable development become the basis for the initiation of the processes of financial recession and, as a result, social disturbance of the population. A survey of

private and public sector financiers conducted by the World Economic Forum in Davos before its opening in 2023 showed that 75% of respondents expect a global recession in 2023.

About 18% consider the onset of a global recession "extremely likely." This is more than double the previous survey conducted in September 2022. Only a third of respondents see a low probability of a recession this year (Markovitz & Karunska, 2023). Figure 1 shows the distribution of the answers of the world's leading economists to the question: "How likely is a global recession in 2023?".



Note: The numbers in the graphs may not add up to 100% because figures have been rounded up/down.

**Figure 1.** Global recession outlook (Markovitz & Karunska, 2023)

The organization's survey was based on 22 responses from a panel of senior economists from international agencies, including the International Monetary Fund, investment banks, multinational corporations and reinsurers. The survey was conducted after the World Bank cut its growth forecasts for 2023 in January 2023 (Kose, 2023) to near-recessionary levels for many countries, as the impact of central bank interest rate hikes increases, military action in Ukraine continues, and permanent global economic incentives cease to work effectively.

The war events of the last year caused the need for structural restructuring of the economy, some of its spheres, in particular, the accounting and financial mechanism of business interaction. Thus, tourism enterprises, creating a product of secondary needs, are forced to switch to management in extreme realities. The complication of the economic situation led to the need to reorganize business processes, diversify services, save resources, and improve the quality of the product of travel agents and tour operators. Therefore, the essence of a tourist service today is defined in the following interrelated aspects (Hryniv, 2019):

focus on the final result - in the form of purposeful work of people, the result of which is the satisfaction of consumer needs; qualitative - in the form of a specific qualitative result, an

expedient activity, which consists in changing the consumer characteristics of the services provided, in the process of mutual relations between the participants of the tourist market; branch, where appropriate types of services are created; financial and accounting, which is related to the accounting of consumer expenses for the purchase of tourist services.

Regarding the specifics of the change in the accounting and financial mechanism in the tourism industry, the following relevant aspects should be noted here: prepayment received from tourists to pay for tours does not increase the tour operator's income (clause 6.3 Kodeksy, 2020). Instead, the tour operator recognizes accounting income either for each concluded travel contract, or for the fact of providing services (that is, taking into account the degree of completion of operations — at the time of their completion in accordance with clause 10 Kodeksy, 2020). In other words, the tour operator generates income at the end of the tour, i.e. providing tourists with the promised service.

Such a reward is reflected in the income according to the date of the act of provided tourist services. After all, the funds received from tourists to pay for tours are in transit: they do not belong to the intermediary-tourist agent, but will be transferred further "as intended" - to the tour operator. Therefore, such "pass-through"

amounts are not included either in the "net" income (clause 6.2 Kodeksy, 2020) or in the travel agent's expenses. But this does not mean that they will not be reflected in accounting at all. Will be displayed, but with zero consequences for the financial result. That is, the transit amounts of the travel agent will be included in the income, but will immediately be excluded from the income.

As for his remuneration, the travel agent, who acts as an intermediary, includes it in income based on the act of services rendered. This act is also drawn up on the date when the travel agent fulfilled the obligations under the agency contract.

In tax accounting, the tour operator is guided by accounting data (clause 134.1.1 Online legal assistance, 2023). However, no "tourist" adjustments for tourist operators are provided for in the Tax Code (Online legal assistance, 2023). Therefore, the actual sale of tourist products affects the subject of income tax in the same way as the accounting financial result.

In most cases, the act of services rendered with tourists is not drawn up after the end of the tour. Therefore, an accounting certificate can be a documentary confirmation of income from a tour operator. At the same time as income, the tour operator recognizes expenses "related" to the provision of tourist services - the cost price of the sold tourist product. The cost price is determined for each tourist product, and it is included in the expenses in the period of recognition of income, that is, according to the fact of providing a tourist service.

### Literature Review

However, modern accounting and financial transformational processes in all spheres of tourist activity lead to the urgent need for the formation of management strategies taking into account the concept of sustainable development based on the model of balancing economic, ecological and social components to improve the quality of life of citizens, ensure the socio-economic development of territories and satisfy the needs of consumers. Ensuring the development of territories through the centralization of approaches, limiting local initiative, turned out to be ineffective and caused the growth of gaps in the socio-economic development of territories. And from here, the following can be identified as the main factors of negative impact on the development of tourism

business at the territorial level (Kyrylenko, & Tulai, 2017):

the slowdown in the development of the tourism sector, the lack of the possibility of providing services and the lack of adaptation to the modern requirements of economic development in wartime conditions;

demographic crisis, manifested in the growth of the specific weight of the population of retirement age due to low birth rate and emigration of the working population; decrease in the number of the rural population and, as a result, a slowdown in the development of agrarian business and green tourism connected to it. One should add to this the forced internal and external migration that occurs during wartime;

lack of an effective social policy aimed at ensuring the declared social standards and development of human capital;

incoherence of the comprehensive policy of territorial development in the context of covering all spheres of life at the local level, which leads to inefficient use of resources, contradictions and non-fulfillment of the planned results of socio-economic development of territories;

lack of qualified personnel in the field of development and implementation of strategies for socio-economic development of territories, insufficient development of public institutions capable of influencing the development of these territories.

However, the intensification of the development of the field of tourist services is conditioned by the influence of a number of factors, among which stand out (Hryniv, 2019):

state policy, which can use such instruments of influence as weakening state regulation, reducing restrictions on trade in services, strengthening laws aimed at increasing the degree of protection of the rights of consumers and employees, strengthening environmental protection;

business development trends, which include the expansion of service activities, the orientation of organizations to improve the quality of services, focusing attention on modern consumer requests; improvement of information technologies, integration of computer and telecommunication technologies, more intensive use of computer equipment and the Internet, emergence of new and improvement of traditional types of services;

social changes, which are reflected in the growth of the population's income, the transformation of the lifestyle, the increase in the cultural and educational level;

internationalization, which is reflected in the exit of the field of tourist services to new markets, the

activation of mergers and acquisitions, and the expansion of activities of transnational service companies.

Traditionally, scientific publications on the researched topic aim to identify separately the issue of accounting in the field of tourism activity and tools for its financial support. The most information is available on the issues of the development of the tourism industry at the expense of programs for the development of territories and the corresponding infrastructure, however, aspects of changes in the financial instruments of the tourism industry are currently almost not presented among modern studies. Ukrainian scientists in (Zhurba, 2020) consider the specifics of financing and promoting the development of the tourism industry in the Scandinavian countries. An interdisciplinary study (Calinescu et al, 2019a) reflects the current investment toolkit, the choice of which depends on the strategic importance of the project in terms of meeting the goals of sustainable development. Aiyar Sh. and colleagues determine that the growing volume of tourist flows determines the priorities for these countries in the context of effective integration, high-quality environmental policy and creation of the maximum attractiveness of the region for tourists. The peculiarities of cooperation of state authorities with tourism companies on the basis of mutually beneficial partnership are shown (Aiyar, Chen, Ebeke, 2023).

At the same time, in the studies, the main attention is paid to the structure of the financial and economic mechanism of support of the tourism sector from the standpoint of state funding. Thus, in the work (Kryvoverets, 2017), special attention is paid to investments in the tourism industry at the expense of state funding, and a fragment of the financial and economic mechanism of local tourism development with a source of funding from the state budget is also given. This work examines the analysis of the quality of services in the management of a tourist enterprise from the point of view of providing sources of financing and their accounting justification. Factors that significantly influence the creation of a quality tourist product and its main components are considered. A list of principles is presented, compliance with which is a necessary requirement for improving the quality of services in tourist enterprises (Kryvoverets, 2017).

However, all the cited publications and analyzed areas of research in no way consider the influence of accounting and financial trends on

the possibilities and prospects of the development of the tourism industry. In addition to the analyzed publications, the authors of the study brought this question to the discussion with representatives of the professional community, which confirms that it cannot provide examples of work ever carried out by scientists of the leading countries of the world, which will be similar to what is proposed in the study (Calinescu, Likhonosova, Zelenko, 2019a).

Based on the results of the review and analysis of the latest publications, it can be noted that the purpose of this study is to find the latest ways of transforming the accounting and financial interaction of business entities at the global and national level for the purpose of restoring the tourism industry of Ukraine.

### Methodology

The study is empirical in nature and involves the analysis of the current situation in the field of the accounting and financial mechanism of business interaction in the context of the functioning of the Ukrainian tourism industry.

To achieve the research goal, the following methods were employed in this study: analysis of theoretical sources, synthesis, comparison and generalization, induction and deduction, analogy, which made it possible to characterize the state of the investigated problem. The authors used a historical and retrospective analysis, which made it possible to draw parallels with similar experiences in other countries of the world. Appeal to this experience is the basis for determining the main trends in the recovery of the tourism industry in Ukraine.

The hypothesis of this study assumed the potential restoration of Ukraine's tourism industry through the implementation of the latest financial and economic technologies of digital transformation, national restoration projects, digital interaction platforms that will provide a transparent mechanism for attracting and developing financial resources for the most relevant projects in the field of tourism for the country.

The results of a theoretical and practical study of the processes of transformation of the accounting and financial mechanism of business interaction proved the existence of a list of various scientific and methodological approaches, the application of which allows determining the level of balance of the country's tourism sector. However, not all the developed methods can be used to determine

the direction of development of the tourism industry in the context of its recovery, taking into account the consequences of military operations. This is connected, firstly, with the essence of the accounting and financial mechanism of business interaction, and, secondly, with the peculiarities of the manifestation of transformation and recovery factors in the tourism industry. Without neglecting the importance of existing scientific and methodological approaches, taking into account the specifics and problems of the research, the development of innovative tools for regulating the financial and accounting processes of public interaction of the tourism business with international donors, state and local authorities in the modern digital environment is becoming urgent.

### Results and Discussion

To support the development of the service sector, it is necessary to solve a complex of complex tasks (Hryniv, 2019):

- 1) formation of favorable conditions for entrepreneurial activity in the service sector, creation of an economic and legal environment that would ensure the stimulation of business activity (consolidation of legal guarantees that ensure freedom, protection and support of private business and non-state forms of entrepreneurship; taking into account the opinion of entrepreneurs when preparing and adopting legislative acts and resolutions; formation of market infrastructure that will ensure entrepreneurial activity).
- 2) creation of real opportunities for every entrepreneur to start an independent entrepreneurial activity in the service sector, access to production, material and technical and financial resources (simplification of the procedure for registering enterprises in the service sector; further development of the commercial system of information support for entrepreneurial activity).
- 3) personnel support for the development of entrepreneurial activity in the service sector (formation of a network of business schools, educational and business centers based on them; creation and organization of activities on social adaptation and training of personnel for the service sector; organization of studying and using the experience of existing entrepreneurship support structures in other regions; development of a plan of measures to provide state support for youth entrepreneurship in the service sector).

- 4) implementation of measures in the field of investment policy aimed at supporting entrepreneurship in the service sector (rational redistribution of investment resources of the region, taking into account the priority of the development of service sectors).

The role of the service sector, including the tourism industry, is also manifested in the fact that it is an important sector that shapes business development both at the level of the national and global economy; plays an important role in the development of human capital; affects the functioning and development of material production; helps increase free time; creates opportunities for fuller satisfaction and development of the needs of people and society; is the most important element in shaping the modern quality of life; ensures the quality of economic growth and increasing the country's competitiveness. However, in recent years, the main trend has been to reduce the volume of provision of certain types of services due to the reduction of tourist services; a change in the structure of the population's demand for tourist services, a reduction in sanatorium-resort and wellness services, and not only because of the military actions in the country, but also because of an increase in the gap between solvent demand and supply.

Therefore, for the further development of the field of the tourism industry, it is necessary to solve a set of mutually agreed tasks: the formation of favorable conditions for entrepreneurial activity in the service sector; creating an economic and legal environment; improvement of the local self-government mechanism; involvement of the community in active participation in determining the priority directions for the growth of the services market; creation of real opportunities for every entrepreneur regarding access to production, material, technical and financial resources; further development of the commercial system of information support for entrepreneurial activity; application of the partnership mechanism to stimulate the development of promising types of activities in the field of tourist services; implementation of measures in the field of investment policy and promotion of innovative business investment; support for the development of network and cluster structures of a directly service nature (transport-logistics, tourism-recreational, cultural-entertainment, etc.).

For Ukraine, the implementation of the strategy of the transition of the service sector to the innovation-investment model of the development of the tourism sector, which will make it possible to activate all types of economic activity in the production and implementation of services, will become one of the components of the economic security of entrepreneurship (Calinescu & Pidmohylnyi, 2022; Calinescu et al., 2021a) and in general - tourist business.

It is the given list of factors that affects the transformation of the structure of the financial mechanism of business interaction, the peculiarities of the development of the field of tourist services and provides an opportunity to develop an effective series of measures for the further development of not only the tour industry, but also to contribute to efforts to stabilize the economy of Ukraine due to the accounting and financial improvement of the functioning of the field of tourist services.

In general, the accounting and financial mechanism can be considered as a way of organizing the development of an enterprise with its inherent methods, forms, tools and methods of management and is a component of the economic mechanism (Calinescu et al., 2022a; Calinescu, 2021), which includes types and methods of management of the management apparatus and organizational factor. That is, there is a certain connection between the successful functioning of any subject, the increase in the efficiency of their development, the level of competitiveness and the accounting and financial mechanism. At the same time, the main driving force behind the development of entities is the innovative interaction between different branches of business. Therefore, placing emphasis on the priority components of the accounting and financial mechanism of business interaction will contribute to both the general innovative development of entities, as well as effective business management, activation of innovativeness, etc. Among such components, it is advisable to single out as traditional methods: economic; informative; legal; organizational and technical; administrative, and to pay special attention to socio-psychological methods, the role of which increased in the conditions of martial law and will increase in the future after the reconstruction of business and Ukrainian society. And it is in this regard that quite a lot of hope is placed on the revival of the tourism business in Ukraine.

In the structure of the economic components of the accounting and financial mechanism of the

restoration of the tourism sphere and its innovative development, more attention should be paid to the process of financing and crediting, creation, distribution and implementation of innovative directions of tourism development; taxation and insurance; pricing; stimulation and creation of innovations at various levels of the spread of tourist activity. Particular attention should be paid to the financial and credit component, aimed at creating a favorable credit environment for the recovery of tourism through the introduction of microcredit, preferential lending to business entities, leasing, training on financial and credit issues for service sector employees, etc.

All elements of the accounting and financial mechanism must act in a certain sequence, be characterized by the correspondence and coherence of actions, the interaction of all functional components, and in the conditions of transformation of various business relationships, maintain structural integrity, create prerequisites for increasing the efficiency of tourism activities, innovative development, ensuring the transition to sustainable economic growth not only in the field of tourism, based on the experience of other countries.

However, in the accounting and financial mechanism, significant attention should be paid to control, which should become a special type of activity aimed at timely adoption of corrective and preventive measures in the process of managing the tourism business (Kyrylenko, & Tulai, 2017). Today's changes taking place in the economy of Ukraine, the introduction of new approaches to management in the conditions of military actions and the post-war reconstruction of the country, because the development of entrepreneurship in the country requires a fundamental restructuring in everything. Audit control can be used as a separate type of control, which should be aimed at expanding business ties, democratization processes, using economic levers and incentives aimed at increasing the effectiveness of evaluating the results of tourism activities. The audit is also aimed at ensuring the property interests of specific persons - owners of tourism businesses, who must prepare and use the financial and accounting reports of the audited persons. Therefore, audit control is the main strengthening of financial discipline and stability of business. However, conclusions based on the results of control in most cases are of a recommendatory nature, but they determine the compliance of financial activities with current legislation, the reality and completeness of information display in financial accounting

and reporting and, thus, are one of the main mechanisms for detecting violations of financial discipline, deviations from established norms and the principles of honest business activity and prevents the occurrence of offenses. However, like any business, you can also use creative audit tools (Calinescu, 2019; Calinescu et al., 2019a), such as: the ability to generate and influence development and economic growth, based on a creative foundation (assets); use of ideas or original ideas in accounting and financial work; the ability to productively solve complex problems, generate new discoveries, and resolutely implement them into practice. By the way, such elements of creativity can be used both when conducting an audit and, directly, in the process of business interaction regarding the development of the tourism industry in Ukraine.

Regarding the practical aspects of the implementation of the specified directions of interaction, the Chairman of the World Economic Forum, Saadia Zahidi, in January 2023 emphasized that the existing high inflation, low growth rates, high debt and a high degree of fragmentation reduce the incentives for investments necessary to restore growth and raise the standard of living and development of renewable potential (Flasseur, 2023).

The World Bank expects global GDP to grow by 1.7% in 2023, the slowest pace since the 2009 and 2020 recessions since 1993.

Definitions of what constitutes a recession vary around the world, but usually include the prospect of a shrinking economy, possibly with high inflation in the direction of "stagflation" (Calinescu et al., 2018).

Inflationary expectations have pronounced regional differences. According to research by the World Economic Forum, the share of those expecting high inflation in 2023 ranged from just 5% in China to 57% in Europe, where the impact of rising energy prices in 2022 has spread to worries about the economy as a whole.

The head of the Swiss National Bank, emphasizes that the fight against inflation and ensuring price stability are absolutely essential, as the current levels of price increases are too high (Revill, 2023).

However, based on the macroeconomic laws of consumption, it will be much more difficult to reduce global inflation, since companies will be more willing to accept the rise of prices and wages than their reduction.

In 2022, the US Federal Reserve raised its interest rate three times (Board of Governors of the Federal Reserve System, 2022). Financial analysts expect the rate to rise again from the current level of 1%. In turn, the IMF lowered its own growth forecast twice. It was first done in January 2022 due to omicron, then in April 2022 due to the hostilities in Ukraine and the implemented sanctions. The growth forecast fell from 4.9% to 3.6%. However, the concerns are not so much related to the change in the percentage of growth (in fact, 3.6% is also a significant increase), but more to the emergence of the risk of fragmentation of the economy and the formation of public and private trade blocs.

While inflation in Switzerland was low by international standards, it rose to 2.8% in 2022 from 2021, exceeding the SNB's price stability target of 2% annually. For comparison, inflation in Ukraine in December 2022 increased by 26.6% compared to December 2021. (State Statistics Service of Ukraine, 2023).

Financial analysts expect both weak demand and high borrowing costs to put pressure on companies, which in turn will force multinationals to cut costs, from cutting operating costs to laying off workers. However, supply chain disruptions are also not expected to affect business activity in 2023, and the cost of living crisis may also be nearing its peak, with a majority (68%) expecting it to ease by the end of 2023.

Over the past three decades, the world economy has grown approximately three times. But today there is a new danger of trade fragmentation and the disintegration of the world into rival blocs.

Today, the world is facing many pressing issues, from the global economic downturn, geopolitical tensions and climate change to the cost of living crisis and high levels of debt.

After all, economic integration has helped billions of people become better educated, wealthier, and healthier. According to the head of the IMF, after the end of the Cold War, the size of the world economy increased approximately three times, and almost 1.5 billion people escaped from extreme poverty. These dividends of peace and cooperation should not be lost" (Georgieva, 2023).

The conduct of military operations on the territory of Ukraine in 2022 caused not only human suffering, but also massive disruptions in

financial, food and energy flows around the world. This can be deliberately used by some players in the financial market to obtain economic benefits at the expense of others.

Estimates of the cost of fragmentation vary widely, according to the IMF. The long-term costs of trade fragmentation alone could vary from 0.2% of global output in a limited fragmentation scenario to nearly 7% in a severe scenario, roughly equivalent to the combined annual output of Germany and Japan (Aiyar et al, 2023). Add to that the technological divide, and some countries could be dealing with losses of up to 12% of GDP. According to the results of 2022, the Ministry of Economy of Ukraine estimates a drop in the GDP of Ukraine at the level of 30.4% (Ministry of Economy of Ukraine, 2023). According to Serhii Nikolaychuk, Deputy Chairman of the National Bank of Ukraine, it was the mass migration of 20% of Ukraine's population to Europe that became a significant factor in the fall in GDP in 2022 (Vinokurov, 2023a). For 2023, the National Bank of Ukraine forecasts GDP growth of 0.3% from 4% in the previous forecast (National Bank of Ukraine, 2023).

In addition to trade restrictions and barriers to technology diffusion, fragmentation can be felt through cross-cutting constraints—border migration, reduced capital flows, and a sharp decline in international cooperation—making the world even more prone to upheaval.

This will be especially difficult for those most affected by fragmentation. Lower-income consumers in advanced economies will lose access to cheaper imported goods. Small open market economies will suffer greatly due to their heavy reliance on open trade.

And emerging market and developing countries will no longer benefit from the spillover effects of technologies that have contributed to increased productivity and living standards. Instead of catching up with the income levels of developed economies, developing countries will fall further behind.

The confirmation of the spread of this state of the world economy is, in particular, the difficult situation with the balancing of the economy of Ukraine. In October 2022, as part of the RFI (Rapid financing instrument) program, Ukraine and the International Monetary Fund agreed on another loan - for \$1.3 billion. However, unfortunately, this does not solve the problem of releasing working capital from the Ukrainian

economy. We are talking about a more expensive loan, which will mostly be used to pay interest on previously received loan tranches and debt obligations. Thus, according to the Ministry of Finance of Ukraine, the country's budget deficit in 2022 amounted to 847.2 billion hryvnias (about \$22.94), which is 362.5% more than in the previous year - 2021 (Official website of the Ministry of Finance of Ukraine, 2023). The main reason for this was a 65% increase in expenses. In particular, due to military operations on the territory of Ukraine, military expenditures increased by 525%, and their ratio to total expenditures increased to 37.6% compared to the previous year (in 2021, this indicator was 8.5%). (Ministry of Finance of Ukraine, 2023).

After February 24, 2022, it is not realistic to count on the intensification of the investment climate, which Ukraine hoped for before that. In the conditions of military operations, tax revenues fell radically, and defense expenditures increased significantly. Despite this, on March 10, 2022, Ukraine terminated the previous program of cooperation with the IMF, without receiving about 700 million dollars. The fact is that it was impossible to fulfill previous agreements, for example, to reduce the budget deficit to 3.5% of GDP or to prepare for the privatization of state banks, and to receive the next tranches in war conditions (Vinokurov, 2023b).

Instead, the fund allocated \$1.4 billion in emergency credit to Ukraine without any conditions within the framework of the RFI (Rapid financing instrument) program. In addition to emergency financing, in 2022 the government of Ukraine held negotiations regarding the extension of the long-term credit program with the IMF. Although there is no clear prohibition in the IMF Charter to provide loans to countries where hostilities are taking place, as of March 2023, the IMF has denied Ukraine such a program.

However, the head of the IMF praised Ukraine's efforts to transform its own economy, which shrank by more than 30% in 2022 (Pavlysh, 2023). Based on the rate of growth of the budget deficit, the outstanding debt of the government of Ukraine in 2022 is 4.728 trillion hryvnias (\$128 billion), which is 52.4% more than in the previous year (Ministry of Finance of Ukraine, 2023). At the same time, the debt is growing within the country as well. In 2022, the outstanding domestic debt of the government amounted to 1.461 trillion hryvnias (\$39.58 billion), which is 31.5% more than the previous

year (Ministry of Finance of Ukraine, 2023). Thus, after the end of hostilities, Ukraine must return loans to the international community (the balance of SDRs received and returned by

Ukraine is shown in Figure 2), to which more loans will be added, which will be aimed at restoring the economy after the war period.

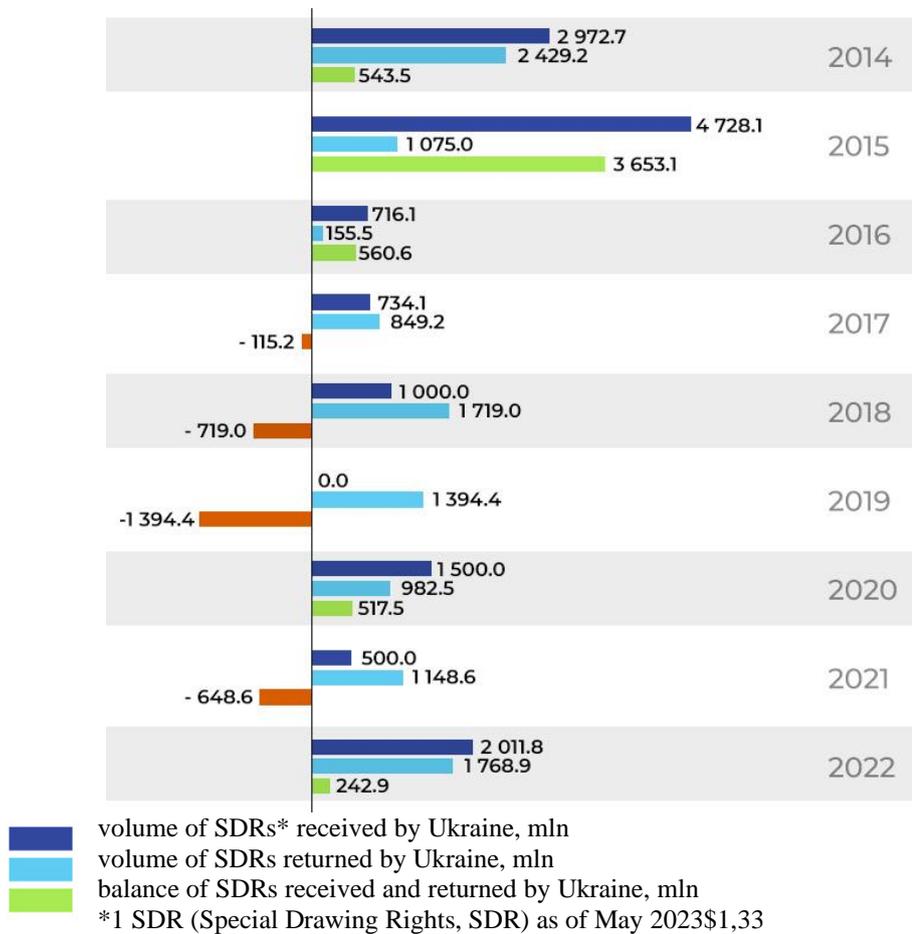


Figure 2. Ratio of cash tranches received and returned by Ukraine from the IMF, million SDRs (Gaspar et al, 2023)

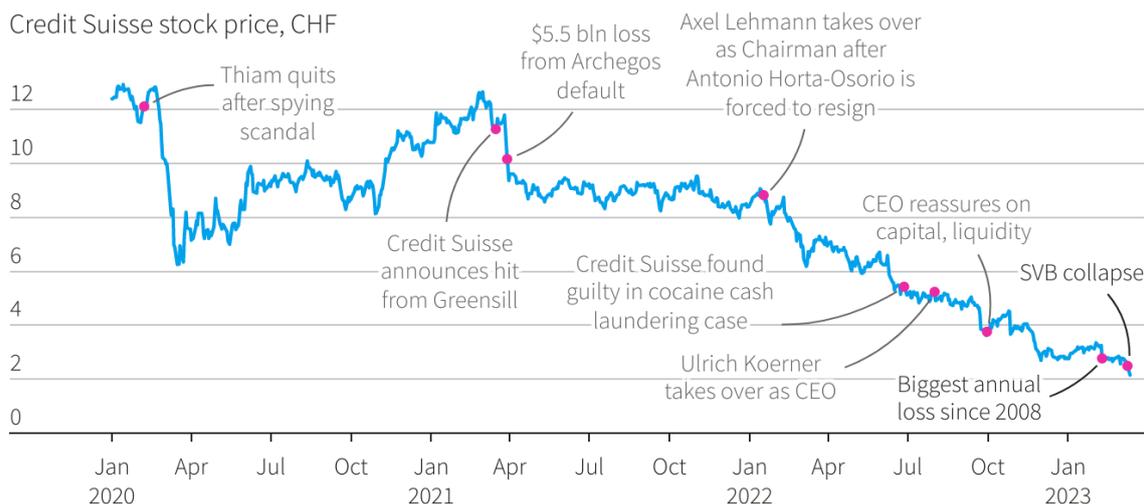
The beginning of 2023 has become very worrying for the financiers of the world. Several global banking institutions suddenly found themselves on the brink of bankruptcy. Inflation in the USA, according to the deputy head of the IMF G. Gopinath, has not yet been brought under control, and it is still too early for the Federal Reserve System to declare victory in the fight against rising prices (Smith, 2023).

In March 2023, Swiss financial regulator FINMA said it was looking to identify any potential contagion risks for the country's banks and insurers following the bankruptcies of Silicon Valley Bank (SIVB.O) and Signature Bank (SBNY.O). Shares in Swiss banks fell along with other banks around the world after US authorities guaranteed the deposits of two lenders, unsettled investors.

Shares of Credit Suisse (CSGN.S) hit new lows as the cost of insuring debt against default rose to an all-time high. Shares of Swiss rival UBS (UBSG.S) fell more than 7%. The regulator noted that its supervisory activities are focused on risk management of supervised institutions and work with various scenarios.

In another reflection of investor concern about Credit Suisse's outlook, the price of some of its bonds fell sharply, with some falling to record lows.

Struggling to recover from a string of scandals, Switzerland's second-largest bank has begun overhauling its business, cutting costs and jobs and creating a separate business for its investment bank under the CS First Boston brand.



Note: March 13, 2023 price as at 1300 GMT

**Figure 3.** Credit Suisse goes off track (Flasseur, 2023)

Germany's Bundesbank convened its crisis management team to assess the possible effects of SVB's collapse on the local market, despite the fact that no emergency action was foreseen in Europe.

Europe's STOXX (SX7P) banking index fell 5.8% and was on track for its biggest two-day drop since March 2022. Shares of Germany's Commerzbank (CBKG.DE) fell 12.7% (Illien, 2023). The Bank of England previously facilitated the private sale of HSBC's (HSBA.L) UK unit SVB to protect deposits without taxpayer support.

A survey of global risk experts conducted by the World Economic Forum in 2023 showed that environmental problems dominate the ranking of the main risks that the planet will face in the next decade. Therefore, the issues of preserving the existing natural potential, its careful and effective use even against the background of general socio-economic and directly financial losses, become significant for the development of the world tourism industry.

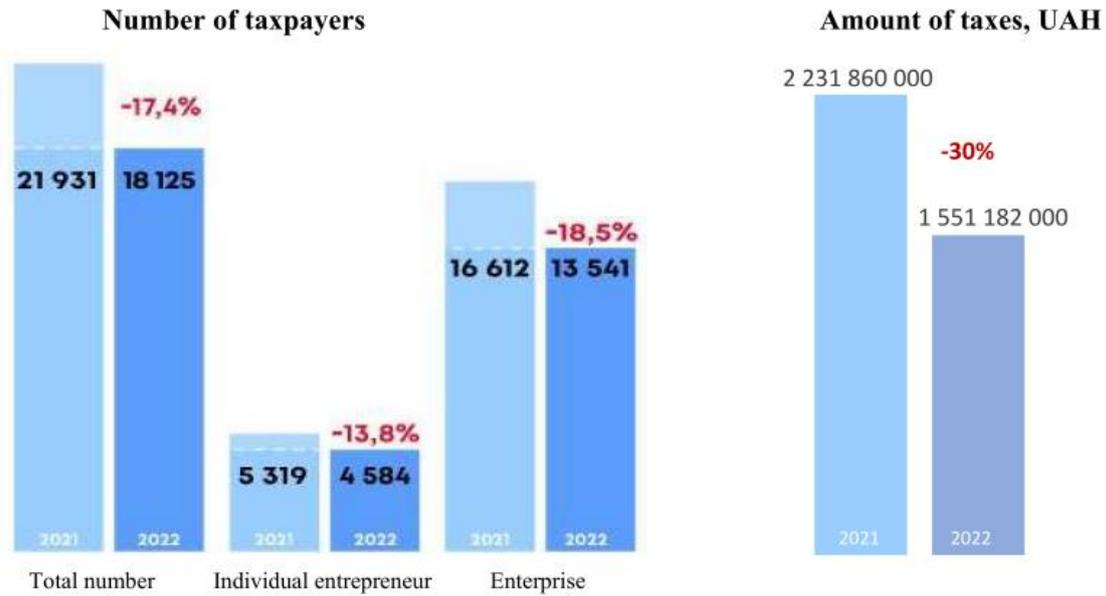
One of the priority directions for the recovery of Ukraine's economic potential is the country's return to the world tourism market through the fruitful interaction of national business with global tourism clusters. During military operations on the territory of Ukraine, its tourism industry suffers incalculable losses. As a result,

the economy of the country, which does not receive the income previously generated by this sphere of economic activity, suffers losses. Due to the war, revenues transferred to the state budget from the activities of the tourism industry in 2022 compared to 2021 decreased by 31% (fig. 4). The largest contribution in 2022 was made by hotels, paying UAH 898 million, but this amount alone is 30% less than last year's figure (1 billion 288 million UAH).

A negative trend was recorded in the activities of tourist operators, whose income from their activities was only 167 million 858 thousand UAH, a year ago the state budget received 259 million 5 thousand UAH from them. A similar situation is observed among travel agencies, which in 2022 paid taxes in the amount of UAH 204,795,000, which is 27% less than in 2021 (UAH 265,000).

In the regional context, in 2022, it should be noted the growth of tax revenues from the Lviv region (273 million hryvnias compared to 215 million hryvnias in 2021). Also, receipts increased in Kyiv region (164 million UAH, compared to almost 125 million UAH in 2021) and in Ivano-Frankivsk region (159 million UAH, compared to almost 131 million in 2021).

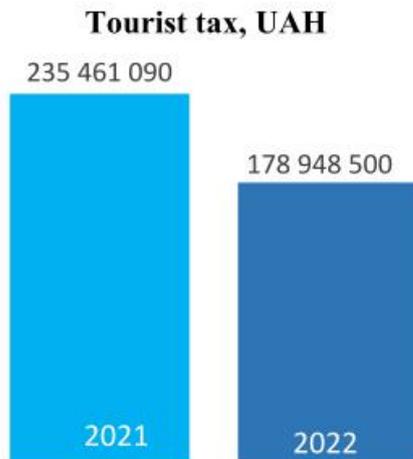
At the same time, a large reduction in tax revenues is observed in the city of Kyiv itself (by 46%), as well as in Odesa (by 58%).



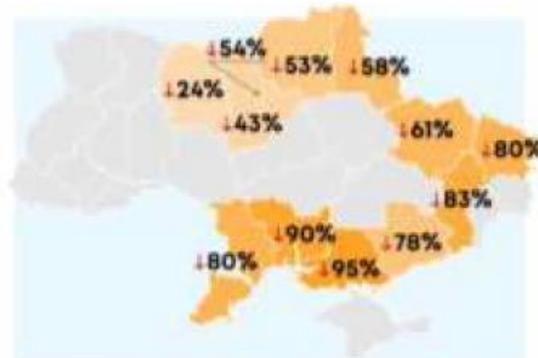
**Figure 4.** The number of economic entities in tourism industry of Ukraine and the taxes paid by them in 2022. (State Agency of Tourism Development, 2023)

Taking into account the dynamics of tax revenues for 2022, it should be noted that after all, the industry is functioning, albeit with significant

losses. This fact is confirmed by the data on the receipts of the tourist tax (fig. 5).



**Reduction of the tourist tax in 2022, %**



**Figure 5.** Dynamics of tourist tax payments (Tourist tax, 2023)

During the past year, the amount of the tourist tax decreased by almost a quarter (24%) compared to 2021 and amounted to UAH 178 million 948 thousand. In 2021, this indicator was at the level of 235 million 461 thousand UAH.)

tourist tax amounted to 83%), Luhansk region (tourist tax decreased by 80%).

Negative dynamics were demonstrated by 14 regions of Ukraine. Usually, these are regions located on the contact line, in the zone of active hostilities. In the worst case, these are temporarily occupied territories. Among the regions that suffered the greatest losses were Kherson region (recorded reduction of tourist tax was 95%), Mykolaiv region (tourist tax volume decreased by 90%), Donetsk region (losses from

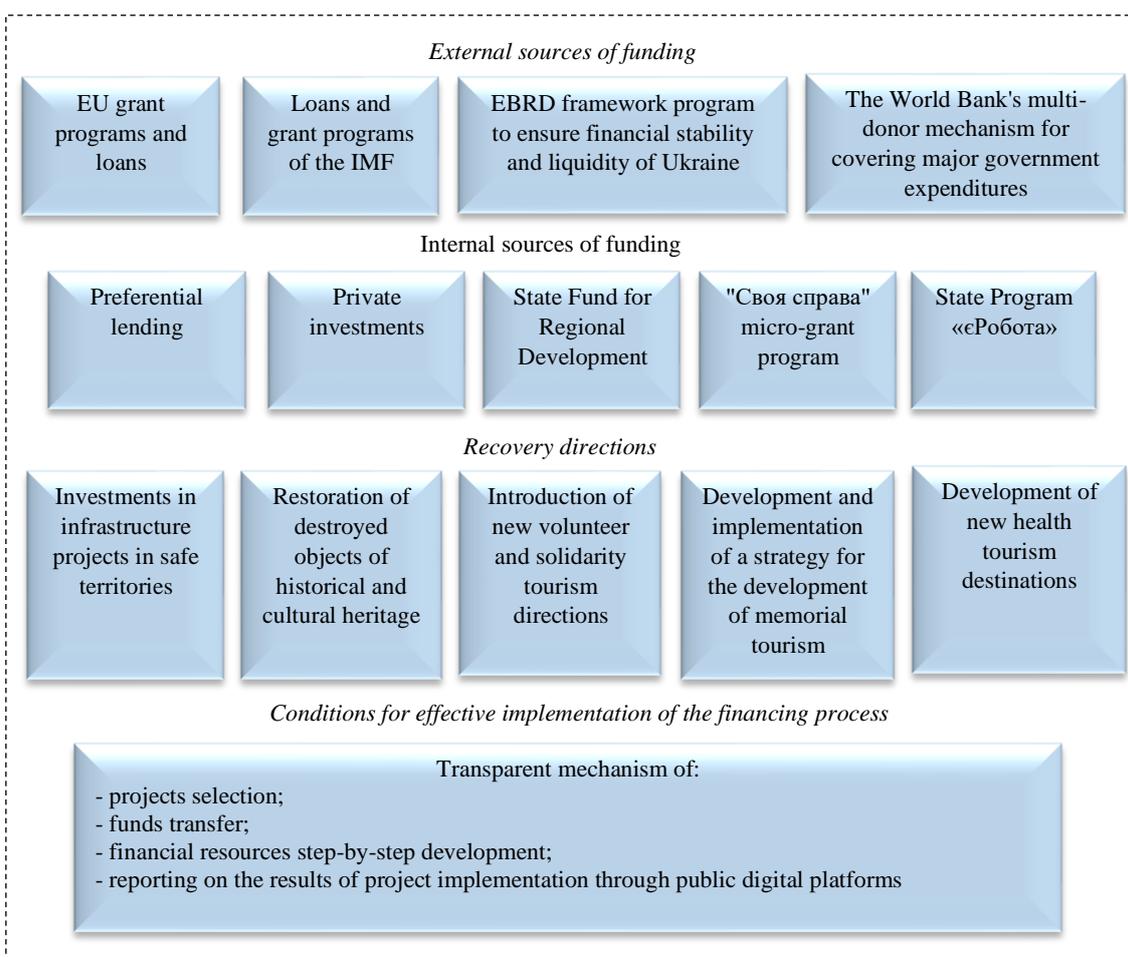
In addition, a significant reduction in the tourist tax was observed in Odesa (80%), Zaporizhia (78%), Kharkiv (61%), Sumy (58%), Chernihiv (53%), Kyiv (43%) and Zhytomyr (24%) regions. This problem did not escape the city of Kyiv, where in 2022 the share of the reduction was 54% of the amount of the tourist tax in 2021. Also, negative dynamics were recorded in the Dnipropetrovsk and Rivne regions, where the amount of revenue from the tourist tax decreased by 15%.

In some regions, the reverse trend is also observed - an increase in the amount of tourist tax. This is explained by the processes of internal population migration from dangerous areas to regions that are considered relatively safe. The Lviv region collected the largest amount of tourist tax in 2022 (41 million 430 thousand UAH), the increase in the amount of the tax occurred by 79% compared to 2021. Among those who received the largest amounts of tourist tax, there were also: Transcarpathia - 19 million 471 thousand UAH, Ivano-Frankivsk region - 17 million 956 thousand UAH. and Cherkasy Region - 2 million 555 thousand UAH.

But it should be noted that not only the tourism industry of Ukraine suffered losses. Losses are borne by the global tourism industry. This is due to the closure of the airspace over Ukraine, due

to which almost all world travel companies, whose flight routes passed through the airspace of Ukraine, are suffering significant losses. According to preliminary estimates, prolonged military actions on the territory of Ukraine may in the future generate significant amounts of losses to the industry at the global level in the amount of more than 14 billion dollars. USA (UN News, 2022).

A review of various sources regarding the general state of the global financial and credit system, as well as expert assessments regarding the expediency and prospects of restoring the national tourism industry (Bordun et al, 2022) makes it possible to propose a framework accounting and financial mechanism for the restoration of the tourism industry of Ukraine (fig. 6).



**Figure 6.** Accounting and financial mechanism of recovery of the tourist industry of Ukraine.

The presented framework mechanism should rely on the latest technologies for quick, efficient and transparent dissemination of information, as well as reporting to the public on the processes of obtaining, developing financial resources and

publicizing the results of the implementation of investment projects. The financial complex of levers of the proposed mechanism will consist in providing with accumulated monetary funds digital tools of transparent directions for the

recovery of the tourism industry, and the accounting complex - in the correct reflection of the accounting and tax process and audit leveling of possible financial and economic risks.

Ukraine already has successful digital platforms for supporting the activities of financial institutions ("Privat24", "Monobank"), which have no analogues in the world. The only and unique application in the world is the "Дія" application, which allows you to receive a whole range of government services and perform various business operations for legal entities and individuals without contacting the relevant state or financial institutions. It is through this application in the "Diia-business" section that representatives of small and micro-businesses can apply for grants under the government programs "єРобота" and "Своя справа". Funding under these government programs is very often received by representatives of the service sector.

### Conclusions

Modern transformational processes in the economy of the state have led to changes in the ways of interaction of business entities and the financial and accounting mechanisms of their functioning. The main emphasis is on compliance with principles, transparency, orientation to the interest of joint interaction, effectiveness and efficiency, accountability and strategic vision of individual and general development. The practical implementation of these principles can be implemented through monitoring, including through the forgotten element of financial control - public (or popular) control. So, on the one hand, public control, on the one hand, is one of the important indicators of the development of civil society and democracy in the country, and on the other hand, it is a guarantee of the effective operation of all spheres of the national economy and levels of hierarchical management, including as a result of the transformation of the financial and accounting mechanism for the implementation of financial control. Attention should be paid to public control also because it is a tool for independent assessment of the state of fulfillment of economic and social tasks facing not only the country, but also business, as well as an indicator of the development of society and an indicator of the development of a democratic, legal and social state. In general, the public is interested in the implementation of appropriate control, because budgets, including territorial, regional, on the one hand, are formed mainly due to taxes borne by citizens. And, on the other hand, the population

is a consumer of public goods and services financed from budgets. Taking into account this aspect, the territorial public (and not only) is interested in the effective and targeted use of its budget funds, the provision of general public services, the development of certain businesses in their territories, taking into account the fact that currently the tourist tax, according to the Tax and Budget Codes of Ukraine, comes to local budgets, which means that territorial communities have the right to determine how and in what way to further develop their tourism business. Therefore, it is quite logical that the main component of the financial and accounting mechanism should be not only financial control and its element - public control, which is implemented through the involvement of citizens in evaluating the development and interaction of businesses in certain territories. However, in Ukraine, public control does not have appropriate regulatory support, which makes it impossible to carry out effective public budget control, as well as the implementation of its results. It is the independence and objectivity of public financial control that should become the guarantee of the need for its implementation at all levels of management in order to increase not only the efficient and rational spending of budget funds, but also to regulate local self-government, business development and its interaction within individual territories.

Therefore, the need to transform the accounting and financial mechanism today stems from the special need to place emphasis on the development and expansion of certain powers of individual elements, namely financial control. At the same time, each of the above types of financial, audit or public control is a separate direction of development, improvement and reform and is determined by the specifics of the tourism industry, the location of business entities, their interaction, the chosen methods and techniques of control.

As a result of the analysis, it can be noted that the beginning of 2023 has become very worrying for financiers of the world. Several global banking institutions suddenly found themselves on the brink of bankruptcy. The probability of a global financial recession, according to the forecasts of the world's leading economists, is becoming a reality in 2023-2024. However, the global pandemic of COVID-2019 gave a significant impetus to the development of remote work and digitalization of document flow, and the gas crisis prompted calls for energy savings. That is why the emergence of new threats of financial

recession can create new civilizational breakthroughs in sustainable development.

So, it is worth emphasizing that at the current stage of the development of the economy of Ukraine, in the conditions of the socio-economic crisis, the state must implement an effective policy in the field of providing the financial market with instruments of banking regulation and attracting new investment resources, guaranteeing investors the return of their own funds and stimulating entrepreneurial activity.

However, based on the application of any of the proposed types of control, it is possible to identify and establish the troubles that are occurring today in the development of the tourism industry, its neglect, lack of creative approaches, and financial violations, as well as contribute to increasing the responsibility of violators and ensure compensation for financial losses. High efficiency of financial control in Ukraine can be achieved only with appropriate coordination of activities of all controlling entities.

The presented investigation was based on accounting and financial trends that existed before the war and on the basis of facts recorded at the present time, however, in the conditions of the war and after it, such trends may not be preserved, because at the moment it is not possible to stabilize the situation regarding socio-economic development in the country and abroad.

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## Exploring benefits and models of blended learning technology in modern professional training

### Впровадження технології змішаного навчання в сучасну професійну підготовку фахівців

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#### Abstract

The article shows the main ways of applying the mixed learning technology in the modern professional training of specialists. The purpose of the article is to find out the main ways of applying the technology of mixed learning in the modern professional training of specialists. The methodological concept provides a categorical and component analysis of the technology of mixed learning in the modern professional training of specialists in the following dimensions: philosophical, psychological, cultural, socio-pedagogical. The following methodological approaches were used in the article: sociosystemic, informational, synergistic, interdisciplinary, axiological, cultural, structural and functional and subject-activity. In connection with the digital transformation of education, we will distinguish three main components of mixed learning that can be implemented in a higher education institution, that is, in its information and educational environment (traditional learning (face to face));

#### Анотація

У статті показано основні шляхи застосування технології змішаного навчання при сучасній професійній підготовці фахівців. Метою статті є з'ясувати основні шляхи застосування технології змішаного навчання в сучасній професійній підготовці фахівців. Методична концепція передбачає категоріально-компонентний аналіз технології змішаного навчання в сучасній професійній підготовці фахівців у таких вимірах: філософський, психологічний, культурний, соціально-педагогічний. У статті застосовувалися такі методологічні підходи: соціосистемний, інформаційний, синергетичний, міждисциплінарний, аксіологічний, культурологічний, структурно-функціональний та предметно-діяльнісний. У зв'язку з цифровою трансформацією освіти виокремимо три основні компоненти змішаного навчання, які можна реалізувати в закладі вищої освіти, тобто в його інформаційно-освітньому середовищі

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self-study learning; joint online - learning (online collaborative learning). The four basic models of mixed learning, which are discussed in the article, are the most popular (rotational model, flexible model, self-mixing model, virtual-enriched model).

**Keywords:** technology of blended learning, professional training of specialists, digital transformation of education, information and educational environment, basic models of blended learning.

## Introduction

The attention of personnel development specialists is increasingly focused on distance learning (e-learning), which is a way of organizing the learning process, which allows the transfer of knowledge at a distance without direct contact between the teacher and the student. This form opens up new opportunities for professional retraining and professional development. Obtaining a second higher education and, in principle, the organization of continuous education. This innovative format has a number of advantages. With distance learning, the student independently chooses a convenient time and place of study for him, determines a comfortable pace, selects a course or program that is interesting to him. However, such training has a number of disadvantages.

Critics of e-learning single out the lack of social contact with other study participants, the danger of misinterpretation of theoretical material, but the main thing is the need for a high level of self-education of the students. The search for more advanced methods of learning, using the advantages of e-learning and compensating for its shortcomings, led to the creation of mixed learning, combining distance format, face-to-face classes and self-training. Mixed learning is possible as a form of organization of the educational process, within which the traditional form is combined in equal proportion with distance learning, which involves the use of computer technologies and Internet resources to achieve the maximum efficiency of both forms of education. Blended learning allows you to take the best of online and offline formats and get rid of their shortcomings.

In connection with COVID-19, the whole world is under strict conditions of isolation of quarantine measures. Due to the spread of the coronavirus infection, quarantine has become a

(традиційне навчання (face to face); самостійне навчання (self-study learning); спільне онлайн-навчання (online collaborative learning). Найпопулярнішими є чотири базові моделі змішаного навчання, які розглянуто у статті (ротаційна модель, гнучка модель, модель самостійного змішування, віртуально-збагачена модель).

**Ключові слова:** технологія змішаного навчання, професійна підготовка фахівців, цифрова трансформація освіти, інформаційно-освітнє середовище, базові моделі змішаного навчання.

time of experimentation and innovation for higher education worldwide.

Institutions of higher education directed their activities to the needs of society and the individual to quality continuing education through the development of educational programs and forms of an education organization (distance, full-time, part-time, mixed, part-time, etc.). Digitization of the educational space directs effective sequential learning and the formation of digital (information and communication) competence and promotes professional awareness, changing the traditional education system, which allows students of higher education to increase virtual mobility (Tsiuniak & Rozlutska, 2021).

The application of mixed learning technology in the modern professional training of specialists provides a powerful potential for training in crises and forms the professional competencies of education seekers in the situation in which world education has found itself today, starting from 2020. It is possible to bring the results of educational activities closer to the standards of the European educational space and to achieve significant changes in the educational process of institutions of higher education through constant innovations and changes in the professional activity of a teacher with his competitive orientation to the digitalization of the educational process, constant innovation in the educational space of a higher education institution and his ability to implement personal creative potential. The application of blended learning cannot be considered a mechanical process that promotes the transfer of educational interaction, and its selective types, to the online environment. For such an educational process, it is necessary to change the role of the institution of higher education and to promote the innovative

transformation of teachers in the educational process of the institution, to change the culture of the educational institution and interpersonal relations between the participants of the educational process (Shevchuk, 2023).

Today, blended learning around the world is the main impetus for the innovative development of higher education. The main goal of higher education institutions is to find ways to update the educational process and to be ready to organize the educational process in the event of an indefinite suspension of classroom work and a full transition to distance education. There is a need to transition to Internet technologies, which have accelerated the development of the information society, filling many aspects of our lives and overcoming geographical barriers. The educational Internet space with the help of Internet technologies makes it possible to make the educational process comprehensive and comprehensive. Therefore, one of the main ways to improve education is the organization of mixed education, which, in the presence of favorable conditions, combines distance education with face-to-face (Vyshkivska et al., 2022).

In connection with the digital transformation of education, the article highlights the main components of blended learning that can be implemented in a higher educational institution; blended learning models are shown; the factors of mixed learning in the educational process are characterized; the task of mixed learning technology in the modern professional training of specialists of higher educational institutions is summarized; the key features of the mixed learning technology in the modern professional training of specialists are clarified; aspects of the application of mixed learning technology in the modern professional training of specialists are highlighted; innovative models of blended learning are shown; the characteristic features of the mixed learning technology in the modern professional training of specialists are highlighted.

### Literature Review

The problem of the application of mixed learning technology in the modern professional training of specialists is a prominent object of research by scientists of the entire world educational space. Let's pay attention to studies that thoroughly or indirectly reveal the outlined problem.

O. Tsiuniak & H. Rozlutska (2021) considered the possibility of using blended learning in higher

education institutions during the quarantine and strict quarantine measures caused by the COVID-19 coronavirus infection when the whole world was in such isolation conditions and it became a problem for all participants in the educational process; revealed the meaning of the concept of "blended learning"; proved the significance and necessity for the educational field of blended learning, showed its innovativeness in the organization of the educational process in institutions of higher education; showed ways to transform the structure and content of education; emphasized the need to change the traditional roles of teachers and students of education. To implement training in institutions of higher education, the scientists showed the possibilities of combining online services with digital educational resources and emphasized the important aspects of blended learning, which makes it possible to distinguish between professional material to be studied in the classroom and that which will be presented in the informational and educational electronic environment.

K. Osadcha & V. Osadchy (2022) highlight the issue of improving foreign practices through mixed education in higher education. The authors emphasize the importance of blended learning, which is one of the most popular technologies today because it provides an opportunity to use the convenience and flexibility of distance technologies from any course and the advantages of traditional (auditory) learning. In the world's best institutions of higher education (Great Britain, the USA, Finland, Germany), the experience of mixed education is summarized, the foreign works of scientists from the leading countries of the world are analyzed, and progressive ideas of the introduction of mixed education in institutions of higher education are singled out for implementation in the educational process of institutions of higher education.

I. Puchkov (2017) considered the possibilities of introducing mixed learning into the educational process of higher education institutions, revealed his pedagogical experience of working at the university in teacher training; grouped the most essential features of blended learning; substantiated the structural content of the distance course: "Fundamentals of computer science with elements of programming"; analyzed the results of his scientific work, the effectiveness of which he proved using the methods of mathematical statistics.

S. Shevchuk (2023) proposed a method of using mixed learning in the professional training of

future specialists; the purpose, principles, essence, and models of blended learning through the competence approach are revealed. The author presents blended learning as a combination of forms of interaction between teaching staff and students of education (direct and indirect); as a process of increasing the efficiency and optimization of the educational process for those seeking higher education to best ensure the educational interests and needs of future specialists by transforming the educational process with the use of modern pedagogical approaches and the application of the possibilities of modern digital technologies.

L. Movchan & N. Komisarenko (2022) in the context of teaching in institutions of higher education defined the concept of "blended learning" based on foreign experience as an innovative organization of the educational process in institutions of higher education; the main elements of the mixed type of educational process are grouped; blended learning technologies are described; the expediency and relevance of the implementation of the innovative organization of the educational process in higher education institutions has been proven; models of blended learning depending on the purpose of teaching were investigated. It has been established that mixed learning determines the technological readiness of teachers, students of education and the educational institution, methodical preparation of all disciplines, organization of classroom classes, and, most importantly, independent work of students. The element of mixed learning – program complexes are considered.

T. Sobchenko (2021) researched the content of blended learning and showed its necessity in connection with the pandemic and the development of information and communication technologies throughout the world. The organization of the educational process has undergone significant corrections and updates, including the introduction of blended learning; the concept of "blended learning" was clarified and considered as a model, teaching system, method, mixture of learning strategies and methods, program, the form of learning, etc.; the tasks of mixed learning, which are set in institutions of higher education, are summarized. A. Tkachenko & T. Romanenko (2021) devoted their research to the problem of using technology of mixed education of students in higher education institutions. Scientists have found out that the methods, forms, content, and means of teaching the traditional acquisition of knowledge are becoming less and less relevant and need to

be improved and updated by the requirements of modern education; the need to use the technology of mixed learning in modern education, which has become the most relevant educational trend, has been established; the peculiarities of the organization of the educational process of students of higher education through the introduction of mixed learning technology are identified and substantiated, and the methodical approaches of using this technology to the design of the educational process are clarified.

B. Vyshkivska, O. Chemerys, A. Prus, & I. Kulyk (2022) showed the peculiarities of the educational process, the possibilities of its organization in institutions of higher education, the impossibility of working only in offline mode because education requires: learning in an electronic educational environment, the use of innovative forms of work with education seekers, development of information and communication competence in the teaching staff. The meaning of the concept of "mixed learning" is revealed, and the conditions of its influence on the effectiveness of the educational process are shown. Blended learning is presented as a didactic means of implementing the transition from a traditional educational model to an integrated model using electronic resources and environments; the role of blended learning in ensuring quality professional training of each student is clarified, because blended learning is characterized by: flexibility, adaptability, accessibility; the usual approach to education was revised, redistribution of educational space resources and the creation of a new educational paradigm were proposed.

The analysis of research allowed us to single out those questions that were considered by scientists regarding the problem of applying the technology of mixed learning in the modern professional training of specialists. We drew attention to the fact that scientists, on the basis of foreign experience, defined the concept of "blended learning", researched the content of blended learning and showed its necessity for the field of education; the possibilities of applying blended learning in institutions of higher education are considered, the issue of improving foreign practices through blended learning in higher education is outlined, the possibilities of introducing blended learning into the educational process are shown, the methodology of applying blended learning in the professional training of future specialists is proposed, and the conditions of its influence on the effectiveness of the educational process are shown. It has been found that despite a wide range of research areas

devoted to this problem, there is still no unanimity in science in understanding the solution to the problem of the application of blended learning technology in the modern professional training of specialists. Thus, the controversy surrounding the problem of the application of mixed learning technology in the modern professional training of specialists continues to this day. Therefore, we set the following tasks in the research: to show the necessity of using the technology of mixed learning, to highlight the characteristic features of the technology of mixed learning, its organizational forms in the modern professional training of specialists; reveal the three main components of blended learning that can be implemented in a higher education institution; characterize the basic models of blended learning, show the key features of blended learning technology, highlight the stages of blended learning technology.

**The aim of the study:** to find out the main ways of applying the technology of mixed learning in the modern professional training of specialists.

### Methodology

The following research methods were used for the research: theoretical: methods: study of psychological, philosophical-cultural, historical-pedagogical, sociological literature on the problem of studying the advantages of mixed learning technology in modern professional training of specialists; instructional instructions, documents of higher education, regulatory and legislative framework, methodical documents for improving professional education, methods of conceptual and comparative analysis; analysis of the theoretical foundations of research, summarization of data from literary sources, retrospective analysis, identification of socio-pedagogical problems, theoretical modeling of the experimental model of mixed learning technology in modern professional training of specialists, forecasting of research results – methods of structural and systemic analysis; generalization of the experience of using mixed learning technology in the modern professional training of specialists based on the study of the work of teachers of higher education institutions in order to substantiate the theoretical and methodological foundations of the professional training of future specialists; empirical: psychodiagnostic (psychological-pedagogical observation, conversations, method of solving problem situations, self-assessment analysis) with the aim of clarifying the results of scientific research activities of students when applying

mixed learning technology in modern professional education.

In connection with the expansion of the introduction of mixed learning technology in the modern professional training of specialists, the main goal of the study is the need to substantiate the theoretical and methodological foundations of the introduction of mixed learning technology in the modern professional training of specialists. The conceptual foundations of mixed learning technology in modern professional training of specialists need justification at the following levels of scientific research: methodological, theoretical, and methodical.

The research methods used by us were used to clarify the possibilities of qualitative application of mixed learning technology in modern professional training of specialists. For this purpose, the conceptual foundations of the blended learning technology based on the following levels of scientific research were identified: methodological, theoretical and methodical. In our study *the methodological concept* provides a categorical and component analysis of the technology of mixed learning in the modern professional training of specialists in the following dimensions:

- philosophical, the relationship between practical human activity and cognition is investigated based on social, biological, and spiritual factors, the study of the socio-pedagogical thesaurus of mixed learning technology in modern professional training of specialists, etc.;
- psychological, a psychological analysis of the structure of mixed learning technology is carried out in modern professional training of specialists, taking into account the individual and age characteristics of such future specialists;
- cultural, there is an analysis of the socio-pedagogical activity of mixed learning technology in the modern professional training of specialists, which is based on modern studies of civilization, informatization, and intercultural interaction;
- socio-pedagogical, includes goals, principles, content, forms, methods, results, etc., which are structural components of mixed learning technology in modern professional training of specialists, the basis of which is the organization of an information environment for individual and group training of education seekers.

The following methodological approaches were applied: socio-systemic, informational, synergistic, interdisciplinary, axiological, cultural, structural-functional, and subject-activity.

The theoretical concept is represented by the rationale the substantiation of the interrelationship of several models of blended learning technology in modern professional training of specialists serves as the theoretical basis for the design of professional training of specialists.

The theoretical aspect of the research consists of: scientific provisions of the theory of activity; concepts of the subject activity of a person in the process of his professional formation; theoretical foundations of training a future specialist.

The methodical concept of the research of mixed learning technology in the modern professional training of specialists involves the introduction of informational and methodical support of the educational process.

## Results and Discussion

The introduction into the system of higher education of mixed learning technology in the modern professional training of specialists is of great importance for the modernization of the educational sector and its integration into the European area of higher education. The term "blended learning" is synonymous with the terms "hybrid learning", "flexible learning", and "combined learning". To determine clear program learning results, during the modern professional training of specialists, the technology of mixed learning is a combination of remote, traditional educational, mobile technologies, and learning strategies. Scientists pay attention to the combination of formal and informal means of education. For example, there can be a discussion of theoretical educational material using video conferences, e-mail, the study of professional material using multimedia tools, and consultations via the Internet. When implementing the technology of mixed learning with modern professional training specialists, the combination of electronic technologies and traditional learning technologies (mobile, remote, computer) is of great importance, the use of which is a necessary condition for the effective implementation of blended learning (Shchyrbul et al., 2022).

In connection with the digital transformation of education, we will single out three main

components of blended learning that can be implemented in a higher education institution, that is, in its information and educational environment:

- traditional teaching (face-to-face), which takes place under the guidance of a teacher during traditional classes in the classroom;
- self-study learning includes independent work of students of higher education (work with online services, in cloud environments, laboratory, practical work, processing of educational materials);
- joint online learning (online collaborative learning), in which the work of teachers and students of education takes place online in the mode of synchronous interaction (holding of conferences, webinars, forums, etc.) (Kravchenko et al., 2022).

The four basic models of blended learning are the most popular:

- rotary model;
- flexible model;
- self-mixing model;
- virtual-enriched model (Polishchuk et al., 2022).

The choice and effectiveness of the basic model of blended learning in the educational process depend on the following factors:

- form of educational process organization (full-time/part-time);
- level of educational achievements of education seekers;
- the level of information and communication skills of future specialists;
- the content of the academic discipline is designed for blended learning;
- the sufficient number of hours for independent work;
- availability of the appropriate material and technical base of the institution of higher education for the possible implementation of mixed education (Tsiuniak & Rozlutska, 2021).

The task of mixed learning technology in modern professional training of specialists in higher education institutions is summarized:

- expansion of opportunities of the educational process for education seekers due to flexibility and accessibility;
- increasing the motivation of education seekers in the process of applying mixed

- learning technology in the modern professional training of specialists for independence, reflection, self-analysis, educational and cognitive activity, social activity, and the formation of responsibility;
- taking into account individual educational needs, pace, and rhythm of educational material in the modern professional training of specialists through the technology of mixed learning;
  - changing the role of the teacher by moving from the presentation of the material to interactive interaction with the student;
  - formation of digital competence;
  - increasing the effectiveness of education during the application of mixed learning technology and learning results in general;
  - autonomy and pedagogical freedom of the teacher regarding the choice of educational platforms, services, and presentation of material during the application of mixed learning technology in the modern professional training of specialists;
  - the possibility of controlling one's activity during the application of mixed-learning technology;
  - personalization of the educational process during the professional training of specialists (definition of learning goals and ways to achieve them, taking into account interests, abilities, and educational needs; moreover, the teacher is an assistant) learning independence (Sobchenko, 2021).

Under the condition of the correct application of mixed learning technology and a clear ratio of independent work and classroom classes in the modern professional training of specialists, the quality of education will increase. It should be taken into account that the technology of mixed learning puts forward increased requirements for the level of competence of teachers in modern professional training of specialists, shifting the emphasis of organizing the educational process traditionally to working with databases, providing individualized assistance to students in modern professional training, adding online components to traditional training (online discussions, blogs, surveys, discussion of problematic issues, completion of tasks in electronic form, etc.) to solving problems of motivation and stimulation. The technology of mixed learning makes it possible to receive differentiated instructions for specialists with modern professional training and to work in a convenient mode and pace (Vyshkivska et al., 2022).

We will find out the key features of the technology of mixed learning in the modern professional training of specialists.

- first, the constant use of information and communication technologies during the application of mixed learning technology to find educational material and obtain new knowledge in the modern professional training of specialists, i.e. ICT is the main component of the education process;
- secondly, the integration of various methodological approaches, tools, methods, methods, presentation of new material in modern professional training of specialists, types of educational activities of education seekers, in particular, part of the information is divided into group work, part – into the independent study (Stratan-Artyshkova et al., 2022).

– During the application of mixed learning technology in the modern professional training of specialists, there is a noticeable transformation in the role of the teacher, which is manifested in three aspects:

- 1) the teacher in the modern professional training of specialists acts as a consultant during the application of the technology of mixed learning, choosing for students an individual trajectory of the educational process;
- 2) the teacher acts as a mentor during the application of mixed-learning technology;
- 3) the teacher performs the role of a facilitator of the educational process, namely, during the application of the technology of mixed learning in the modern professional training of specialists, he ensures the active involvement of students of education in team cooperation, promotes feedback communication between the teacher and students of education, organizes independent educational activities of students, promotes the use of electronic resources, ICT means (Kuchai et al., 2022).

The technology of mixed learning provides an opportunity for the student of education to learn using ICT tools according to an individual schedule, which is the most convenient for the future with modern professional training of specialists, carries out the process of consulting the student of education, directs him to the independent acquisition of skills, knowledge, abilities for carrying out practical activities, i.e. during the application of mixed learning technology in the modern professional training of

specialists, education seekers are assisted in the independent acquisition of professional, subject, social (soft skills) competences when applying innovative didactic support for the organization of their educational trajectory. During the application of mixed learning technology in the modern professional training of specialists, the teacher selects innovative methods, forms, and means of education that provide the opportunity for students to self-study, self-organization, responsible attitude to learning, independent planning time for education, etc. (Bershadska et al., 2020).

One of the main elements of the application of mixed learning technology in the modern professional training of specialists is the feedback between the teacher and the student. When studying each academic discipline in the classroom, in online mode, during the independent work of students, the teacher ensures the implementation of feedback to discuss problematic issues, providing consultations, monitoring and correcting knowledge, conducting briefings, etc. Such work can be done using testing platforms, and ICT tools by students of online education (Tkachenko & Romanenko, 2021).

Computer network technologies have become a promising platform for developing electronic learning (e-learning), distance learning, and mobile learning (m-learning), which are effectively used for all forms of the educational process. The development of e-learning gave an opportunity for a new direction in education – blended learning, which is very important in the modern professional training of specialists. Therefore, we are observing the rapid development of the creation of e-learning software complexes of various orientations, including the organization of learning – LMS (Learning Management Systems), content delivery systems, which embody in their content: the development of educational courses, communication, administration, assessment of knowledge.

Nowadays, we see the movement of distance learning in a new direction:

1. E-learning has become more important, compared to distance learning.
2. Distance learning has moved to the workplace.
3. Blended learning is widely used in education.

4. E-learning began to focus more on the acquisition of professional knowledge and less on the course of lectures.
5. E-learning has become adapted to different levels of education.
6. Traditional educational technologies have taken a back seat.

The technology of mixed learning in the modern professional training of specialists consists of three stages:

- distance learning,
- in the form of day classes for mastering practical aspects,
- monitoring.

The basis for the selection of models of the application of mixed learning technology in the modern professional training of specialists is the degree of independence of students, the ratio of electronic and traditional forms of education when choosing course sections for independent study and mastering the educational material (Movchan & Komisarenko, 2022).

Different tools, primarily cloud technologies, are used in the implementation of blended learning. Currently, video materials play an important role in the application of mixed-learning technology in the modern professional training of specialists. The use of video in MOOS (massive open online course) limits (10 minutes) the duration of the educational video fragment.

Let's list the options for working with video:

- video creation (Screenr, Screencast-o-matic, Camtasia),
- video editing (YouTube),
- creation of animation
- creating a video with comments,
- creating a video by adding sound to the presentation,
- creating a video with testing,
- creating a video lesson (Guo, 2013).

The combination of distance learning and classroom learning provides good conditions for teaching flexibility, access to learning, and improvement of methods. In addition, the application of mixed learning technology in modern professional training of specialists can include asynchronous and synchronous online learning, provide innovative means of Internet learning, and a wide selection of modern technologies (Movchan & Komisarenko, 2022).

So, let's highlight the characteristic features of the technology of mixed learning in the modern professional training of specialists:

- the teacher's ability to pay more attention to students, not only during the classroom session. It is possible to consult education seekers via chat, e-mail, and forum;
- development of one's schedule of extracurricular activities. Students get an education at a time convenient for them: the materials are compactly arranged and are available on the distance educational resource and are presented online. Education seekers work with materials at a convenient pace, do not waste time looking for the necessary material elsewhere, but work in an electronic library, Internet cafe, or at home;
- the teacher's observation of the student's task completion time, his progress, and the capabilities of each student, which makes it possible to draw up a schedule of students' classes, approach each one individually and conduct consultations at a convenient time for each student. Students, with this approach, can eliminate debts, control their academic performance, improve educational results;
- the teacher changes and supplements educational materials, and improves his competence, which contributes to updating the learning process every year and makes it different from the previous one;
- every student is an individual and needs an individual approach, therefore, the educational process for every student of education is different.

With mixed learning, since it allows the inclusion of audio or video lectures, graphics, etc., all the peculiarities of the students of education are taken into account (Rashevskaya, 2010).

Modern education has developed innovative material for the use of mixed learning technology in the modern professional training of specialists in the educational process of a higher educational institution. One of the main directions of improving the professional training of future specialists is the development and application of distance courses, and their preparation for the use of information technologies (Puchkov, 2017).

The technology of mixed learning in the modern professional training of specialists does not become a completely online education that takes place in front of a computer constantly and does not have traditional classes. With the technology of mixed learning in the modern professional

training of specialists, the elements of online and personal training work together, to create a diverse base of education seekers, and not duplicate the content of the course in different formats (Panapto, 2019).

A combination of learning environments can:

- expand opportunities and educational space for attracting different lecturers, use, and training of innovative technologies;
- to promote support for communication, monitoring, and feedback from education seekers, application of own assessment system;
- to increase the availability of resources and saturation of information for those seeking education. More use of interactive educational methods to learn the material and develop creative projects;
- involvement of students in partnership work through cooperation during classes;
- motivation for education seekers and their interest in the future profession.

The technology of mixed learning in the modern professional training of specialists can be used for supporting learning in large and small groups, learning in person between the teacher and students, independent, distance, autonomous learning, communication between the teacher and groups of students, or individual students, between the students themselves. With the technology of mixed learning, with modern professional training of specialists, it is possible to "mix" time, for example, standard classes with video classes; venue, for example, a traditional excursion versus a "virtual" one using the Internet, websites; interesting people, for example, video communication with visiting scientists in this field; equipment and activities such as the classroom or online surveys. In general, the technology of mixed learning in the modern professional training of specialists has several advantages for those seeking education and is much more effective than the traditional (Edera R&D, 2019). When applying the technology of mixed learning in the modern professional training of specialists, teachers focus on a creative approach, communication, and the formation of the worldview of education seekers; a combination of teaching methods, independent work with support from the teacher (Peresunko & Smolnikova, 2022).

There are various organizational forms of mixed learning technology in modern professional training of specialists.

*Innovative models are distinguished*

The "Rotation" model, which is based on the principle of rotation. During the educational process, the student's learning time is divided between classroom learning and individual electronic learning. When learning in the classroom, the educational process takes place together with a teacher who provides remote support for electronic learning. This model has the following varieties:

- the rotation model with the presence of "online stations" (training of education seekers takes place in groups according to the prescribed rotation schedule, which is shared by all);
- the rotation model with laboratory works (the class, in which students work in the laboratory, is equipped with computer equipment for the possibility of using computer technologies);
- "flipped classroom" (students receive prepared educational material and instructions online for their independent processing; such classes are held with the active participation of students in educational activities);
- individual rotation model (students study according to individual rotation schedules).

The "Flex" model creates the conditions of e-learning for students to learn most of the material, the teacher helps students remotely, but if students have difficulties understanding complex issues, the teacher organizes classroom consultations with each individual or small groups of students. The model allows for substantial face-to-face support for learners.

The "Self-blend" model allows students to additionally study the material in online courses at their institutions of higher education and other educational institutions. This model divides the study time between the distance form of education and the attendance of classroom classes by the students of education. With this approach, students have the opportunity not to visit an educational institution every day. This is a model of the work of the entire educational institution, and not just a system of studying a course or a discipline (Dubinina, 2018).

**Conclusions**

The combination of distance learning and the classroom process creates conditions that contribute to the flexibility of teaching, increasing access to learning, and improving

methods and methods. In addition, the high-quality application of mixed learning technology in the modern professional training of specialists significantly improves the monitoring of the learning process, and the educational process, provides an opportunity to support students, and enables the automation of part of the teacher's work. Methodical approaches contribute to the interest of education seekers in the process of assimilation of material, training, and effective interaction between the personalization of training, and subjects of the educational process. In the article, the main ways of applying mixed learning technology are proposed for high-quality modern professional training of specialists. Three main components of mixed learning that should be implemented in the information and educational environment of a higher education institution are singled out (traditional learning (face-to-face); self-study learning; joint online learning (online collaborative learning). The article considers four basic models of blended learning, which are the most popular (rotational model, flexible model, model of self-mixing, and virtual-enriched model). When implementing blended learning technology, various tools are used, primarily cloud technologies, and video materials. The essence of innovative models is shown (model "Rotation", "Flex" model, "Self-blend" models). The choice and effectiveness of the basic model of blended learning in the educational process depend on the factors analyzed in the article (the form of organization of the educational process (full-time/part-time), the level of educational achievements of the students, the level information and communication skills of future specialists, the content of the educational discipline is designed for mixed learning, a sufficient number of hours for independent work, the availability of the appropriate material and technical base of the higher education institution for the possible implementation of the technology of mixed learning). Peculiarities and organizational forms are singled out, and the stages of mixed-learning technology are shown.

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## Implementation of AI in international law and administrative law (in the context of human rights protection)

### Впровадження штучного інтелекту у міжнародне та адміністративне право (в контексті захисту прав людини)

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#### Abstract

The purpose of the article is to analyze the possibility of introducing artificial intelligence into the rules of international and administrative law in the context of ensuring human rights, in particular through the activities of public administration bodies and the consideration of administrative cases. Research results. The article outlines the problems of the international legal definition of artificial intelligence using the examples of resolutions of the United Nations, the Council of Europe, the Code of Ethics of transnational corporations and legal instruments of individual States. Practical meaning. The authors analyze the state of international legal regulation and the possibility of using AI, provided that human rights are respected at the national level, including in the activities of bodies authorized to consider cases of administrative offenses, implementation of electronic justice in administrative and procedural court practice. Value/originality. Scientific proposals regarding the relevance of the international legal definition of the concept of artificial intelligence, the problems of observing human rights in its application both at the international and national level, in particular, the use of its opportunities in justice for the purpose of more effective consideration of cases, and at the same time reducing the burden on judicial systems are formulated, ability to conduct legal proceedings using AI is analyzed.

#### Анотація

Метою статті є аналіз можливості впровадження штучного інтелекту в норми міжнародного права та адміністративного права в контексті забезпечення прав людини, зокрема через діяльність органів публічної адміністрації та розгляд адміністративних справ. Результати досліджень. У статті окреслені проблеми міжнародно-правового визначення штучного інтелекту на прикладах резолюцій Організації Об'єднаних Націй, резолюцій Ради Європи, Етичного кодексу транснаціональних корпорацій і нормативних актах окремих держав світу. Практичне значення. Автори здійснюють аналіз стану міжнародно-правового регулювання та можливості використання штучного інтелекту за умови дотримання прав людини на національному рівні, в т.ч. у діяльності органів, уповноважених розглядати справи про адміністративні правопорушення, реалізації електронного судочинства в адміністративно-процесуальній судовій практиці. Цінність/оригінальність. Сформульовано наукові пропозиції щодо актуальності міжнародно-правового визначення поняття штучного інтелекту, проблем дотримання прав людини при застосуванні штучного інтелекту, як на міжнародному так і на національному рівні, зокрема використання можливостей технології у правосудді з метою більш ефективного розгляду справ, та водночас зменшення навантаження на судові системи, аналізуються можливості здійснення

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**Keywords:** international law, human rights, administrative law, artificial intelligence, court procedures, justice.

## Introduction

Artificial intelligence is a step towards the growth of Internet technologies, which allows automating processes used to be executed by a person using algorithms that largely mimic his (her) thinking. It is clear that the process of AI full-scale implementation in all spheres is complex and must be justified and governed by relevant regulations. However, the facts of artificial intelligence application in both private and public legal relations (State authorities, justice) already exist, and they mostly have a positive influence on such relations, because the approach thoroughly expands the very possibilities of the latest technologies, providing greater accuracy, objectivity, taking into account certain features when forming a decision or result. At the same time, the analysis of the initiatives by international organizations of individual States indicates that the international community is aware of possible risks of a legal nature, so some countries are trying to examine the possibilities of using such technologies.

Nowadays, the use of modern achievements in the cybernetic sphere has two main problems, which are based on: 1) technologies that are useful, but such opportunities are unknown to mankind; it is difficult to outline the nature of their use; 2) technologies requiring high technological and legal development of the State, which automatically excludes other, less developed countries from its use or increases the risks of violations in various areas of national and international law.

Thus, the legal regulation of Internet technologies, including artificial intelligence, is at the stage of its active establishment, in the process of creating unified legal standards of behavior, which determines the relevance of the proposed study.

The problems of the AI development largely depend on the specific directions of the cybernetic technologies' evolution, but there is a question of ensuring balance between the interests of civilization, the latest technologies and preservation of human values: political, economic, legal, cultural and religious ones.

судочинства з використанням штучного інтелекту.

**Ключові слова:** міжнародне право, права людини, адміністративне право, штучний інтелект, судові процедури, правосуддя.

The use of artificial intelligence and other Internet technologies is explored within the areas of international and national law (administrative) and judiciary. The aim of our Article is to analyze the state of international legal regulation and the possibility of using AI in the activities of bodies authorized to consider cases of administrative offenses, the implementation of electronic justice in administrative and procedural judicial practice.

To reach the purpose of the research, we set the following tasks:

- 1) to study the use of artificial intelligence in the international legal practice in the context of human rights protection;
- 2) to investigate the approaches to the definition of artificial intelligence at the international and national level;
- 3) to examine the ways of application of artificial intelligence in administrative justice;
- 4) to learn the examples of the AI technology introduction in international and national (administrative) legal acts.

## Literature Review

The first studies of the legal aspects of artificial intelligence appeared in the 20th century, in the Thesis by Anne von der Lieth Gardner "An Artificial Intelligence Approach to Legal Reasoning" (Gardner, 1987). In the same year, the first International Conference devoted to the problems of artificial intelligence was held, which prompted the creation in 1991 of the International Association of Artificial Intelligence and Law and the first publication on the topic "Artificial Intelligence and Law".

As noted by John Markoff (Markoff, 2016), the era of technological progress (1950s) and designing of personal computers (1970s) became the starting point for the emergence of artificial intelligence. Complete computerization and the world of "big data" have actually become what determines our development today. The author also talks about the fact that today is the turning point in the global development of informatics,

programming, robotics, neurobiology, etc., after which the world awaits a machine that replaces or surpasses a person in certain qualities.

There are many discussions regarding the interpretation of the very concept of "artificial intelligence". On the one hand, it is interpreted very abstractly as: the ability of the system to autonomously select the best solution to the problem from the set of variants (Yefremov, 2008); comparison of people's abilities and qualifications with available vacancies (Herweijer & Waughray, 2018); the ability of an automated system or computer program to perform human functions, making optimal decisions based on the analysis of external factors and taking into account the life experience of mankind (Horbenko & Meleshkevych, 2016); the ability to solve complex tasks; ability to learn, generalize and analogies (Machusky, 2020); the possibility of interaction with the world through communication, perception and the admission into consciousness of perceptions (Yefremov, 2008).

On the other hand, there are many more specific definitions and interpretations, according to which artificial intelligence is: a robot or a program that can replace a person in any activity (Varenko, 2013); a section of informatics that deals with the formalization of tasks resembling the job performed by a person (Andrew, 1983); science and technology capable of reproducing the thought processes of the human brain and enabling them to create and process various computer programs, as well as intelligent machines that could completely replace and simplify human work (Pelcher, 2018). As we can see, there is unified approach to this problem. Apparently, there is no exact answer to the question "What is AI?". Be that as it may, artificial intelligence today is a branch of science, the development of which is closely related to the solution of specific practical issues aimed at optimizing the processes.

### Methodology

Methodology is a set of approaches, ways, methods, techniques and procedures that are used in the process of scientific knowledge and practical activity to achieve a predetermined goal. To gain the purpose of our research the following methods were used.

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practical activity to achieve a predetermined goal. To gain the purpose of our research the following methods were used.

Monography approach helped to examine the works by foreign and Ukrainian scientists, who investigated the issues related to artificial intelligence.

Normative and dogmatic method was useful when studying legal instruments enshrining the definition of AI, legal regulation of the latter and its impact on possible human rights violations (resolutions of the United Nations, Council of Europe, the European Union, the Code of Ethics of transnational corporations and legal instruments of individual States, etc.).

Analytical method was helpful when examining the use of artificial intelligence in international legal practice and in the area of human rights protection.

With the help of logical method, the approaches to the designation of the term "Artificial Intelligence" at the international and national level were investigated.

Analyses and systematization method made it possible to consider the application of artificial intelligence in administrative justice.

Legal and predictive method was applied to explore the credibility of application of artificial intelligence in administrative justice.

The method of generalization was applied to make proposals for the introduction of artificial intelligence into justice with the aim of more effective consideration of cases, and at the same time – reducing the burden on judicial systems.

### Results and Discussion

#### Use of artificial intelligence in international law legal practice

In the process of using Internet technologies, an individual leaves a significant amount of information about himself (herself) in the network and can only superficially affect its editing or removal, making it vulnerable from the standpoint of observing the rights and freedoms of a person and citizen. Numerical services store on their servers' data that allows accurate identification of a person, his (her) interests, lifestyle, preferences and circle of close friends. Already today this information is used to prepare personalized advertising that we receive every

day. The problem of ensuring the AI legitimate use in this aspect is that the technology is capable of “adapting” to the human personality, copy his (her) most common traits, misleading others, which creates a wide margin for possible abuses and violations.

In order to more accurately illustrate the specificity of the problem, we can provide, as an example, well-known Internet services that process photo images, simultaneously uploading information about family ties, origin of those who have been registered. This effect is achieved by using various mathematical algorithms (Zuiderveen Borgesius, 2020). Without questioning the legality and usefulness of such services, nevertheless, we can conclude that the level of development of such technologies can be used with certain abuses.

It should be noted that there are still no guaranteed secure data warehouses that cannot be hacked. Cases of merging personal data from a well-known social network are a confirmation of this. However, along with the threats of violations in the protection of personal data, the breach of ethical norms is no less important, for example, because of the ability of technology to simulate the behavior of images of both dead and alive. Body movements, facial expressions, as well as the possible (but not used) ability to reproduce the language of the depicted are evidence of how far technologies have advanced in improving virtual space and reality. Such “living” portraits look quite convincing; allow concluding about human personality, character and behavior. While this technology is useful and interesting, the information provided to the sites is excessive, communicated is communicated to an undetermined audience and involves unauthorized persons without any consent of the owner. For example, computer models are successfully used in cinema, when video content uses simulated artificial intelligence personalities are used in video content. In the USA, this is seen from the perspective of the need to protect intellectual property rights. In particular, in 1985 the specific act was adopted in California (USA), which protects the rights of famous people heirs from the commercial use of the images of the deceased (Kulinich, 2011). Computer models are not considered as individuals, but they are able to help in the formation of public opinion, because famous person from the past speaks to the audience, although not of his (her) own free will.

On 16 February, 2017, the European Parliament adopted Resolution 2015/2103(INL) on Civil Law Rules on Robotics with recommendations to

the Commission (European Parliament, 2017), which, according to Horodyskyi (2017), laid the foundations for the understanding of robotics and artificial intelligence and became, despite its advisory nature, the basis for the introduction of subsequent international standards. The Resolution provided for the introduction of civil liability for damage caused by robotics and artificial intelligence to agents, i.e. natural persons who use such technologies. This legal act also refers to the introduction of legal grounds for the AI use, establishing special common European system for the registration of these schemes, the assignment of individual registration numbers allowing the device and its owners to be reliably identified, and the terms of compensation for damages; creating special robotics control agency is envisaged, the problems of human dependence on technical examples are covered, including the problems of robotic human organism.

The discussion of the possibility of recognition of the computer program the author of the work and the comparison of human intelligence with artificial one is one of the most interesting projects of a legal nature in the world. For example, back in 2016, Japan began the process of developing regulations on copyright protection of creative products designed by artificial intelligence, while Australia and the United States recognize copyright exclusively for humans.

According to the Resolution 2015/2103(INL) (European Parliament, 2017), responsibility for the damage caused cannot be assigned to robots (including artificial intelligence used by robotics), but only to the person, who is a manufacturer, operator, owner or user. In order to establish legal liability, it is necessary to prove the guilt of a person who could foresee and prevent the occurrence of such damage. In this regard, it is proposed to introduce a mandatory system of insurance against the occurrence of negative consequences and harm.

Besides, in 2018, the CEPEJ European Ethical Charter on the use of artificial intelligence (AI) in judicial systems and their environment (hereinafter – the Ethical Charter) (European Commission for the Efficiency of Justice, 2018) was adopted, which is important for determining the place of Artificial Intelligence in the European judiciary. In fact, this act was the first step towards promoting the AI use in the area of justice.

The efforts of international organizations to legally consolidate relations related to the use of artificial intelligence have been supported by a number of leading States aware of the prospects of such regulation nowadays and in the future. In fact, we are observing the traditional process of supplementing international and national law with the rules, which have become in demand by time and technology with their progressive practical use.

For example, Telychko, Rekun and Chabanenko (2020) draw attention to the legal experience of various States of the world: South Korea (“Korea’s Artificial Intelligence Robot Development Law” (2005), “Robot Ethics Charter” (2007) and “Legal regulation of autonomous systems in South Korea” (2012); the USA: (Road map for US Robotics, 2011, 2016 and the National Robotics Initiative, 2011, 2016); Japan (Guidelines for the Safe Use of New Generation Robots, “Japan’s Economic Revitalization Plan”, “New Robot Strategy”. Japan’s Robot Strategy: Overview, Strategy, Action Plan” (New Robot Strategy; Japan’s Robot Strategy: Vision, Strategy, Action Plan, 2015); China: (Guidelines on Promoting the Development of Industrial Robots, 2014 and the Global State Development Program “Made in China 2025, 2015”; Estonia: (Robot Courier Act (2017)); Germany: (Act on the use of highly automated vehicles (2017)). Microsoft, in cooperation with the specialists from the University of Science and Technology of China, are trying to endow robotics with human abilities (Wehner 2021).

#### **Definition of artificial intelligence. Artificial intelligence from the human rights perspective at the international and national level**

Considering the need for such legal regulation, its main drawback remains the uncertainty of the State’s attitude to artificial intelligence, which is typical of the entire Internet industry, where technology significantly ahead of regulation of political, legal, religious, and ethical aspects. That is why we still have any established international legal standard and legal AI definition. In addition, the existence of different approaches in national legal systems, as evidenced by the above examples, sometimes diametrically opposed, testify to the scale and specificity of the problem, especially in the era of globalization.

For example, the Organization for Economic Co-operation and Development (hereinafter –

OECD) in the Recommendation of the Council on Artificial Intelligence (OECD, 2019) indicates that AI system is a machine-based system, which can make predictions, recommendations or decisions affecting the real world or virtual environment for a certain set of human-defined purposes. AI systems are designed with different levels of autonomy.

Within the framework of national law, the most vivid definition of artificial intelligence is presented in the USA legislation, where a series of traits defining the concept of artificial intelligence is formulated, which demonstrate levels of human and cybernetic interaction where artificial intelligence is able to independently search for ways to solve tasks, act autonomously towards a person and at least be trained (Congress, 2017).

Legal regulation of artificial intelligence, according to Burov (2019), can lie in: a) positioning robots with artificial intelligence only as objects of social relations. According to this approach, work with AI is perceived only as a possible help in social relations, where the actors are physical and legal entities; b) understanding robots with artificial intelligence as individual actors of legal relations. Under this approach, robots with artificial intelligence is perceived as separate subjects of social relations, with the ability to relatively independently and to a sufficient extent realize and evaluate the meaning of their actions and the actions of other persons; c) positioning of robots with artificial intelligence as individual subjects of legal relations and possible objects thereof. Undoubtedly, the indicated directions of development of artificial intelligence are still more futuristic, especially in the approach to robots as separate actors of legal relations, since this mean a certain equating of artificial intelligence to the intelligence of the person. This, in turn, gives rise to a number of problematic ethical and legal issues, particularly in the area of human rights, as it is currently difficult to predict how the legal regulation of the consequences of the use of artificial intelligence and the protection of human rights in all its manifestations will correlate in the future. At the same time, the obvious benefits of technology and its continuous development will require the necessary legal steps the part of the States.

Today, the CIS countries face the need to interact with the digital world as well. Despite some delays in the deployment of the latest information technology, there are successes in certain digitalization sectors in Ukraine, considering the

scale of work that has been carried out over the past decades. Ukraine actively participates in the international discussion on the development of artificial intelligence, gradually integrates into the digital (virtual) space, increasing the number and variety of digital services provided in the state every year. In particular, the Ukrainian Concept for the development of artificial intelligence was taken into account by international organizations, and it began to be studied by the Council of Europe and UNESCO. The implementation of one of the digital initiatives became the online portal of public services “Diya” – an access point to all public services that the state provides to citizens and businesses. The launch of this application has become a significant step forward the digitalization of personal documents; in particular, Ukraine has become the first state in the world where a citizen’s digital passport is legally and practically implemented.

This, in turn, increased the efficiency and convenience of document circulation, reduced the bureaucracy of the system of providing administrative services, and eliminated the possibility of a corruption component in the “citizen and State” legal relationship. Along with this, the directions of digitalization of the state are recognized: updating of legislation, streamlining the work of State registers, court activities, as well as digitalization in the fields of health care, education, transport, etc.

A certain shift in this process was the accession of Ukraine to the OECD Guidelines in 2019 and signing the OECD-Ukraine Memorandum of Understanding (OCDE, 2014), in which, among other things, it is noted that Ukraine joined the Recommendation of the OECD Council on artificial intelligence.

It is important that in 2020 the Decree of the Cabinet of Ministers of Ukraine “On Approval of the Concept of Development of Artificial Intelligence in Ukraine”, which defines artificial intelligence, was passed (Resolution of the Cabinet of Ministers of Ukraine No. 1556-r, 2020). The possibility of applying it only if the rule of law, fundamental rights and freedoms of man and citizen, democratic values, personal data protection, privacy is respected, as well as an initiative to develop its own Code of Ethics for artificial intelligence is separately established. Among the identified problems are: complexity of verifying compliance of artificial intelligence systems to legislation and existing ethical principles; insufficient level of information security and data protection in the information

and telecommunication systems of State agencies due to the outdated system for identifying and assessing information threats; lack of artificial intelligence technologies application in judicial practice, etc.

The priority directions for the implementation of the Concept are: Ukraine’s involvement in a significant segment of the world technology market artificial intelligence technologies and leading positions in international rankings (AI Readiness Index by Oxford Insights, AI Index by Stanford University, etc.); introduction of artificial intelligence technologies in the area of education, economy, public administration, legal regulation and ethics, cyber security, defense and the field of justice; increasing the level of public safety through the use of artificial intelligence technologies when devising measures for the re-socialization of convicted persons and the risk of repeated offences. It should be noted that a number of European States, as well as Ukraine, are already using artificial intelligence mechanisms in the legal sphere. It is the system for recording administrative offenses in the area of road safety in automatic mode, which records such violations of the Traffic Rules as: exceeding specified speed limits for vehicles and violations of traffic rules and stopping on the route lane.

Offenses are recorded by automatic recording complexes – stationary technical means (control devices) enabling automatic detection and photography or video recording of events with the signs of administrative offenses in the area of road safety (Articles 14-2, 33, 122 of the Code of Administrative Offenses (Law of Ukraine No. 2747-IV, 2005). Vehicle license plate recognition is a manifestation of the artificial intelligence functions, which is used here.

Not only States, international organizations, but also large private companies are trying to implement the principles of dealing with artificial intelligence. A technical leader – Bosch has developed a special Code of Ethics for artificial intelligence (Bosch, 2020), which enshrines the main principles: artificial intelligence should be safe, reliable, and understandable and remain under human control. Bosch, as a multinational corporation, plans to manufacture all products using artificial intelligence by 2025 and believes that it is the engine of global progress. The company offers three approaches when a person retains control over artificial intelligence: 1) artificial intelligence plays a purely supportive role; 2) smart system autonomously makes decisions that an individual can cancel at any time, for

example, during autonomous driving, in the parking assistance system; 3) used for applications in braking systems. Bosch joined the High-Level Expert Group on Artificial Intelligence –the agency appointed by the European Commission to investigate the ethical aspects of artificial intelligence. The Code of Ethics emphasizes that its actions are based on the values enshrined in the Universal Declaration of Human Rights.

This is significant progress for transnational corporations, since, in fact, not only rights but also obligations are emerging in dealing with artificial intelligence. To date, there are no international legal instruments establishing strict obligations for big business to respect, for example, human rights. International organizations, led by the UN, are limited only to documents of a recommendatory nature, and the introduction of such a Code of Ethics is an undoubted step into the future.

As noted above, individual States are already developing their own legal framework and defining the principles of dealing with artificial intelligence, which will be the basis for their domestic and foreign policy. For example, Androshchuk (2020) notes that Poland has implemented policy for the development of artificial intelligence for 2019 – 2027 in accordance with new world trends and the international obligations undertaken by the State.

According to the Memorandum on the AI development, a plan is being developed for the comprehensive implementation of artificial intelligence in almost all spheres of State functioning in order to support Poland’s desire to maintain and improve its place among the world’s leading countries. The main goal of Poland is to join the narrow group of 20 – 25% of countries establishing artificial intelligence. By 2025, more than 700 companies using artificial intelligence shall be created in the country; to achieve this in 2023, Poland will require investments to develop artificial intelligence in the amount of approximately 9.5 billion zlotys. The proposed example illustrates the prospects for the development of artificial intelligence and its strategic importance for any country in the world.

It is worth noting that in legal regulation of artificial intelligence development special attention is paid to the connection of artificial intelligence with ensuring the observance of human rights. The concept of their recognition and protection has undergone a long civilization

evolution, and AI can become the element capable of harming it. Therefore, international and national acts dedicated to this issue, although they do not have established conclusions, constantly emphasize the need to respect human rights.

In light of the observance of human rights, the use of artificial intelligence can be compared with the introduction of an “electronic person”, which is associated with the establishment of legal capacity of artificial intelligence, which is divided into: legal capacity of artificial intelligence based on the model of a natural person; legal personality of artificial intelligence based on the model of legal entity.

AI intervenes in the sphere of human relations, in private life, capable of influencing the fate of a person and humanity. According to the authors, there are possible risks associated with the observance of basic human rights in the area of artificial intelligence application, and may manifest themselves in military affairs, due to the violation of fundamental human rights, for example, the right to life, freedom of speech and assembly; non-discrimination; effective legal assistance; in ensuring a fair trial, including in the exercise of procedural rights. Artificial intelligence is able to hold a wide range of information about the person, which affects the so-called “electronic sovereignty of the person” including his (her) rights and obligations. This forms the concept of the “electronic person”; the process of creating such a person has already begun through the formation of the personality of artificial intelligence and a number of norms aimed at establishing interaction and protecting human rights from the consequences of the AI activities (Coeckelbergh, 2010).

As for the sphere of the judiciary, it is quite conservative among public institutions and resistant to dynamic social changes. However, the introduction of AI systems is already taking place in some States (USA, China, Japan), and electronic justice systems are successfully operating in a number of countries around the world. **Recommendation Rec (2001)3of the Committee of Ministers to member states on the delivery of court and other legal services to the citizen through the use of new technologies** (Committee of Ministers, 2001), among other things, indicates the need to enable commencement of proceedings by electronic means, as well to carry out further procedural actions in electronic work flow production.

## Application of artificial intelligence in administrative justice

With regard to administrative justice in Ukraine, currently participants in the administrative process have the opportunity to submit electronic evidence and use electronic digital signature. The legislator also enshrines provisions according to which documents (in particular, procedural documents, written and electronic evidence, etc.) can be submitted to the court and proceedings can be conducted by the parties to the case in electronic form using an electronic system. It is interesting to answer the following question: whether the introduction of electronic court proceedings would enhance the protection of rights, freedoms, interests, make justice effective, transparent, accessible and, ultimately, more economical? This is especially relevant in the context of administrative proceedings, where one of the parties to a legal dispute is an individual, who is opposed to the system of public power through the subject of power.

The issues related to the use of artificial intelligence technologies are the provision of an electronic court and availability of legal proceedings (for example, administrative one or consideration of cases on administrative offenses) with the possibility of using a virtual judge (Slingo, 2020).

The leader in the AI use in justice remains the USA, which applies technology mainly in civil and criminal cases. The Stanford Computational Policy Lab has developed the algorithm assisting judges when choosing a preventive measure: custody or bail. China is also one of the first to implement AI systems in the judiciary. Since 2017, there has been an online court in the form of a mobile application of the Chinese We Chat program. There is a video chat instead of a courtroom and an avatar in place of a judge, which is controlled by artificial intelligence. The Hangzhou court became the first digital court; the PRC Government further established similar courts in Beijing and Guangzhou. Courts have already considered about 119,000 cases. Such courts are authorized to consider disputes in the area of copyright, economic disputes on the Internet, etc.

European Ethical Charter on the Use of Artificial Intelligence in Judicial Systems and their environment (European Commission for the Efficiency of Justice, 2018) formulates 5 basic principles for the use of technologies grounded on artificial intelligence in judicial systems, namely: 1) the principle of respect for

fundamental rights (i.e. compliance with the principle of the rule of law); 2) the principle of non-discrimination; 3) the principle of quality and safety (requirement for proper and high-quality training process and functioning of artificial intelligence technology in the area of justice); 4) the principle of transparency, impartiality and justice; 5) the principle “under the control of the user” (the AI user shall have an assured level of autonomy in the use and application of its functions with the aim of the most effective implementation of his (her) procedural rights). The listed principles cover the functional aspects of the use of the so-called “predictive justice”.

The analysis of national legislation in this area allows us to conclude that the Concept of AI Development in Ukraine (Resolution of the Cabinet of Ministers of Ukraine No. 1556-r, 2020), provides one of the directions of implementation of artificial intelligence in justice “...adjudication of cases of minor complexity (by mutual agreement of the parties) based on the results of the analysis carried out using artificial intelligence technologies, the state of compliance with the legislation and judicial practice”. According to Par. 20, Part 1, Article 4 of the Code of Administrative Offenses of Ukraine (Law of Ukraine No. 2747-IV, 2005), administrative case of minor complexity (minor case) is the case, in which the nature of the disputed legal relationship, the subject of the evidence and the composition of the participants, etc., do not require preparatory proceedings and (or) court sessions for full and comprehensive establishment of its circumstances; the list of such administrative cases is enshrined in Art. 6 of this Code.

However, clarification is needed on what the legislator sees in the adjudication by artificial intelligence – decision-making by the so-called virtual judge or, after all, assistance of artificial intelligence technology to the judge in making decisions in this category of cases? Article 6 of the European Convention on the Protection of Human Rights and Fundamental Freedoms (Council of Europe, 1950) enshrines the right to review cases by an independent and impartial court. However, this article and the comments here to do not explicitly prohibit the AI application, that is, indicate that justice is administered only by a human judge.

Practices of the European Court of Human Rights in the light of the violation of Article 6 of the Convention due to the use of artificial intelligence in decision-making are not yet

available. National law details the norm of the Convention in the Constitution of Ukraine. Emphasizing the need for additional regulation at the national level, we would like to note that according to Art. 127 of the Constitution of Ukraine (Law No. 254k/96-VR, 1996), justice shall be administered by judges. In cases determined by law, justice shall be administered involving jurors. Similar legal view is enshrined in Art. 92 of the Basic Law for the Federal Republic of Germany (Federal Ministry of Justice, 1949). Therefore, there is currently no possibility to administer justice to another actor than the judge; however, nothing prevents optimizing his (her) and court's work by involving artificial intelligence. Therefore, the second option is the help of artificial intelligence for more effective, fast, and less prolonged (protracted) consideration of certain categories of cases, which will contribute to achieving more accurate processing of information on the case and avoiding errors in justice. In particular, the Concept of the Development of Artificial Intelligence in Ukraine (Resolution of the Cabinet of Ministers of Ukraine No. 1556-r, 2020) mentions the possibility of considering cases of minor complexity with the use of artificial intelligence, i.e. it is possible to use such a system that will be able to independently summarize and analyze legislation, judicial practice, and, accordingly, help the judge to make a fair and legal decision. In this case, AI can be a peculiar part of the administrative process.

Regarding possible risks, these include determining the likelihood of acceptance of a mistaken judicial decision, which would violate the right to a fair trial and may affect certain procedural rights of the participants to the proceedings.

### **Credibility of international recognition of artificial intelligence standards of human behavior**

Recommendation CM/Rec (2020)1 of the Committee of Ministers to member States on the human rights impacts of algorithmic systems (Committee of Ministers, 2020), defines the main areas of human rights protection in connection with the introduction of algorithmic systems, because this concept is related to artificial intelligence (which is the set of mathematical processes and algorithms). Based on the above Recommendation, we can say that artificial intelligence is the result of mathematical calculations combined with the activity of algorithmic systems in real time. The imitation of

human features offered to it is only a background to facilitate interaction with the user. In this case, we are talking about the application of the same algorithmic systems, only with a higher degree of autonomy, and yet will remove his comparison with human personality. In our opinion, such an approach, at the current stage of development of the mentioned technology, allows us to outline the limits of legal regulation of this problem, will be more in line with the existing technical and legal realities and can be successfully modernized in the future to meet new legal challenges.

Considering the above, it should be noted that the adoption of the Concept of Artificial Intelligence Development in Ukraine is not enough, as it does not yet provide for radical systemic changes, including in the national law, and is of a somewhat declarative nature.

In this regard, a model for Ukraine is a systematic approach, which is often used by international organizations. In particular, the UN, ensuring the promotion of international standards for the protection of human rights, notes that their consolidation is possible not only through the adoption of separate legal and regulatory acts, concepts, strategies, as well as through political and economic decisions aimed at the appropriate regulation of various sectors and spheres of the State management. Among such powerful means, the UN highlights, for example, education and ensuring access to it. It is not only about the training of highly professional specialists, but also creating broad access to knowledge, which would allow successful application of the latest technologies and methods, and ultimately lead to the popularization of these achievements and their effective practical implementation. Thus, according to the authors, the State strategy for the development of artificial intelligence should cover all sectors of the economy and be widely supported in society through State policy, financing of own projects, educational and informational programs, adaptation of national law and its individual branches.

The basis for such legal relations in some cases is the recognition by artificial intelligence or digital person, as a kind of improved human being, standards of living human behavior (Brodbeck, 2015). At the same time, this approach is impractical, as it continues to replace the fundamental concepts of the living and non-living being. Making technology human, securing copyright for it or recognition of its moral and ethical obligations, rights and duties,

can probably destroy the system of values that had been formed for thousands of years and which is not applicable to an inanimate technology, even one endowed with the ability to think (Schmidt & Cohen, 2014). Even in this case, artificial intelligence should remain an object, not a subject of relations. For the most part, it is the application of the technology that is being investigated, not its hazard due to the existence or ability to think. Artificial intelligence, due to the lack of socio-cultural additions that form a person from birth and cannot be equated with him (her) and is unlikely to become a full-fledged actor of legal relations.

To date, the European Commission has proposed the first ever legal framework for artificial intelligence. The proposal provides a comprehensive package on artificial intelligence use and includes an updated Coordinated Plan on Artificial Intelligence 2021 Review (European Commission, 2021), ensuring respect for human rights and, among other things, creating the first legal framework for limiting artificial intelligence, in order to support the security of mankind.

Thus, artificial intelligence remains useful and interesting technology serving for the benefit of humanity and contributes to the strengthening of international and national legal order.

### Conclusions

Summarizing the above, we can note that artificial intelligence technology requires perfect legal regulation at the international and national levels. There is concern about the growing role of Internet technologies in human life and especially in the context of their impact on the individual's rights and freedoms. The concept of their protection was developed according to humanistic principles and hardly implies that at least part of them is attached to the machine. Accordingly, at the international level, within the UN and other organizations, global challenges related to the spread of artificial intelligence, its penetration into all spheres of human life and the importance that will be given to artificial intelligence in the near future.

Technologies created on the basis of artificial intelligence or having an algorithmic construction limited to human influence are also considered dangerous, especially during their use in law enforcement and judicial activities, since the conclusions reached by artificial intelligence carry a high risk of making a mistake and can negatively affect the awareness of human

dignity. Recognizing the revolutionary nature of technology in general, the international community is trying to establish a system of norms that would minimize possible risks and protect humanity.

In turn, the States must independently determine their attitude to the AI introduction. Each country adapts its national law in accordance with the conditions that are formed on the world arena, respecting the rights, freedoms and interests of citizens. Therefore, according to the authors, it would be expedient for Ukraine to hold public discussion (involving scientists from various areas) on the problems of implementing systems that use artificial intelligence, comprehensive analysis of the achievements of other countries in this direction, and identifying the limits, in which the AI application would become the most effective.

For the world community, the issue of introducing artificial intelligence in justice currently remains debatable and is accompanied by different approaches, from the active use of artificial intelligence in resolving various categories of disputes (China) to the establishment of criminal liability for the use of artificial intelligence algorithms for predicting court decisions (France). The national legislation does not provide for the possibility of replacing the judge with an algorithm, but it is possible to discuss the partial involvement of AI in judicial system.

Following the example of international organizations, it is advisable to develop recommendations, domestic standards for the AI application. Accelerate the development and adoption of the Code of Ethics for Artificial Intelligence (including, in Ukraine) and Develop a strategy to take advantage of this technology.

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## Innovative analytical and statistical technology as a corruption counteraction tool: conceptual analysis

### Інноваційні аналітико-статистичні технології як інструмент протидії корупції: концептуальний аналіз

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#### Abstract

The article is devoted to conceptual analysis of the problem of innovative analytical and statistical technologies implementations as a corruption prevention tool. This study defines corruption as the unlawful use of administrative resources for personal or group benefits, violating both formal and informal norms. It is stated that “corruption counteraction” means actions to prevent, combat, and mitigate corruption in society. The paper introduces several approaches for analytical and statistical technologies classification with grouping such technologies into high, middle and low technologies. Hi-tech is applied to the most advanced technologies based on scientific and technical progress and associated with automated technology. Automated analytical and statistical technologies are innovative in utilizing machine learning, deep learning, neural networks, NLP, network analysis, and real-time data analysis. The use of such technologies, which autonomously perform tasks previously reserved for humans, has shown potential for more effective corruption counteraction. So, “innovative analytical and statistical technology” is defined as a modern collection of methods and tools for data analysis, designed to identify complex dependencies and useful patterns in data, improving decision-making, and detecting anomalies.

**Keywords:** analytics, anti-corruption, statistics, integrity, quality control.

#### Анотація

Стаття присвячена концептуальному аналізу проблеми інноваційних аналітичних та статистичних технологій як інструменту запобігання корупції. Корупція визначається як незаконне використання адміністративних ресурсів на користь особистих або групових інтересів, що порушує як формальні, так і неформальні норми. В свою чергу, «протидія корупції» означає дії з попередження, боротьби та зменшення корупції в суспільстві. Аналітико-статистичні технології поділяються на високі, середні та низькі. Високі технології мають безпосереднє відношення до найбільш передових технологій, метою яких є автоматизації людської розумової праці. Вони є інноваційними завдяки використанню технологій машинного та глибокого навчання, нейронних мереж, NLP, аналізу мереж та аналізу даних в реальному часі. Технології автоматизації розумової діяльності знайшли своє місце в анти-корупційній діяльності. Тому «інноваційна аналітична та статистична технологія» визначається як сучасний набір методів та інструментів аналізу даних, спрямованих на виявлення складних залежностей (паттернів) в даних, вдосконалення процесу прийняття рішень та виявлення аномалій.

**Ключові слова:** аналітика, анти-корупція, статистика, порядність, контроль якості.

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## Introduction

Corruption is a global issue that affects the development of individual states as well as the entire global community as a whole. It creates an unhealthy environment for economic growth, undermines trust in state institutions, promotes illegal activity, and leads to inequality. Innovative analytical-statistical technologies as a corruption prevention tool are becoming especially relevant in today's world, where technology is gaining more and more significance. Thanks to the spread of digital technologies and broad access to big data, there is the possibility to counteract corruption more effectively. However, for the successful implementation and use of these technologies, it is necessary to clearly understand the basic concepts related to this issue. It becomes particularly important considering the complexity and multifaceted nature of corruption as a social phenomenon and the technologies used to prevent it. Without a proper understanding of how analytical-statistical technologies work and how they can be effectively applied for corruption prevention, there is a risk that they will not be used properly or will be used with insufficient effectiveness. Therefore, clarifying the content of the main concepts related to this problem becomes a vitally important task. The main goal of this article is to define key concepts related to innovative analytical-statistical technologies for preventing corruption and to clarify their content in the context of anti-corruption policy. To achieve the goal the following research questions are identified: 1) to define the essence of notion "corruption counteraction tool"; 2) to define the essence of notion "innovative analytical and statistical technology".

## Theoretical Framework or Literature Review

The theoretical foundation of this study rests on two main concepts: corruption counteraction tools and innovative analytical and statistical technology. The examination of corruption counteraction tools requires the exploration of various legal, economic, and sociological theories that have emerged in the battle against corrupt practices. This encompasses laws, regulations, ethical guidelines, and the general public stance on corruption. On the other hand, innovative analytical and statistical technologies represent the evolving methodologies that leverage modern data science, artificial intelligence, and computational algorithms to understand and address problems. In this framework, the synergy between these two

realms presents an interdisciplinary approach that offers a novel perspective on combating corruption through technological means.

The literature on the topic is vast and multifaceted, encompassing a range of disciplines, including law, economics, political science, and sociology. Scholars such as Rose-Ackerman and Palifka (2018), Sičáková-Beblavá & Beblavý (2007) have delved into the structural and behavioral aspects of corruption, outlining the legal frameworks and societal norms that are essential in combating this complex issue. Concurrently, there has been a burgeoning interest in the application of innovative analytical and statistical technologies in various fields. Research by Rogers (1983) in innovation essence, Hastie, Tibshirani, and Friedman (2016) in statistical learning, and developments in big data analytics by Wu et al. (2014) have set the stage for utilizing cutting-edge technology in the analysis and prediction of complex phenomena, including corruption. The intersection between these two areas forms the basis of our investigation, seeking to harness the insights from both theoretical underpinnings and empirical findings to create a comprehensive understanding of how corruption can be effectively countered through the use of modern technology.

## Methodology

The study is based on the close observation and analysis of various sources: official documentation, current legislation, and websites of public authorities and software producers have been reviewed meticulously, with an emphasis on those highlighting the prospects of using their products as anti-corruption tools. Additionally, the research incorporates insights from the field of modern information technologies, aligning them with the broader sphere of anti-corruption policy. The methodology includes an in-depth analysis of innovative analytical and statistical technologies that are utilized as tools for corruption monitoring and counteraction. Sources range from scholarly articles on the development and application of cutting-edge software (Rogel-Salazar, 2023) to legislative documents reflecting current regulations governing anti-corruption measures (Kikalishvili, 2021). Furthermore, the empirical basis for the analysis is drawn from diverse materials, such as media reports, successful real-world applications of various information technologies for automating anti-corruption

activities (Odilla, 2023), and documents from international non-governmental organizations (IDIA, 2019; Paul, Jolley, & Anthony, 2020). These components together form a robust and multifaceted foundation, offering a holistic view of how technology intersects with law and policy in the ongoing global effort to combat corruption. In synthesizing these various sources, this study aspires to provide a comprehensive understanding of the existing landscape and to identify new avenues for employing technology as an innovative and effective tool in the fight against corruption.

## Results and Discussion

Our analysis starts with abstract concepts, specifically concepts that do not have stable interpretations and have the same vague essence as the content of real politics – from the phenomenon of corruption. There are several reasons for this.

Firstly, the phenomenon of corruption is a multi-level and multi-dimensional phenomenon in the structure of social relations, which can be studied in various aspects – economic, cultural, sociological, and, of course, political (Rose-Ackerman & Palifka, 2018). That is why there are countless definitions of corruption, which are used depending on various methodological approaches, research objectives and tasks.

Secondly, corruption as a phenomenon is constantly adapting to changes in political, economic and social conditions, as well as to measures of counteraction and mitigation. “It is hard to give a clear definition of corruption because it manifests differently, encompasses the entire social sphere, economy, politics, culture, morality, law, psychology, power, management system, etc.” (Nevmerezhytskyi, 2008, p. 44).

It is generally recognized that public power is the source, nurturing environment and at the same time the main area of corruption spread in the state. The concept of “corruption” within the political sphere implies “bribery” and “corruption” of officials, and represents one of the forms of alienation of “public servants” from the general people (Marych, 2013).

In this regard, S. Zadorozhny draws attention to the fact that the essence of corruption is revealed only in the system “human – public power” by identifying and revealing five clusters of signs of corruption as 1) type of state-administrative relations; 2) legal deviation; 3) socio-political

institution; 4) a set of group behavior strategies and 5) a cultural-psychological phenomenon (Zadorozhnyi, 2016). Corrupt relations deform political, economic, social and other orders and arise, firstly, in the interactions of the private sector of the economy, citizens and their associations with public bodies, institutions and officials of public power, in connection with the processes of power regulation of various spheres of public life and the provision of public services. Corruption in a broad sense is a self-reproducing system of societal relations that contradicts societal norms and morals (Sičáková-Beblavá & Beblavý, 2007). It arises in connection with the unjust acquisition and/or redistribution of benefits by an individual vested with official powers, acting in the interest of persons included in this system by using the opportunities derived from these powers (Trepak, 2020, p. 52). M. Kikalishvili also points to the systemic nature of corruption as a “complex systemic phenomenon that impacts all layers of society and changes the psychological properties of participants in the societal process” (Kikalishvili, 2021, p. 104).

From a criminological perspective, corruption is defined as a “complex, deep-rooted, widespread, systemically dangerous phenomenon, caused by political, economic, socio-psychological, and other factors. It involves the unlawful use of public authority powers and opportunities to satisfy private interests, as well as instigation towards or facilitation of such usage. Essentially, corruption is a peculiar way of converting public authority powers and opportunities into unlawful benefits” (Trepak, 2020, p. 53).

O. Lozynskyi provides a classification of approaches to understanding the essence and content of corruption – economic, political, legal, historical, and psychological: “1) as an illegal mechanism of socio-economic exchange between representatives of power and business, which has certain value and economic expediency for them; 2) as an abuse (excess) of power, an official position, as an attribute of the functioning of power (its bureaucratic institutions) under various forms of political governance; 3) as an administrative violation, which entails a fine and temporary suspension from activity; 4) as a technology for rapid, unjust, illegal enrichment and strengthening of a small number of social groups - the oligarchy; 5) as covert unlawful activity of public (political, official) persons, caused by specific features of individual psychology and mass psychology” (Lozynskyi, 2021, pp. 28-33).

Corruption from the point of view of economics in the broad sense is defined as a socio-economic phenomenon, engendered by shadow economic relations between officials and interested parties in order to satisfy personal interests through the commercialization of public goods and values. In a narrow sense, corruption is defined as the process of commercialization by officials of their functional duties (Mazur, 2005, p. 36).

One of the directions of research on the phenomenon of corruption is the study of mechanisms for preventing and combating corruption in the state. This direction includes, for example, the research of S. Zadorozhnyi. The author systematized definitions of the corruption concept in five clusters: “as a special type of public administration relations; as a legal deviation; as a socio-political institution, a certain systemic phenomenon; as a cultural-psychological phenomenon; as a corresponding set of strategies for the behavior of various kinds of social groups seeking to gain illegal advantages and preferences through the use of power and official position” (Zadorozhnyi, 2016, pp. 70-72).

The most widely used definition of corruption (Transparency International, 2023) is “abuse of public power for private gain”. This is a very generalized definition, which allows any actions by officials aimed at gaining personal benefit to be considered as corruption. That is, their goal could be either giving unjustified advantages to third parties (for example, during tender procurement), or actions associated with satisfying, for example, feelings of revenge of a subordinate towards the boss. The latter example of official actions is better to classify as a fraud. Therefore, identifying corruption with fraud is understandable. According to the provisions of International Standard on Auditing (ISA) 240, “fraud is an intentional action by one or more individuals among management, those charged with governance, employees, or third parties, involving the use of deception to obtain an unjust or illegal advantage” (ISA, 2010). The international auditing firm “PricewaterhouseCoopers” interprets fraud as an “intentional deception with the aim of stealing money, property, or legitimate rights” (PWC, 2011). The Association of Certified Fraud Examiners (ACFE) defines fraud in organizations (or so-called “corporate” fraud) as “the use of one’s occupation for personal enrichment through the deliberate misuse or misapplication of the employing organization’s resources or assets” (ACFE, 2022, p. 6).

A separate category of fraud is financial resource fraud. Thus, S. Chornutskyi operates with the term “fraud in relation to state resources” and defines it as “intentionally committed violations of the law (violations committed for the purpose of obtaining personal benefit or the benefit of third parties), which led to harm as a result of the loss of state resources or their non-receipt” (Chornutskyi, 2011, p. 129).

In general, in our study, we understand corruption as the unlawful use by an official of the granted administrative resources for personal or group benefit, which can have both a material and immaterial form. Meanwhile, unlawful use means a violation of both formal normative-legal institutions, including norms of official behavior and ethics, and informal norms of behavior, ethics, and morality.

Continuing our analysis, we move to the phrase “corruption counteraction”. Modern scientists also have not yet decided on the semantic designation of social activity directed against corruption. We come across such phrases as: “counteraction to corruption” / “corruption counteraction”, “prevention of corruption” / “corruption prevention”, “fight against corruption”, “corruption mitigation of corruption” / “corruption mitigation”, “corruption control” and so on.

According to O. Novikov, corruption counteraction is an “activity in the sphere of public administration aimed at reducing opportunities for the corruption of social relations” (Novikov, 2020, p. 53). In this case, in the scientific aspect, counteraction to corruption has a narrow and broad meaning. In the first case, it is a system of measures aimed at reducing the volume of corruption, limiting the influence of corruption on other social phenomena and processes, as well as actions to neutralize factors of corrupt behavior, apply sanctions to subjects of corruption offenses and eliminate their consequences. A broad understanding of counteraction to corruption is interpreted as lawful activity that helps reduce the opportunities for such actions, in particular by ensuring the rule of law, implementing other principles of law, developing a democratic society, and establishing a rule of law state (Novikov, 2020, p. 54).

According to A. Prykhodko’s research, prevention, counteraction, and fight are three different directions of anti-corruption activity. If prevention and fighting manifestations of corruption in the state involve the combined activity of all interested parties (state, business,

civil society) to “identify, study, limit or eliminate phenomena that generate corruption offenses or facilitate their spread ... by all available means of communicative interaction, the implementation of which is objectified by preventive, repressive, and elimination measures”, then counteraction is purely the activity of “anti-corruption and law enforcement agencies aimed at detecting corruption offenses, proper investigation, bringing offenders to justice, as well as protecting persons who have been harmed as a result of corrupt actions” (Prykhodko, 2020, pp. 140-141).

Finally, we consider it necessary to take as an axiom the statement that corruption as a phenomenon cannot be destroyed, so it is impossible to fight or prevent it. However, the only thing that can be done with it is to counter its spreading. Therefore, we understand under the concept of “corruption counteraction” the activity of actors / subjects of anti-corruption activity in terms of preventing corruption manifestations (detecting and eliminating the causes of the spread of corruption crimes); fighting against corrupt acts (their termination, exposure, and direct investigation) and minimizing and eliminating the consequences of committed corruption offenses (Okuniev, Boiko, & Lukin, 2018).

As for the phrase “corruption counteraction tool”, it is appropriate here to quote M. Kikalishvili, who defines the similar term “measures against corruption crime” as “a complex of actions and / or means by which a complex and multi-aspect activity is implemented, which combines elements of social management with private and public initiatives and is aimed at creating obstacles to the commission of corrupt acts, resisting their spread, as well as an appropriate response to those acts that have already manifested in actual committed offenses”(Kikalishvili, 2021, pp. 22-23). So, “corruption counteraction tool” in our research is understood as the means to create obstacles to the commission of corrupt acts, resist their spread, and also respond to those actions that have already manifested in actual committed offenses. In a such context corruption counteraction tool can be associated with a quality control tool.

From abstract concepts and phenomena, we move to the world where uncertainty always gets its definition – the world of mathematics and information science, namely to clarify the concept of “innovative analytical and statistical technology”. The term “analytical and statistical

technology” can have different interpretations, depending on the context in which it is used. However, in a general sense, it is a technology based on the application of data analytics methods and statistical analysis to solve various tasks in different fields.

For example, E. Rogers understood technology is as “a project of instrumental action that reduces the uncertainty of causal relationships on the way to achieving the desired result. Technology usually consists of two components: 1) the hardware part, that is, the device that embodies the technology as a physical or material object, and 2) the informational part (software), that is, the information base of this device” (Rogers, 1983, pp. 13-14). Thus, we see that technology can be considered as a tool, the nature of the use of which is determined by a pre-determined goal. In our study, we understand “technology” as a documented mechanism or method of applying certain physical or material objects, the operation of which is pre-determined by a set of instructions.

Next concept is statistics and analytics. At the current stage of society development, the term “statistics” is used in two senses. Firstly, in everyday life, it is understood as a set of quantitative data about a certain phenomenon or process. Secondly, experts in the field of statistical methods call “statistics” a function of observation results used to estimate characteristics and distribution parameters and hypothesis testing (Rogel-Salazar, 2023, pp. 14-24).

It should be noted that the application of statistical methods in complex systems is impossible without the use of laws of thought, more precisely analytical methods – analytics. Analytics appears as a discipline that combines three most important components: the methodology of information-analytical work, the organizational provision of this process, and the technology-methodological support for the development and creation of instrumental means for its implementation.

So, analytics is the basis for intellectual, logical and thinking activity aimed at solving practical tasks, allowing the actor / subject of cognition to predict the future state of the object of analysis. It plays an integrative role in reconstructing the past, revealing the present, and forecasting the future. Overall, by analytics, we understand “the set of principles of methodological, organizational, and technological support for individual and collective thinking activities that

allow effective processing of information to improve the quality of existing and new knowledge, as well as preparation of an information base for making optimal management decisions” (Zakharova & Filipova, 2013, pp. 26-27).

Analytics acts as a comprehensive discipline, combining methodological approaches from various scientific directions aimed at mining, proper presentation, and management of knowledge. It integrates the results obtained in various scientific fields: from mathematics to synoptics and meteorology. Also, analytics includes some working methods from psychology and psychoanalysis, social and political science, history, source studies, library science, linguistics, pedagogy, forensics, jurisprudence, and many others. Almost a complete complex of sciences that have ever attempted a scientific invariant description of the features of the behavior of an individual or a group in different situations: during group and individual activities, during expressing thoughts, synthesizing goals and choosing methods of their achievements, and other situations.

Therefore, in the general sense, by analytical and statistical technology we understand a documented procedure or algorithm for data analysis. Any analytical and statistical data analysis usually includes a whole range of procedures and algorithms that are performed sequentially, in parallel, or according to a more complex scheme. It is important to emphasize that skilled and effective application of analytical and statistical analysis is by no means checking one separately taken statistical hypothesis or evaluating the characteristics or parameters of one given distribution from a fixed family. Operations of this kind are just a separate brick from which analytical and statistical technology is composed.

Let's turn to such analytical and statistical technologies which are called “innovative”. Quality expert Kaeru Ishikawa divides analytical and statistical methods into three groups: elementary, intermediate, and advanced. Elementary methods include such simple tools as: a control sheet, a quality histogram, a cause-and-effect diagram, a Pareto chart, stratification, a scatter diagram, a control card. Intermediate methods are methods of acceptance control, distribution theory, statistical estimates, and criteria. Advanced methods are methods based on the use of computer technologies: experimental design, multidimensional analysis, operations research methods (Ishikawa, 1989).

We are interested in advanced methods, as they have a direct relation to innovation. In modern literature, there are many definitions of innovation. The simplest definition of innovation as an idea, practice or object that “is perceived as new by the individual or other implementer” (Rogers, 1983, p. 11).

In modern research, two approaches to defining the innovation concept are common:

- 1) static, where innovation acts as a “product-innovation”, when it is presented as the result of an innovative process in the form of a new technique (product), technology, a new method introduced to the market;
- 2) dynamic, where innovation acts as a “process-innovation” of research, design, development, production organization, commercialization and distribution of new products, technologies, principles instead of the existing ones (Huturov, 2019, p. 16).

It should be noted that in modern (especially English) scientific and technical literature in relation to innovative technologies, the term “hi-tech” is also used. The term “high technology” is used to denote the most advanced technologies that rely on the latest achievements of scientific and technical progress. There are such technologies among the technologies of analytical and statistical data analysis – like in any scientific-practical field that is intensively developing.

“High”, as in other areas, means that analytical and statistical technology is based on modern achievements of analytical and statistical theories and practices, in particular, on achievements in the theory of probability, applied mathematical statistics. At the same time, “based on modern achievements” means, firstly, that the mathematical basis of technology has been obtained relatively recently within the framework of the relevant scientific discipline, and secondly, that calculation algorithms have been developed and justified according to it (i.e., they are not obtained heuristically).

Subsequently, new approaches and results may force a reassessment of the applicability and capabilities of technology, lead to its replacement with a more modern one. Otherwise, “high analytical and statistical technologies” turn into “classical” technologies. Thus, high analytical and statistical technologies are the results of recent serious scientific research.

High analytical and statistical technologies are contrasted, accordingly, with low analytical and statistical technologies (with classical ones situated between them). “Low analytical and statistical technologies” are those technologies that do not correspond to the modern level of science and practice. Usually, they are simultaneously outdated and not entirely adequate to the tasks being solved.

Classical analytical and statistical technologies are understood as long-standing technologies that have retained their importance for modern analytical and statistical practice. Such technologies based on the method of least squares (including methods of point estimation of parameters of the predictive function, non-parametric methods of confidence estimation of parameters and the predictive function as a whole, tests of various hypotheses about them), Kolmogorov, Smirnov, omega-square type statistics, non-parametric Spearman and Kendall correlation coefficients (to attribute them only to ranking analysis methods means to condescend to “low analytical and statistical technologies”) and many other statistical procedures.

There is another approach (Köbis, Starke, & Rahwan, 2022; Kovtun, 2011; Odilla, 2023) to the classification of analytical and statistical technologies, according to which they can be divided into traditional (classical) and automated. The classical one involves the activities of 1-2 experts with a minor application of computer (information) technologies, during which analysis of interrelations, interdependencies of various indicators is carried out to identify deviations from the norm (this includes stereotype methods, adjusted indicators, associated comparisons, and so on).

In turn, automated group assumes, firstly, the involvement of intelligent systems in the data processing, which are trained to perform analytical and statistical operations with datasets and capable of replacing a person in most operations performed. These technologies include data mining, anomaly detection in them, or new knowledge discovery (novelty detection, knowledge discovery). The use of these algorithms allows the automation of the work of several specialists and simplifies the process of preparing reports about exceptional (new, anomalous) situations. Based on this classification, automated technologies should be considered as innovative analytical and statistical technologies. We can add that the use of the indicated technologies in modern conditions of societal development is impossible without the

use also of such technologies as machine learning, deep learning, neural networks, natural language processing (NLP), network analysis, real-time data analysis, which allow obtaining fast and accurate results of analysis of large volumes of data.

As noted by (Köbis, Starke, & Rahwan, 2021), the active implementation of artificial intelligence and machine learning technologies brings new hope for more effective corruption counteraction. Artificial intelligence differs significantly from static information and communication technologies. “Classic” technologies allow to digitize the procurement procedures, the provision of government services online, and the publication of open government data. However, traditional technologies cannot operate autonomously, while artificial intelligence, on the contrary, was specifically designed for this. Thanks to its learning capabilities, artificial intelligence can autonomously perform a wide range of tasks previously reserved for humans (Rahwan et al., 2019). In the context of today's digital transformation of states, artificial intelligence can take on anti-corruption tasks, such as predicting, detecting, and exposing corruption cases (Lima & Delen, 2020; López-Iturriaga & Sanz, 2017).

Thus, in practical use, applied statistical methods and analytics involve not just separate data description methods, estimation, hypothesis testing, but complete, integrated procedures – so-called “analytical and statistical technologies”. The concept of “analytical and statistical technology” in our understanding is analogous to the concept of “technological process” in the theory and practice of production organization (The Ukrainian Week, 2022).

Naturally, some statistical technologies better meet the needs of the researcher (user, statistician), others worse; some are modern, others outdated; the properties of some are studied, others not. It should be noted that competent and effective application of analytical and statistical methods is by no means just a check of one separately taken statistical hypothesis or an assessment of characteristics or parameters of one given distribution from a fixed family. Such operations are only a separate brick that makes up the analytical and statistical technology. The procedure of analytical and statistical data analysis is an information technology process, i.e., a certain information technology in which statistical information

undergoes various operations (sequentially, in parallel or according to more complex schemes).

### Conclusions

Upon concluding the conceptual analysis of the deployment of innovative analytical and statistical technology in anti-corruption activities, two foundational concepts have been delineated.

The first concept, referred to as the “corruption counteraction tool”, is characterized as a mechanism designed to impede corrupt acts, resist their proliferation, and respond to those actions that have culminated in actual committed offenses. Within this framework, the corruption counteraction tool can be likened to a quality control instrument, serving to maintain integrity and hinder corrupt practices.

The second term, “innovative analytical and statistical technology”, is indicative of a broad spectrum of methods and tools. This encapsulates the utilization of mathematical and statistical data analysis techniques with the objectives of unveiling valuable relationships and patterns within data, enhancing decision-making efficiency, and identifying irregularities across various domains. More specifically, this term embodies the application of sophisticated, contemporary data analysis methods such as machine learning, deep learning, neural networks, natural language processing, and graph analysis. The goal here is to discern intricate relationships and useful patterns in data sets. Included within this definition are real-time data analysis techniques, enabling prompt and precise analytical outcomes for substantial data volumes. When fused with quality control tools, analytical and statistical technology foster standardized rules and algorithms for data evaluation in contexts that may be overwhelmingly complex for human cognition, such as handling immense quantities of data and iterations. This synthesis brings forth a robust approach to monitoring and mitigating corruption, leveraging state-of-the-art technology to navigate the multifaceted landscape of integrity and governance.

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## Ensuring information security of critical infrastructure objects as a component to guarantee Ukraine's national security

### Забезпечення інформаційної безпеки об'єктів критичної інфраструктури, як складова гарантування національної безпеки України

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#### Abstract

The purpose of the article is to define and justify the conceptual foundations of the implementation of the state policy on ensuring the information security of critical infrastructure objects, as a component of guaranteeing the national security of Ukraine. The methodological basis of the study was a set of general scientific and special methods of scientific knowledge: dialectical-phenomenological, systemic analysis and synthesis, structural-functional, deduction and induction, etc. According to the results of the research: the author's definition of the concepts «information security of critical infrastructure objects of Ukraine» and «threats to information security of critical infrastructure objects of Ukraine» was formulated; the elements of the system of threats to the information security of critical infrastructure objects of Ukraine are identified; the factors leading to the emergence of threats to critical infrastructure objects of Ukraine are singled out and groups of basic measures aimed at countering traditional and

#### Анотація

Метою статті є визначення та обґрунтування концептуальних засад реалізації державної політики із забезпечення інформаційної безпеки об'єктів критичної інфраструктури, як складова гарантування національної безпеки України. Методологічну основу дослідження склали сукупність загальнонаукових та спеціальних методів наукового пізнання: діалектико-феноменологічного, системного аналізу та синтезу, структурно-функціонального, дедукції та індукції тощо. За результатами дослідження: сформульовано авторське визначення понять «інформаційна безпека об'єктів критичної інфраструктури України» та «загрози інформаційній безпеці об'єктів критичної інфраструктури України»; визначено елементи системи загроз інформаційній безпеці об'єктів критичної інфраструктури України; виокремлено чинники, що призводять до виникнення загроз об'єктам критичної інфраструктури України та сформульовано групи основних заходів, спрямованих на протидію традиційним і новим

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new threats to the information security of critical infrastructure objects of Ukraine are formulated.

**Keywords:** critical infrastructure objects, information security, forces and means, national security, threats to information security.

## Introduction

The further development of Ukraine, the implementation of the European integration course, the very existence of our state in a period of threats and danger even more than in peacetime, requires the activation of radical reform processes, first of all, in the field of organization and activity of the national security and defense sector, transformation on democratic principles of all the main civil institutions, introduction of new principles of exercise of state power.

Provided the spread of information technologies and their active use in the conditions of the Russian-Ukrainian war (Horska et al., 2023, p. 353), the issue of ensuring the sustainable functioning of critical infrastructure facilities is extremely urgent. Therefore, our state should systematically improve conceptual measures of information security, because information threats are much more dynamic compared to economic or political ones. In our opinion, a certain reserve in this countermeasure is the improvement of the organization of the work of special entities to ensure timely and targeted neutralization of information threats (preferably at the stage of preparation for their implementation or at the initial stage).

In modern conditions, «informational potential» becomes one of the most important factors in ensuring national security, along with «economic potential», «military potential», etc. The level of development and security of the information environment actively influence the state of political, economic and other components of national security of Ukraine (Prysiashniuk, 2014, p. 27).

## Methodology

In order to achieve the goals of scientific research, a combination of interrelated and complementary scientific research methods was used.

Thus, the methodological basis of the study was a set of general scientific and special methods of scientific knowledge: dialectical-

загрозам інформаційній безпеці об'єктів критичної інфраструктури України.

**Ключові слова:** загрози інформаційній безпеці, інформаційна безпека, національна безпека, об'єкти критичної інфраструктури, сили та засоби.

phenomenological, systemic analysis and synthesis, structural-functional, deduction and induction, and others. In particular, the use of the dialectical and phenomenological method, as well as systemic analysis and synthesis, made it possible to identify the essential features of the implementation of state policy in the field of ensuring information security of critical infrastructure objects, as a component of guaranteeing the national security of Ukraine. Thanks to the use of the structural-functional method, it was possible to identify and generally characterize the forces and means of ensuring information security of critical infrastructure objects of Ukraine. The use of methods of system analysis and synthesis, as well as deduction and induction made it possible to formulate the concept of «threats to the information security of critical infrastructure objects of Ukraine», to systematize them, to single out the factors that lead to their occurrence, and to propose groups of basic measures aimed at countering traditional and new threats to the information security of critical infrastructure objects of Ukraine.

The research also used the work of scientists reflected in scientific articles, which are indexed in the Web of Science scientometric database.

## Literature Review

An urgent problem today for ensuring international and national security is prompt response to the emergence of new challenges and threats in various spheres of public life.

Its successful solution in the conditions of global transformations in the world is impossible within the framework of the application of traditional approaches to predicting threats and ensuring the appropriate level of collective and national security.

In these conditions, the awareness and proper assessment of the importance of information and the informational component of the development of modern civilization becomes of primary importance. Understanding the importance of ensuring information security (including critical

infrastructure objects), more and more scientists from different countries of the world are paying attention to the study of this issue.

Let's name only some of them, without at all diminishing the achievements and significance of other scientists and researchers. In particular, these are: Doronin I., Dovgan O., Govorukha V., Horbulin V., Krutov V., Lipkan V., Marushchak A., Petryk V., Pocheptsov H., Polevy V., Pylypchuk V., Risman D., Ron T., Tikhomirov O., Tkachuk T., Ukhanova N. and others.

These authors made a significant contribution to the development of legal and organizational regulation of legal relations in the information field. Despite the achievements of Ukrainian and foreign scientists, in view of the ultra-fast pace of informatization, in particular the current stage – digitization, a significant range of issues of the raised issues still remain insufficiently researched and require scientific substantiation for the purpose of further implementation into the practical component.

The rapid development of information technologies and the globalization of the Internet have led to the fact that the information infrastructure of the state has become an object of criminal activity - more vulnerable places for illegal encroachments have appeared.

Criminal and terrorist groups have gained the opportunity to use the global network to achieve their goals.

Because of this, the problem of ensuring the security of the information infrastructure is essential in the state's defense capability, its economic and social development.

The processes of global informatization have led to the fact that modern society is almost completely dependent on the state of security of the information infrastructure.

## Results and discussion

According to the provisions of the Law of Ukraine «On the National Security of Ukraine», threats to the national security of Ukraine are phenomena, trends and factors that make it impossible or difficult or may make it impossible or difficult to realize national interests and preserve the national values of Ukraine. In turn, national interests in the specified article are defined as vital interests of man, society and the state, the implementation of which ensures the

state sovereignty of Ukraine, its progressive democratic development, as well as safe living conditions and well-being of its citizens (Law 2469-VIII, 2018).

Art. 1 of the Law of Ukraine «On the National Security of Ukraine» also stipulates that the National Strategy is a document that defines the current threats to the national security of Ukraine and the corresponding goals, tasks, mechanisms for the protection of the national interests of Ukraine and is the basis for the planning and implementation of state policy in the field of national security of Ukraine. The specified legal act states that the priorities of the national interests of Ukraine and ensuring national security are:

- defense of independence and state sovereignty;
- restoration of territorial integrity within the internationally recognized state border of Ukraine;
- social development, primarily the development of human capital;
- protection of rights, freedoms and legitimate interests of citizens of Ukraine;
- European and Euro-Atlantic integration.

Implementation of these priorities will be ensured in the following areas:

- restoration of peace, territorial integrity and state sovereignty in the temporarily occupied territories in the Donetsk and Luhansk regions of Ukraine on the basis of international law;
- implementation of international legal, political and diplomatic, security, humanitarian and economic measures aimed at ending the illegal occupation of the Autonomous Republic of Crimea and the city of Sevastopol by the Russian federation;
- continuation of the implementation of defense and deterrence measures, active use of negotiating formats and consolidation of international pressure on the Russian federation as a guarantee of preventing the escalation of the conflict on the part of Russia, reducing tension and ending armed aggression by the Russian federation;
- use of all available mechanisms of the UN, the Council of Europe, the OSCE, and other international organizations to consolidate international support for Ukraine in countering Russian aggression, restoring Ukraine's territorial integrity and state sovereignty;

- development of relations with the United States of America, the United Kingdom of Great Britain and Northern Ireland, Canada, the Federal Republic of Germany, the French Republic, neighboring and other states, as well as with international organizations to ensure international security and counter common challenges and threats, minimizing their impact on Ukraine;
- full implementation of the Association Agreement between Ukraine, on the one hand, and the European Union, the European Atomic Energy Community and their member states, on the other hand, and modernization of its parameters where necessary, based on the results of a comprehensive review of the achievement of the goals of the Agreement in accordance with Article 481, with the aim of acquiring full membership of Ukraine in the European Union;
- development of a special partnership with the North Atlantic Treaty Organization with the aim of gaining full membership of Ukraine in NATO;
- strengthening the capabilities of the Armed Forces of Ukraine, other bodies of the security and defense sector;
- sustainable development of the national economy and its integration into the European economic space;
- the development of Ukraine's human capital, in particular through the modernization of education and science, health care, culture, and social protection;
- protection of the individual, society and the state from offenses, in particular corruption, ensuring the restoration of violated rights, compensation for the damage caused;
- ensuring environmental safety, creating safe conditions for human life, in particular in territories affected by hostilities, building an effective civil defense system;
- strengthening the capabilities of the national cyber security system to effectively counter cyber threats in the modern security environment;
- development of public-private partnership (Decree of the President of Ukraine 392/2020, 2020).

In accordance with the provisions of the Information Security Strategy, global challenges and threats are defined as:

- increase in the number of global disinformation campaigns;

- the information policy of the Russian federation is a threat not only to Ukraine, but also to other democratic states;
- social networks as subjects of influence in the information space;
- insufficient level of media literacy (media culture) in conditions of rapid development of digital technologies.

National challenges and threats are defined as:

- informational influence of the Russian federation as an aggressor state on the population of Ukraine;
- the information dominance of the Russian federation as an aggressor state in the temporarily occupied territories of Ukraine;
- limited opportunities to respond to disinformation campaigns;
- lack of formation of the strategic communications system;
- imperfect regulation of relations in the field of information activities and protection of journalist's professional activities
- attempts to manipulate the consciousness of Ukrainian citizens regarding the European and Euro-Atlantic integration of Ukraine;
- access to information at the local level;
- insufficient level of information culture and media literacy in society to counteract manipulative and informational influences (Decree of the President of Ukraine 685/2021, 2021).

According to the provisions of the National Security Strategy, the main task of the development of the cyber security system is to guarantee the cyber resistance and cyber security of the national information infrastructure, in particular in the conditions of digital transformation (Decree of the President of Ukraine 392/2020, 2020).

Having analyzed the above, we state that information security, cyber security and state security are components of national security. That is, on the one hand, they are independent components of the state's national security, and on the other hand, they are integrated components of any other security: military, economic, political, etc.

All components of the structure of national security are interconnected, but it is appropriate to note that some types of security are not only independent, but also those that have corresponding dimensions in other directions of the life of society. Among such «integrative»

types, according to Pirozhkov S., information security occupies an important place (Pirozhkov, 2016).

The issue of ensuring state interests and state security in the field of obtaining and using information is currently quite relevant. Information security is ensured by the implementation of a unified state policy in the field of national information security, a system of economic, political and organizational measures adequate to existing and potential threats to national interests (personal, public and state) in the information sphere.

At the same time, in our opinion, the national special services with their information and analytical potential should play a significant role in this complex system (Shilin, Shmotkin, Chernysh, Chekhovska & Konyk, 2023; Shilin, Shmotkin, Chernysh, Konyk & Botvinkin, 2022; Chernysh, Prozorov, Tytarenko, Matsiuk & Lebedev, 2022; Kostenko, Strilchu, Chernysh & Buchynska, 2021).

To ensure and maintain the necessary level of state security in the information space, a system of legal norms regulating relations in the information sphere is being developed and implemented. It provides for the determination of the key areas of activity of state administration bodies, the creation or reorganization of bodies and forces that ensure information security, as well as the formation of a mechanism for monitoring their activities.

The point of view of Lipkan V. deserves attention, noting that the process of forming key elements of the information security system has not yet been completed. Taking into account the general lack of formation of the national security system, the uncertainty of the state information policy is appropriate in this context. Moreover, the imperfection of regulatory and legal regulation of the studied processes negatively affects the quality of public administration in the specified area (Lipkan et al., 2006).

In our opinion, the issue of ensuring information security of critical infrastructure objects, as a component of ensuring Ukraine's national security, should be considered systematically and comprehensively - in the context of ensuring cyber security, state security and information security. These components act as integrated components of national security and are positioned as priority functions of the state.

**Information security of objects of critical infrastructure of Ukraine** is a systematic provision of the state of complete security of their information field. Control over the use of information resources and the ability to effectively take certain actions in relation to them is information sovereignty, and one of the main tools of such control is countering destructive informational influences.

The rapid development of the global information space and the use of information and communication technologies in all spheres of life contribute to the expansion of the information society in Ukraine and determine the importance of information security problems. In such conditions, one of the main tasks of the state is to create a comprehensive system for assessing threats of an informational nature and corresponding response in order to ensure state security in the information sphere (Decree of the President of Ukraine 449/2014, 2014).

**Threats to the information security of critical infrastructure objects of Ukraine** can be formulated as a system of conditions and factors that lead or may lead to damage to important state, public and personal interests due to technical influence on information resources and infrastructure.

**The system of threats to the information security of critical infrastructure objects of Ukraine may include the following categories:**

- threats to the security of information and related infrastructure, which include risks related to misuse, unauthorized access, damage or loss of information, as well as attacks on information infrastructure (cyber-attacks or computer viruses);
- threats to the safety of subjects of the information direction and social ties between them from actions (influences) of an informational nature, which include manipulation of information with the aim of influencing the consciousness and behavior of citizens, forming the desired impression and manipulation of social ties with the aim of influencing the public order;
- threats to the current order of realization of the rights and interests of subjects of the information sector, which include actions aimed at violating laws, rights and freedoms, in particular in the field of information (distribution of misinformation, discrediting, obstacles to access to information or restriction of freedom of speech).

At the same time, we agree with the opinion of Khmelevskiy R. that even detailed lists of threats cannot be comprehensive and stable. This is explained by the fact that the sources of threats can be diverse: a person, technical means, models, algorithms, software and technological processing schemes, the external environment, etc. (Khmelevskiy, 2016, p. 69).

Having analyzed the system of threats to information security of critical infrastructure objects of Ukraine, we come to the conclusion that the technical aspect is not central to the structure of information security of critical infrastructure objects of Ukraine. Taking into account the above classifications, it is advisable to ensure not only the security of information data from destruction, distortion or blocking, but also general information security. This will be facilitated by the priority development of an appropriate system of regulatory and legal regulation of countering threats to these interests and streamlining the law-making process in the field of analysis, generalization, use and dissemination of information.

The need for such development of the system of regulatory and legal support is determined by certain factors. First, in the conditions of the functioning of the legal state and civil society, the main functions of state authorities, which are entrusted with the main responsibility for national security, should be regulated by legal norms aimed at ensuring civil constitutional rights and freedoms. Legislation in this direction should be aimed at the normative consolidation of the tasks of countering threats to the national security of Ukraine, the means and methods of their implementation, ensuring the conciliatory policy of the authorities. Secondly, Ukraine's course for integration into the international community significantly expands the possibilities of consolidating the conceptual foundations of state information security through participation in the development and improvement of international legal norms in this area, the formation of an international system for ensuring information security on a global scale and within the framework of an individual country. Thirdly, the implementation of guarantees of civil rights and freedoms, protection of state interests of our country involves a significant increase in the role of authorities in regulating relevant social relations, the presence of a transparent and understandable state policy (Pocheptsov, 2015).

The main factors that lead to the emergence of threats to the objects of critical infrastructure of Ukraine include the following:

- lack of a complete system of information and analytical support of state authorities and management;
- destruction of intellectual potential, unpreparedness of the education system to support the processes of anticipatory development of the state;
- low general level of information infrastructure development, which does not exclude the possibility of expansion of foreign companies in the market of information services;
- the destruction of the national information space and the possibility of its use in anti-state interests;
- insufficient professional, intellectual and creative level of domestic producers of information products and services, their lack of competitiveness in the global information market;
- informational expansion of leading foreign states, development and use by them, international or domestic criminal organizations of various modern methods of direct subversion;
- poorly controlled activities of individual political forces, media and individuals, aimed at destroying moral values, undermining the moral and physical health of the nation; using mass media from positions contrary to the interests of citizens, political and public organizations, and the state;
- loss of trust in the government by a significant part of the population due to the spread of slander, the use of «dirty» political technologies, especially during election campaigns;
- competitive struggle for ownership of mass media, the process of their monopolization and concentration of informational and political power; manipulation of public opinion (through disinformation, distortion of data, suppression of true information, etc.) (Petryk et al., 2018, p. 26-27).

The system of ensuring information security of critical infrastructure objects of Ukraine as a component of the system of ensuring national security is generally characterized by appropriate forces and means. In this context, it is possible to consider the **forces** as the subject composition of the information security system of critical infrastructure objects of Ukraine, i.e., people, organizations, structures, special bodies that

carry out information protection; **means** – as technologies and various technical, software, linguistic, legal and organizational resources. They include telecommunications channels used to collect, form, analyze, transmit or receive information data, as well as measures aimed at strengthening said security.

In the modern information society, each subject plays an important role in ensuring the information security of critical infrastructure objects of Ukraine. Thanks to synergistic features, any of the subjects can simultaneously be an object of information security and a source of possible threats or a channel of their spread. Therefore, the success of ensuring information security of critical infrastructure objects of Ukraine depends not only on special state structures, but also on each subject of information relations, which must protect itself in the information sphere. At the same time, the state acts as a special subject of ensuring information security, as it has the ability to direct administrative action and uses legal means to regulate information relations. In addition, it should be taken into account that the state plays a special role among the subjects of information security of critical infrastructure objects of Ukraine. After all, only it has a wide potential, which includes not only economic, political and ideological means of indirect influence, but also direct managerial action. This means that the state can use legal means to regulate information relations and directly influence the provision of information security (Tikhomirov, 2023).

Taking into account the provisions of Article 17 of the Constitution of Ukraine (Law 254к/96-BP, 1996), ensuring information security is considered one of the most important functions of the state, along with the protection of Ukrainian sovereignty and territorial integrity. State activity in this direction is carried out through relevant authorities. In particular, the circle of subjects responsible for ensuring state security and implementing a set of other measures of a similar direction has been defined. These entities include military formations, special services and law enforcement agencies, the content and procedure of which are determined by law.

According to the provisions of Article 12 of the Law of Ukraine «On National Security of Ukraine», the national security and defense sector consists of four interrelated elements: security forces; defense forces; defense industrial complex; citizens and their associations who can voluntarily participate in ensuring the security of

the state. The functions and competence of elements of the security and defense sector are established by the current legislation of Ukraine (Law № 2469-VIII, 2018).

Lipkan V. proves that, taking into account the functionality of the subjects, the information security system is formed from the strategic, tactical and operational levels of security management. The researcher attributes the National Security and Defense Council of Ukraine and the Cabinet of Ministers of Ukraine to the subjects of the higher, strategic level, respectively, the central bodies of the executive power are the subjects of the lower, tactical level, and the local bodies of the executive power are located at the operational level (Lipkan, 2009). Agreeing with Lipkan V., it should be noted at the same time that the Security Service of Ukraine and intelligence agencies «drop out» of the three-level system.

## Conclusions

The results of the study of the genesis of the regulatory and legal regulation of organizational and practical measures to ensure the information security of Ukraine give grounds to believe that in the modern conditions of information confrontations, the information security of critical infrastructure objects of Ukraine is insufficiently protected from internal and external threats (Chernysh, Pogrebnyaya, Montrin, Koval & Paramonova, 2020a; Chernysh, Pogrebnyaya, Montrin, Koval & Paramonova, 2020b). Therefore, the protection of their information sovereignty, the formation of a powerful and effective information security system, the development and implementation of effective strategies and tactics for countering information threats should be the priority tasks of state authorities, special services and law enforcement agencies (including taking into account Russian armed aggression) and non-state institutions.

Taking into account the above, we come to the conclusion that in modern conditions it is possible to formulate the following groups of basic measures aimed at countering traditional and new threats to the information security of critical infrastructure objects of Ukraine and eliminating the factors that lead to their occurrence:

- **political and diplomatic measures** – political and diplomatic efforts to strengthen international cooperation, conclude international treaties and agreements, build

- alliances and partnerships with other countries in order to ensure collective security in the information sphere;
- **military measures** – strengthening of the country's defense capabilities, development of military infrastructure, modernization of military forces and implementation of military operations to protect the state security of Ukraine in the information sphere;
  - **legal (legislative) measures** – development and adoption of normative legal acts aimed at regulating the field of information security, including the fight against terrorism, cyber threats, cyber-crime, etc.;
  - **informational and psychological measures** – conducting informational campaigns, appropriate psychological influence on the public, formation of a positive image of the country, fight against disinformation and propaganda, formation of a «culture of information consumption» among the population;
  - **economic measures** – development of economic sectors, attracting investments, ensuring economic stability, combating financial threats in the information sphere;
  - **scientific and technological measures** – scientific research, development of technologies and innovations, which are aimed at identifying, forecasting and countering new threats in the information sphere, including cyberespionage and cyberattacks on critical infrastructure objects;
  - **organizational (administrative and procedural) measures** – development and implementation of effective organizational structures, procedures and policies that contribute to ensuring information security. May include creation of specialized information security departments, determination of information access control procedures, regular review and updating of security systems, etc.;
  - **physical measures** – physical protection of information infrastructure, data storage facilities (primarily critical infrastructure facilities), restriction of physical access to confidential information and installation of video surveillance and control systems;
  - **technical (hardware and software) measures** – application of special hardware and software for information protection, data encryption, detection and recovery after incidents, data backup and other technical means to ensure state security in the information sphere.

The implementation of the mentioned measures will contribute to the creation of a comprehensive system (takes into account various threats and uses various methods for their prevention and localization) of ensuring information security of critical infrastructure objects of Ukraine, as a component to guarantee Ukraine's national security.

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## Resource productivity in an economy of regions: analysis of foreign experience

### Продуктивність ресурсів економіки регіонів: аналіз зарубіжного досвіду

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#### Abstract

The objective of writing the article is to research existing foreign experience in the field of resource productivity, methods of its assessment in developed countries, in particular in the European Union and Organization for Economic Cooperation and Development members, and the possibility of implementing such experience in Ukraine. The article highlights the main methodical approaches to measuring resource productivity in the countries of the European Union and the OECD. The dynamics of resource productivity in comparison with GDP and DMC in the EU in 2000-2021 were studied. The productivity of resources in the EU in 2021 was analysed in terms of member states, and countries were grouped according to the level of the specified indicator. According to the methodology used in the EU and OECD, the calculation and analysis of resource productivity in Ukraine and the L'viv region in 2017-2020 was carried out.

**Keywords:** consumption of material resources, productivity, resources, sustainable development.

#### Анотація

Метою написання статті є дослідження існуючого зарубіжного досвіду в сфері продуктивності ресурсів, методів її оцінки у розвинених країнах, зокрема у Європейському Союзі та країнах, що входять до Організації економічного співробітництва та розвитку та можливості імплементації такого досвіду в Україні. У статті висвітлено основні методичні підходи до вимірювання продуктивності ресурсів у країнах Європейського Союзу та ОЕСР. Досліджено динаміку продуктивності ресурсів у порівнянні з ВВП та ВСМР в ЄС у 2000-2021 рр. Проаналізовано продуктивність ресурсів в ЄС у 2021 році розрізі країн-членів, Здійснено згрупування країн за рівнем зазначеного показника. За методикою ЄС та ОЕСР проведено розрахунок та аналіз продуктивності ресурсів в Україні та Львівській області у 2017-2020 рр.

**Ключові слова:** продуктивність, ресурси, споживання матеріальних ресурсів, сталий розвиток.

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## Introduction

The concept of sustainable development is considered to be one of the dominant ideas of the XXI century. Its appearance was a consequence of the world community's awareness of the need to ensure the coherence of current and future generations' interests in a way that the economic growth should take place taking into account the fundamental limitations of existing resources and the importance of harmonizing the links between ecological, economic and social systems.

Since the signing of the association agreement with the European Union in 2014 and receiving the status of a candidate for EU membership in 2022, Ukraine has started to join the implementation of sustainable development concept priorities and the observation system of their realization. In this context, the problem of evaluating and monitoring resource productivity, which is implemented in the practice of the EU, becomes extremely relevant. We should also note that the issue of productivity is constantly in the field of European science view and practice. To improve the existing methods of assessing resource productivity and deepening knowledge in the field of resource use and its impact on the environment, OECD countries have prepared a number of recommendations for increasing resource productivity. In addition, the organization emphasized its positive attitude to the experience exchange in matters of resource productivity with countries that are not OECD members. At the same time, the mentioned recommendations concerned only those natural resources whose production, processing, and usage have international importance from an ecological and economic point of view, in particular non-metallic minerals, ores, and biomass (OECD, 2008a). Besides, the G7 countries defined an action plan for the implementation of the so-called 3R initiative - reduce, reuse, recycle - which provided for the reduction of resource consumption, their reuse and recycling. The 3R policy is one of the steps aimed at achieving the so-called decoupling, i.e. breaking the linear relationship between economic growth and the number of resources used (G7 Information Centre, 2008). This is extremely important because ensuring sustainable development involves maximizing resource productivity while minimizing resource intensity. Thus, the productivity of using resource potential is one of the key indicators of sustainable development (Zablodska et al., 2020; Shults et al., 2021; Prytula et al 2021).

The full-scale armed aggression of the Russian Federation has caused significant destruction of production facilities as well as infrastructural and logistics facilities and provoked a number of restrictions on Ukraine and the economic development of its regions. These will exacerbate the resource productivity issue. Under the current circumstances, European experience will be useful for Ukraine from the point of view of identifying and improving existing approaches to resource productivity assessment. Adaptation of the methodological approaches of the EU member states in Ukraine and conducting domestic scientific research on the modernization of the methods for assessing resource productivity use is an important and timely task for Ukrainian science.

## Methods review

The evaluation of resource productivity in the EU is carried out by the European Commission, which conducts annual monitoring of this indicator based on Eurostat data using methods unified for all EU member states. A similar approach to calculating resource productivity is also used by the Organization for Economic Cooperation and Development. The only difference between these methods is the constituent components that are included in the biomass. While in the EU this category includes materials of organic origin used for the production of biofuel, in the OECD, biomass includes agricultural crops used in the food industry and agriculture, including feed (Eurostat Statistics Explained, 2023a; OECD, 2015).

According to the specified method, a resource productivity indicator is calculated according to formula 1:

$$RP = \frac{GDP}{DMC + import - export} \quad (1)$$

where GDP is gross domestic product, DMC is domestic material consumption, while imports and exports are calculated in physical measures (OECD 2008a, Eurostat Statistics Explained 2023b).

With the aim of comparing EU member states by the level of resource productivity and eliminating the difference between national currencies, calculations are presented in the purchasing power standard (PPS) per kilogram. DMC calculation is carried out for such main categories of resources as ores, fossil energy materials,

biomass, and non-metallic minerals (Eurostat Statistics Explained, 2023a).

It is worth noting that when assessing resource productivity by EU and OECD countries, water resources are not taken into account and land resources are evaluated indirectly, due to the number of mineral fertilizers used in agriculture (OECD, 2008c, 2015).

Nowadays, Ukraine does not assess resource productivity according to the EU or OECD methods.

The assessment of resource productivity is carried out only at the level of individual enterprises through the prism of accounting. Therefore, natural resources are included into long-term assets for which the depletion rate and depletion costs are calculated according to formulas 2 and 3:

$$N_d = \frac{C_t}{V_t}, \quad (2)$$

where  $N_d$  is the rate of depletion;  $C_t$  - purchase cost of the resource or field (total cost);  $V_t$  - explored reserves or the total volume of the resource;

$$C_e = N_d \times V_e, \quad (3)$$

where  $C_e$  is the cost of expenditure;  $V_e$  is the volume of extracted resources (Voronko, 2018).

Using formulas 2 and 3, some Ukrainian researchers propose to determine the productivity of resources according to formula 4:

$$RP = \frac{GDP}{C_e}, \quad (4)$$

where GDP is gross domestic product  $C_e$  is the cost of expenditure (Bobukh, 2014).

The methods of assessing resource productivity used in Ukraine have several significant drawbacks, particularly, the purchase price does not always correspond to the real value of the resource or deposit; since its own rate of depletion is determined for each individual deposit, it does not allow the calculation of the

investigated indicator in a regional or national dimension.

Therefore, we propose to calculate the productivity of resources in the regions of Ukraine as follows:

$$RP_r = \frac{GRP}{RMC + import - export}, \quad (5)$$

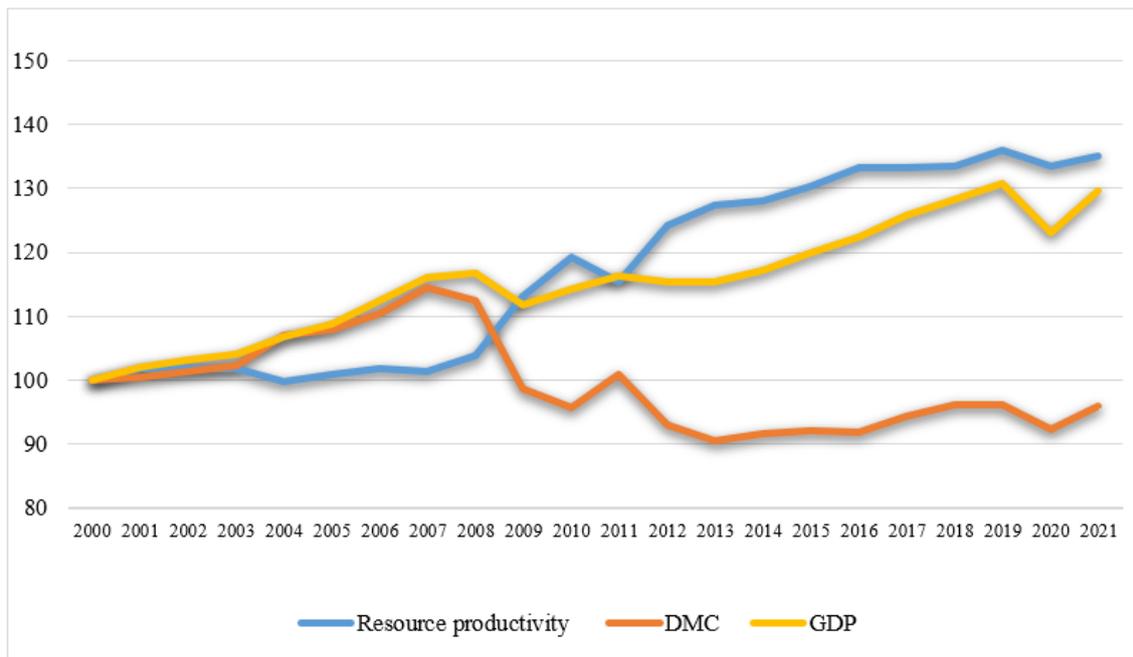
where GRP is gross regional product; RMC - regional material consumption.

## Results and Discussion

The analysis of the results of resource productivity assessment in the EU according to the current methods proved that resource productivity dynamics in the EU are not stable and shows that:

- The dominance of the share of non-metallic minerals in the structure of DMC. Thus, in 2021, the specific weight of non-metallic minerals was 53%, while the shares of biomass, fossil energy materials, and ores were 23%, 18%, and 6%, respectively (Eurostat Statistics Explained, 2023a).
- The growth of resource productivity against the background of the upward trend of GDP dynamics and the unstable dynamics of DMC. During the years 2000-2021, we observe two peaks of downward trends in productivity, which are associated with the consequences of the economic crises of 2008 and the COVID-19 pandemic (Figure 1)

We would like to add that from 2000 to 2008 we recorded a parallel growth of GDP and DMC, which was correspondingly reflected in the stability of the resource productivity indicator during this period. The financial crisis of 2008 provoked changes in the dynamics of all the above-mentioned indicators. There was a sharp reduction in consumption in comparison with a relatively small decrease in the GDP indicator. This had a positive effect on the dynamics of the resource productivity indicator, and by 2010, it had increased by 15%. According to the G7 and OECD reports, the financial crisis of 2008 led to a decline in the mining industry in almost all EU member states (OECD, 2008b).



**Figure 1.** Resource productivity compared to GDP and DMC in the EU in 2000-2021 (Index 2000 = 100%)  
Source: (Eurostat Statistics Explained, 2023c)

In addition, there was a drop in the purchasing power of resident citizens, and, accordingly, a drop in the demand for resources themselves. From 2008 to 2016, there was an increase in the GDP of the EU member states and a downward trend in the DMC indicator (except for 2011), which provoked a short-term decrease in the level of resource productivity. During 2016-2019, all three indicators grew up. It is worth noting that the impact of the crisis caused by the COVID-19 pandemic was different from the 2008 crisis: the decrease in resource productivity in the EU was insignificant compared to the previous crisis period. Thus, during the period 2000-2021, the level of resource productivity in the EU increased by 35% (Eurostat Statistics Explained, 2023c).

Analyzing the indicator of resource productivity in the EU, we note a significant differentiation level of this indicator in EU member states (Table 1). As we can see, the highest resource productivity in 2021 was in the Netherlands ( $\approx 2.5$  times higher than the average), Luxembourg, and Italy ( $\approx 1.5$  times higher than the average). The indicator of Slovenia was the closest to the average value of resource productivity in the EU (2.3 PPS/kg), and in Denmark, Sweden and Hungary it was approximately three-quarters of the average indicator for the EU. The lowest resource productivity in 2021 was in Bulgaria and Romania ( $\approx 3$  times less than the average).

**Table 1.**  
*Resource productivity in EU member states in 2021*

|    |                        | GDP <sub>PPS</sub> per capita | DMC per capita      | Resource productivity |                   |
|----|------------------------|-------------------------------|---------------------|-----------------------|-------------------|
|    |                        | (PPS per capita)              | (tonnes per capita) | (PPS per kilogram)    | (Index EU = 100%) |
| EU | European Union         | 32 334                        | 14,1                | 2,3                   | 100,0             |
| NL | Netherlands            | 42 344                        | 7,4                 | 5,7                   | 249,8             |
| LU | Luxembourg             | 89 661                        | 25,1                | 3,6                   | 157,5             |
| IT | Italy                  | 30 636                        | 8,9                 | 3,4                   | 150,2             |
| IE | Ireland                | 71 186                        | 22,4                | 3,2                   | 139,0             |
| FR | France                 | 33 734                        | 10,9                | 3,1                   | 136,3             |
| ES | Spain                  | 27 214                        | 9,1                 | 3,0                   | 130,0             |
| BE | Belgium                | 39 251                        | 14,0                | 2,8                   | 123,1             |
| MT | Malta                  | 31 955                        | 11,8                | 2,7                   | 119,0             |
| DE | Germany                | 38 630                        | 14,2                | 2,7                   | 118,5             |
| SI | Slovenia               | 29 103                        | 12,7                | 2,3                   | 99,7              |
| EL | Greece                 | 20 878                        | 9,8                 | 2,1                   | 92,8              |
| AT | Austria                | 38 936                        | 19,1                | 2,0                   | 89,2              |
| HR | Croatia                | 22 576                        | 11,3                | 1,9                   | 84,3              |
| CZ | Czech                  | 29 498                        | 15,5                | 1,9                   | 83,1              |
| SK | Slovakia               | 22 016                        | 11,9                | 1,9                   | 81,0              |
| DK | Denmark                | 43 300                        | 25,2                | 1,7                   | 75,0              |
| SE | Sweden                 | 40 145                        | 25,1                | 1,6                   | 70,2              |
| HU | Hungary                | 24 529                        | 15,3                | 1,6                   | 70,0              |
| LV | Latvia                 | 23 007                        | 14,5                | 1,6                   | 69,0              |
| CY | Cyprus                 | 28 392                        | 19,0                | 1,5                   | 65,6              |
| PT | Portugal               | 23 970                        | 16,9                | 1,4                   | 61,8              |
| PL | Poland                 | 24 961                        | 18,0                | 1,4                   | 61,0              |
| LT | Lithuania              | 28 399                        | 21,2                | 1,3                   | 58,7              |
| FI | Finland                | 36 495                        | 35,0                | 1,0                   | 45,6              |
| EE | Estonia                | 28 155                        | 29,4                | 1,0                   | 41,8              |
| RO | Romania                | 23 529                        | 29,0                | 0,8                   | 35,5              |
| BG | Bulgaria               | 17 849                        | 22,4                | 0,8                   | 34,7              |
| CH | Switzerland            | 47 933                        | 10,5                | 4,6                   | 199,4             |
| IS | Iceland                | 35 671                        | 15,0                | 2,4                   | 103,7             |
| NO | Norway                 | 41 858                        | 23,7                | 1,8                   | 77,1              |
| TR | Turkey                 | 18 466                        | 10,6                | 1,7                   | 75,8              |
| MK | North Macedonia        | 11 172                        | 9,0                 | 1,2                   | 54,2              |
| AL | Albania                | 9 524                         | 7,9                 | 1,2                   | 52,9              |
| BA | Bosnia and Herzegovina | 10 104                        | 11,2                | 0,9                   | 39,2              |
|    | Serbia                 | 12 758                        | 19,0                | 0,7                   | 29,3              |

Source: compiled and calculated by the authors based on Eurostat data

Taking into account the significant differentiation of EU member states in terms of

resource productivity, we consider it appropriate to single out 4 groups of countries (Table 2).

**Table 2.**

*Grouping of EU member states according to the main trends in the distribution of resource productivity indicators in 2021*

| Group | States  | Average GDP <sub>PPS</sub> (PPS per capita) | Average DMC (tonnes per capita) | Average resource productivity |
|-------|---|---|---------------------------------|-------------------------------|
| I     | Netherlands, Luxembourg, Italy, Ireland, France, Spain, Belgium, Malta, Germany | 44 957                                      | 13,8                            | 3,4                           |
| II    | Slovenia, Greece, Austria, Croatia, Czech, Slovakia                             | 27 168                                      | 13,4                            | 2                             |
| III   | Denmark, Sweden, Hungary, Latvia, Cyprus, Portugal, Poland, Lithuania           | 29 588                                      | 19,4                            | 1,5                           |
| IV    | Finland, Estonia, Romania, Bulgaria   | 26 507                                      | 29                              | 0,9                           |

Source: compiled and calculated by the authors based on Eurostat data

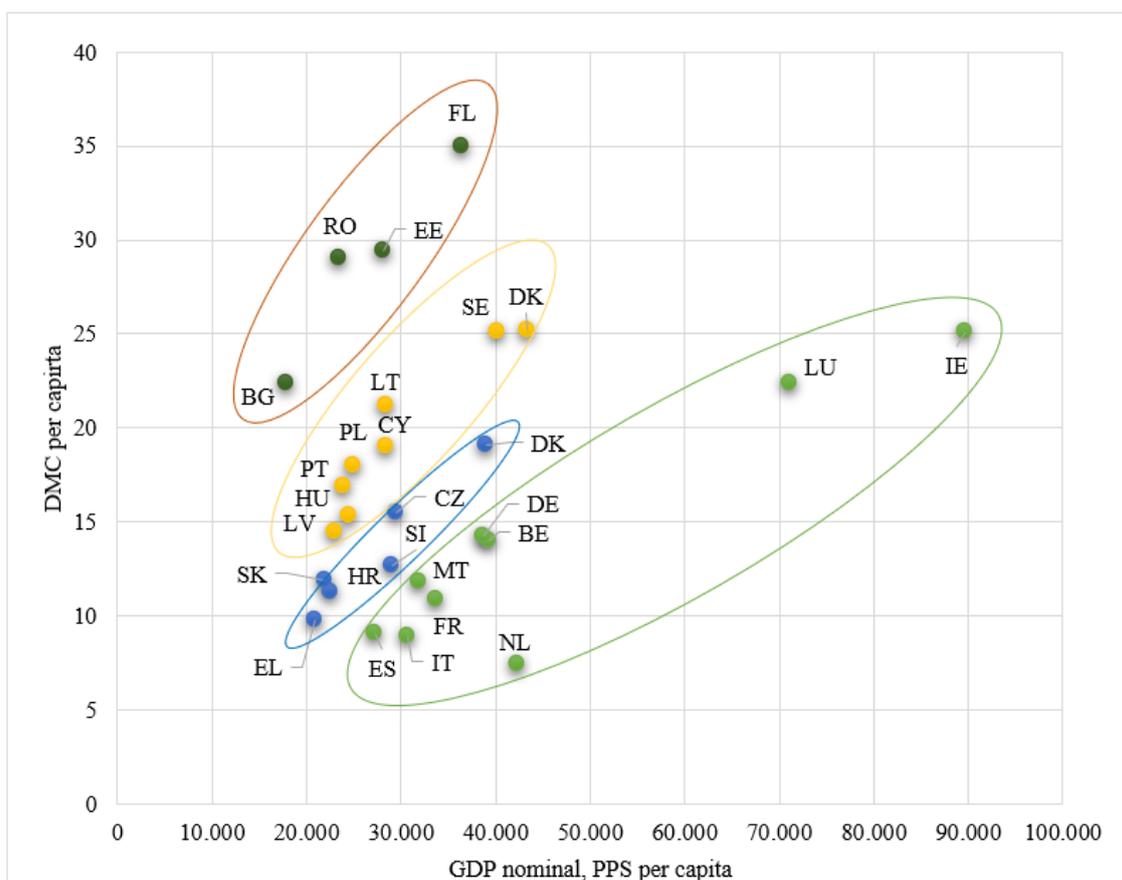
- I - Countries where the resource productivity indicator is higher than the European average (> 100%); In particular, this group includes all EU member states that are part of the G7 and Benelux countries;
- II – Countries where the resource productivity indicator is close to the European average (80 - 100%);
- III – Countries where the resource productivity indicator is lower than the European average (60 - 80%);
- IV – Countries with a low level of resource productivity in relation to the European level (< 60%).

The analysis of selected groups of countries allows us to conclude the intensive type of economic growth in the countries of group I and extensive in the countries of group IV. The distribution of the formed groups of countries by the level of resource productivity is presented in Figure 2.

Our calculations of the Pearson correlation coefficient, which ranges from 0.92 to 0.97,

proved the existence of a close relationship between the indicators of GDP and DMC in each of the groups.

The resource productivity indicator of Ukraine calculated according to the European methods in 2021 was 0.47€/kg, which indicates that Ukraine belongs to the group of countries with an extensive type of development. It should be noted that in the structure of DMC, we took into account agglomerated iron ores and concentrates, fossil energy materials (hard coal, crude oil, natural gas, peat), non-metallic minerals (construction sands; limestone and limestone flux; other crushed stone, which used as a filler in concrete and also for road surfacing and similar purposes; clays; gypsum and anhydrite; siliceous and quartz sands; chalk; crumb, granules and powder of travertine, granite, porphyry, basalt, sandstone, and other stone; kaolin; salt stone) and biomass (cereal and leguminous crops, sugar beet, sunflower, soybean, rape and rapeseed, potatoes, vegetable crops, fodder root crops, fodder corn, annual grasses for hay, perennial grasses for hay, fruit and berry crops, grapes, flax, meat, milk).



**Figure 2.** Distribution of EU countries by the level of resource productivity in 2021

<sup>a</sup> – GDP was counted in Euro (per capita)

Source: compiled by the authors based on Eurostat data

During 2017-2022, the resource productivity indicator in Ukraine increased by 38% and was the highest in 2020 (Table 3). This situation was caused by the growth of the country's GDP and the fall in DMC caused by the COVID-19 pandemic. The methodical approach to resource productivity assessment, which is used by the

European Commission, should also be used at the regional level. A comparative analysis of the productivity of the use of resource potential and the efficiency of its use in the regions of Ukraine will be useful in making strategic decisions regarding the post-war reconstruction of the country, which will require significant resources.

**Table 3.**

*Resource productivity in Ukraine in 2017-2020*

| <i>Ukraine</i>                           | <b>2017</b> | <b>2018</b> | <b>2019</b> | <b>2020</b> |
|--|-------------|-------------|-------------|-------------|
| GDP in chain-linked volumes, billion UAH | 2981,2      | 3560,3      | 3977,2      | 4191,9      |
| DMC, million tonnes                      | 294,2       | 308,8       | 305,4       | 289,1       |
| Resource productivity, UAH per kilogram  | 10,1        | 11,5        | 13,0        | 14,5        |
| Euro average exchange rate, UAH per €    | 30          | 32,1        | 28,6        | 30,8        |
| Resource productivity, € per kilogram    | 0,34        | 0,36        | 0,45        | 0,47        |

Source: compiled and calculated by the authors based on State Statistics Service of Ukraine data and National Bank of Ukraine data

According to the proposed method, we calculated the corresponding indicators of resource productivity for the L'viv region for the period 2017-2020 (not including imports and exports, due to lack of data in physical measures), which

is shown in Table 4. We note that the structure of RMC takes into account the resources that the region possesses, including fossil energy materials (hard coal, crude oil, natural gas), non-metallic minerals (building sand; limestone and

limestone flux, other crushed stone, which is used as a concrete filler and also for road surfacing and similar purposes; clay) and biomass (cereal and leguminous crops, sugar

beet, sunflower, soybean, rape and rapeseed, potatoes, vegetable crops, fodder roots, fodder corn, annual grasses for hay, perennial grasses for hay, fruit and berry crops, meat, milk).

**Table 4.**  
 Resource productivity in L'viv region in 2017-2020

| L'viv region                             | 2017    | 2018    | 2019    | 2020                 |
|--|---------|---------|---------|----------------------|
| GRP in chain-linked volumes, billion UAH | 147,4   | 177,2   | 214,5   | 236,3                |
| RMC, million tonnes                      | 11012,3 | 11493,6 | 11330,7 | 11246,0 <sup>a</sup> |
| Resource productivity, UAH per kilogram  | 13,4    | 15,4    | 18,9    | 21,0                 |
| Euro average exchange rate, UAH per €    | 30      | 32,1    | 28,6    | 30,8                 |
| Resource productivity, € per kilogram    | 0,45    | 0,48    | 0,66    | 0,68                 |

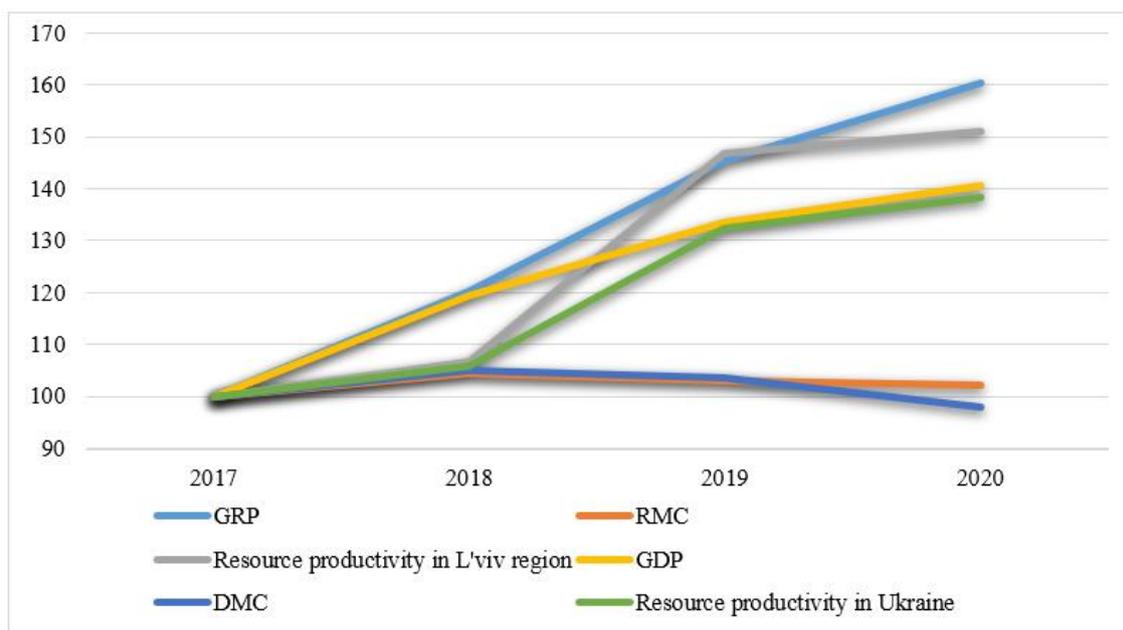
<sup>a</sup> Categories such as forage corn, annual grasses for hay, perennial grasses for hay, limestone and limestone flux and clays for 2020 were calculated as an arithmetic average for 2017-2019.

Source: compiled and calculated by the authors based on State Statistics Service of Ukraine data

The analysis of the resource productivity dynamics of the L'viv region shows the trend of annual growth of this indicator and the achievement of its maximum value in 2020. We only note that RMC in L'viv region remained practically unchanged, and the growth of the resource productivity indicator is observed due to the growth of the GRP of the region. During 2017-2020, the resource productivity of the

region increased by 51%, which is 13% higher than the national indicator.

Comparing the productivity of resources in Ukraine and the L'viv region for the period 2017-2020, we note that the regional indicator over the last three years was higher than its national level (Figure 3). This situation testifies to the significant resource potential of the region and the sufficiently high efficiency of its use.



**Figure 3.** Comparison of resource productivity and its indicators in Ukraine and L'viv region in 2017-2020 (2017 = 100%)

Source: compiled by authors based on Table 3 and Table 4

### Conclusions

Therefore, resource productivity is one of the significant indicators characterizing to what

extent sustainable development tasks are achieved. Since Ukraine is a candidate for membership in the European Union, the implementation of the methods of calculating

resource productivity is only a matter of time. Therefore, evaluating the productivity of the resources of Ukraine's regions in accordance with European practice should become an important task on the way to the implementation of European integration reforms.

The implementation of resource productivity monitoring of Ukraine regions will allow identifying competitive advantages and problems of preserving and using the resource potential of each region in the process of post-war reconstruction of the country. In addition, such monitoring will make it possible to assess the current state of achieving the goals of sustainable development and suggest solutions to improve the efficiency of regions' resource potential use.

However, in order to accept such monitoring in Ukraine, the system of statistical indicators should be improved, in particular, regarding the accounting of foreign trade in physical measures. This is crucial because a significant share of the products produced is aimed at export markets and cannot be included in the internal consumption of resources.

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## Methodological approaches to assessing economic security in foreign trade

### Методические подходы к оценке экономической безопасности в сфере внешней торговли

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#### Abstract

Economic security of foreign trade can be measured through a set of different special indicators with no standardised composition and regulations. The purpose of the study is to analyse the existing methods for assessing the level of economic security in the sphere of foreign trade and to develop an optimal system of indicators for its identification. The research involved scientific publications by national and foreign scholars, official statistical data in the field of Russian export and import as well as the following methods – monography, observation, comparison, economic analysis, analogue and hypothetical modelling. The article assesses various indicators for assessing economic security in foreign trade, applied in Russia and abroad. The authors identified the most informative indicators, proposed a number of threshold requirements for them; included two additional indicators (increment rate of counterfeit goods, share of counterfeit goods in imports), developed a rating-based approach to identify high, average, low, critical and catastrophic levels of economic security in the sphere of export/import operations. Foreign trade

#### Аннотация

Экономическая безопасность внешнеторговой деятельности может быть измерена посредством различного набора специальных индикаторов, состав и нормативы, по которым не являются стандартизированными. Цель исследования – осуществить анализ действующих методик оценки уровня экономической безопасности в сфере внешней торговли и разработать оптимальную систему индикаторов для его выявления. В процессе исследования использовались научные публикации отечественных и зарубежных ученых, официальные статистические данные в области российского экспорта и импорта, применялись следующие методы – монографический, наблюдение, сравнение, метод экономического анализа, аналоговое и гипотетическое моделирование. В статье проведена оценка различных индикаторов для определения экономической безопасности во внешней торговле, применяемых в России и за рубежом. Авторы выявили наиболее информативные показатели, предложили пороговые нормативы для них, дополнительно включили в состав анализируемых индикаторов два показателя (темп прироста контрафакта, удельный вес контрафакта в импорте), разработали

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is an important activity for any state; however, it involves a number of risks and threats to be carefully assessed and minimised. Therefore, it is necessary to select efficient ways of assessing economic security in foreign trade transactions.

**Keywords:** foreign trade balance, import, economic security indicators in foreign trade, threats, economic security in foreign trade, export.

## Introduction

Economic security in the sphere of foreign trade is an important component in the national security system of any state and one of the factors of sustainable economic growth (Nusratullin et al., 2020). Therefore, it is extremely important to assess the level of economic security of foreign trade operations in due time, using a set of certain indicators in order to promptly identify any threats and develop efficient measures to neutralise them.

However, the composition of indicators to be used for identifying the state of economic security in foreign trade is not unified. In addition, no unified standards have been developed for possible indicators that would define a threshold for identifying threats.

Consequently, it is extremely important to monitor expert opinions on the given issue in order to develop an optimal system for assessing economic security of foreign trade operations. At the same time, it should be taken into account that ensuring economic security in foreign trade operations and achieving maximum effect from foreign trade activities may run into collision and mitigate the effects of each other (Ezdina & Dotsenko, 2022).

It should be remembered that foreign trade has a positive effect on economies of states, regions and economic entities:

- facilitates the increment in gross domestic product (GDP) (at the national level), gross regional product (GRP) (at the regional level), revenues and profits (at the level of economic entities involved in foreign trade activities);

рейтинговый подход для выявления высокого, среднего, низкого, критического и катастрофического уровней экономической безопасности в сфере экспортно-импортных операций. Внешняя торговля является важным видом деятельности для каждого государства, однако она сопряжена с рядом рисков и угроз, которые необходимо тщательно оценивать и минимизировать. Поэтому необходимо подбирать эффективные способы оценки экономической безопасности во внешнеэкономических сделках.

**Ключевые слова:** внешнеэкономический баланс, импорт, индикаторы экономической безопасности в сфере внешней торговли, угрозы, экономическая безопасность в сфере внешней торговли, экспорт.

- improves the investment climate in the country;
- allows access to international technologies;
- develops competition, encouraging the national producers to extend the range and quality of products (work, services) (Meliksetyan & Nusratullin, 2017).

At the same time, foreign trade poses the following key threats:

- toughened competition (its globalisation);
- increased market fluctuation in global commodity and financial markets;
- exacerbation of commodity and energy problems due to changes in the structure of global energy demand and consumption patterns for the reason of development of energy-saving technologies, introduction of “green technologies” (Tenyakov et al., 2022), etc.

The aim of the research is to analyse the existing methodologies for assessing the level of economic security in the sphere of foreign trade and to develop an optimal system of indicators for identifying it.

Research objectives:

- to systematise Russian and foreign methodologies for assessing the economic security of foreign trade operations;
- to compile a list of most informative indicators reflecting the level of economic security in foreign trade;
- to propose due standards for assessing the state of economic security of foreign trade activities.

## Literature Review

In Russia, the following indicators are identified by major economic experts for assessing the level of economic security in foreign trade:

- scope and growth/increment rate of exports and imports (Larionova & Shelepov, 2021);
- amount and growth/increment rate of foreign trade balance (Matveeva, 2020);
- foreign trade balance to GDP ratio (GRP for regional foreign trade) (Vartanova, 2021).

This calculation is traditionally used worldwide (Bokeriya, 2019).

The listed indicators in fact allow for prompt assessment of the state of economic security of foreign trade activities. However, they do not provide for ascertainment of a detailed list of threats to foreign trade. Besides, there are no fixed standards for such indicators. For instance, Table 1 reflects the relevant information on Russia's foreign trade operations.

**Table 1.**

*Express assessment of economic security in Russian foreign trade, 2021*

| Indicators                               | Periods of 2021 |             |             |             |
|--|-----------------|-------------|-------------|-------------|
|  | 1st quarter     | 2nd quarter | 3rd quarter | 4th quarter |
| Source data                              |                 |             |             |             |
| Exports, mln USD                         | 93,682.4        | 115,329.3   | 131,847.6   | 151,455.0   |
| Imports, mln USD                         | 62,390.2        | 74,059.8    | 75,140.4    | 81,911.2    |
| Foreign trade balance, mln USD           | +31,292.2       | +41,269.5   | +56,707.1   | +69,543.7   |
| GDP, billion roubles                     | 131,015.0       |             |             |             |
| Average exchange rate of 1 USD, roubles  | 73.6824         |             |             |             |
| Calculated data                          |                 |             |             |             |
| Export growth rate, %                    | -               | +23.1       | +14.3       | +14.9       |
| Import growth rate, %                    | -               | +18.7       | +1.5        | +9.0        |
| Foreign trade balance growth rate, %     | -               | +31.9       | +37.4       | +22.6       |
| Foreign trade balance, billion roubles   | 14,649.0        |             |             |             |
| Ratio of foreign trade balance to GDP, % | +11.2           |             |             |             |

Source: Federal Customs Service of Russia, 2022

Even despite the absence of any unified norms for the given indicators, it is possible to draw a prompt conclusion fixing a number of positive trends in Russia's foreign trade in 2021:

- exports dominated over imports in absolute and relative terms;
- the export growth rate was higher than that of imports (by a significant margin, starting from the 3rd quarter);
- this resulted in foreign trade surplus with a significant growth rate within the year;
- the ratio of foreign trade balance to GDP accordingly proved to be a significant positive value of 11.2 %.

The negative features in Russia's foreign trade operations in 2021 included:

- reduction of export growth rate starting from the 3rd quarter (by more than 8%);
- reduction of foreign trade balance growth rate, starting from the 4th quarter (by almost 15%).

The authors believe that relative indicators with the following threshold values are most informative:

- the exports growth rate and the foreign trade balance values should be not below the annual national price growth rate;
- the imports growth rate should be at least 1% below the exports growth rate;
- the foreign trade balance to GDP ratio should be at least +10%.

## Methodology

The issues of measuring the level of economic security in foreign trade have been investigated by a number of national and foreign learned economists. For instance, the following Russian scholars have proposed a certain set of indicators to assess economic security of export/import operations: Balatsky, E.V., Bokeriya, S.A., Vartanova, M.L., Ezdina, V.I., Dotsenko, E.Yu, Ivanova, A.K., Matveeva, E.E., etc. Among the foreign experts are: Greminger, T., Maitah, K., Rausser, G.,

Rovny, P., Smutka, L., Washington, R. and others.

In the course of the research, a number of papers by the mentioned and other experts were explored and a number of regulatory documents were studied. They formed a basis for the authors' own scientific judgments on feasibility of proposing some specific indicators assessing the state of economic security in foreign trade. At the same time, a logical model for construction of optimal economic relations in this area was developed (including those based on analogies).

The study involved an analysis of certain statistical data on Russian export and import operations (in the first place, the figures published on the official website of the Russian Federal Customs Service).

As a result, the authors applied the following research methods: monography, observation, comparison, economic analysis, analogue and hypothetical modelling.

The research involved the following stages:

1. Analysis of Russian methods for assessing the state of economic security in foreign trade activities.
2. Analysis of foreign methods for assessing the state of economic security in foreign trade activities.
3. Development of unique methodology for assessing the state of economic security in the sphere of foreign trade operations.

## Results and Discussion

It is a well-known fact that Russia's foreign trade is based on the raw-material export model of economic development, which poses many threats to economic security; they are listed in the national Economic Security Strategy until 2030 (Kusurgasheva & Muromtseva, 2020). These threats include:

- depletion of the fuel- and raw-material industries' resource base to the extent the existing deposits are exhausted;
- the absence of Russian non-resource-based companies among the global leaders of the world economy;
- limited scale of Russian non-resource exports due to their low competitiveness, underdeveloped market infrastructure and weak involvement in the global value-added chains, etc. (Grinberg & Pylin, 2020).

Therefore, a number of other complementary indicators should be used for the analysis of economic security of foreign trade transactions.

Some economic experts (including foreign specialists) propose to assess the level of economic security in foreign trade by means of specific indicators:

- export multiplier – the ratio of the national income increment (achieved due to export) to the growth of export as such (Leontyev, 2020);
- kilogram-based price of export – showing foreign exchange earnings per 1 kg of exported finished product weight (this indicator should be used when assessing raw material exports, since the increased raw material export, in terms of economic security perspective, reflects the dependence of the state on the world market situation) (Petrov, 2022).

The export multiplier represents an investment multiplier, since any additional export growth achieved due to the development of foreign demand, other things being equal, systematically leads to increase in production, which generates additional income which, through consumption and investment expenditure, also has an impact on productivity progress. It is useful for assessing the state of the national economy and foreign trade in general. Changes in export multiplier values do not reveal additional threats that can be established after calculating the increment rate of exports, imports, foreign trade balance and its ratio to GDP/GRP. Therefore, it may be neglected in assessing the economic security in the sphere of foreign trade.

The kilogram-based export price actually reflects the quality level of exports: the higher it is the more significant and sophisticated types of finished products (including technologies) are exported by the country (such trade items are more expensive). This has a positive effect on the level of economic security in the sphere of foreign trade. However, this indicator is quite difficult to calculate as it is necessary to have information not only on the value but also on quantitative indicators of export transactions. At the same time, quantitative indicators for different commodity items are not comparable values.

The following three indicators can be used as an identical alternative to the kilogram-based price of export:

- the share of export/import of medium- and high-tech products in the commodity structure of exports/imports (Balatsky, 2019; Kuznetsova, 2017);
- the share of conventional/traditional goods in the structure of exports and imports of goods and services (Kharlamov et al., 2022);
- the share of commercial services in export and import (Rausser et al., 2021).

The above three (structural) indicators mean to reveal the actual existing threats to Russia's foreign trade which cannot be identified by purely calculating the growth rates of export, import, foreign trade balance and the ratio of trade balance to GDP/GRP.

Tables 2 – 3 demonstrate the relevant information on export operations.

**Table 2.**  
*Consolidated exports structure in the Russian Federation, 2021*

| Goods  | USD million | Share, % |
|--|-------------|----------|
| Medium- and high-tech products                                 | 34 385.20   | 7.0      |
| Conventional/traditional goods (including semi-finished goods) | 103 015.4   | 20.9     |
| Commercial services  | 0.0         | 0.0      |
| Unprocessed raw materials                                      | 345 774.9   | 70.2     |
| Non-overt section  | 13 138.8    | 2.67     |
| Total  | 492 314.3   | 100.0    |

Source: Federal Customs Service of Russia, 2022

But irrespective of this division of Russian export into aggregated groups, the indicators reflecting the share of the most important commodity items fall short of the necessary norms, which confirms

the existence of a threat to economic security in the sphere of foreign trade, manifested in the form of heavy bias towards raw-materials-associated aspect of export operations (Table 3).

**Table 3.**  
*Structural indicators of Russian Federation exports, 2021*

| Goods  | Share, % |      | Digression (+/-), % |
|--|----------|------|---------------------|
|  | standard | fact |                     |
| Share of medium- and high-tech exports in the merchandise exports mix                                    | >= 10    | 7.0  | -3.0                |
| Share of conventional/traditional exports (including semi-finished goods) in the merchandise exports mix | >= 50    | 20.9 | -29.1               |
| Share of commercial services export in the merchandise exports mix                                       | >= 10    | 0.0  | -10.0               |
| Number of indicators within the norm   | 0        |      |                     |
| Number of indicators not matching the standard   | 3        |      |                     |

Source: authors' calculations based on Table 2

Tables 4-5 provide relevant information on imports.

**Table 4.**  
*Consolidated imports structure in the Russian Federation, 2021*

| Goods  | USD million | Share, % |
|--|-------------|----------|
| Medium- and high-tech products                                 | 233 951.6   | 79.7     |
| Conventional/traditional goods (including semi-finished goods) | 48103.5     | 16.4     |
| Commercial services  | 3 522.0     | 1.2      |
| Unprocessed raw materials                                      | 7 924.5     | 2.7      |
| Total  | 293 501.6   | 100.0    |

Source: Federal Customs Service of Russia, 2022

Consequently, the analysis of the Russian imports structure points to a threat to the economic security in the sphere of foreign trade

in the form of high level of dependence on imported medium- and high-tech products (Table 7).

**Table 5.**  
*Structural indicators of Russian Federation imports, 2021*

| Goods  | Share, % |      | Digression (+/-), % |
|--|----------|------|---------------------|
|  | norm     | fact |                     |
| Share of medium- and high-tech imports in the merchandise imports mix                                    | <= 10    | 79.7 | -69.7               |
| Share of conventional/traditional imports (including semi-finished goods) in the merchandise imports mix | <= 30    | 16.4 | +13.6               |
| Share of commercial services import in the merchandise imports mix                                       | <=10     | 1.2  | +8.8                |
| Number of indicators within the norm   | 2        |      |                     |
| Number of indicators not matching the standard   | 1        |      |                     |

Source: authors' calculations based on Table 4

Another group of indicators for assessing the state of economic security in foreign trade operations are the indicators that show participation of a number of economic agents in foreign trade:

- share of national foreign investment enterprises (FIE) in export/import (Minakov and Lapina, 2021);
- share of small enterprises in export/import (Ivanova, 2021; Toomsalu et al., 2019).

The authors believe that these indicators are indeed important in terms of assessing the development level of foreign trade and the national economy as a whole. The higher the share of FIE and small businesses in this area:

- the more favourable is the investment climate in the country;

- the higher is the competitiveness of exported products.

As for the foreign methodologies for assessing economic security in foreign trade, economic experts suggest the following calculations in addition to the above-discussed indicators:

- the country's forex/gold holdings and external debt (Smutka et al., 2021);
- external debt to GDP ratio (Shcherbak, 2021);
- external debt to exports ratio (Greminger & Washington, 2022);
- external debt service to exports ratio (Greminger & Washington, 2022);
- the country's official reserves to imports ratio (Grygorieva et al., 2019).

Table 6 presents their original interpretation.

**Table 6.**  
*Summary of selected indicators for assessing the level of economic security in foreign trade, as suggested by foreign economic experts*

| Indicators  | Relevance for assessing economic security in foreign trade   | Possible threshold value                        |
|---|--|---|
| The country's forex/gold holdings and external debt, USD billion, % | It is feasible to calculate some relative indicators:<br>- forex/gold holdings increment rate;<br>- external debt increment rate | not below the annual inflation rate;<br><= 10 % |
| External debt to GDP ratio, %                                       | High relevance   | <= 50 %   |
| External debt to exports ratio, %                                   | High relevance   | <= 100 %  |
| External debt service to exports ratio, %                           | High relevance   | no more than the country's base rate level      |
| The country's official reserves to imports ratio, %                 | High relevance   | >= 120 %  |

Source: original development

In addition, the list of indicators for assessing the state of economic security in the sphere of foreign trade should be supplemented by two more indicators:

- scope and increment rate of counterfeit goods (growth rate standard: 0 %);
- share of counterfeit goods in imports (standard:  $\leq 10$  %).

Ideally, counterfeit goods should exclusively have a negative trend and tend towards zero.

The undertaken research showed that:

1. There exists a basic list of indicators for assessing the level of economic security in foreign trade, recommended for calculation by both Russian and foreign economic experts. These indicators include: scope and growth/increment rate of exports and imports; volume and growth/increment rate of foreign trade balance; foreign trade balance to GDP ratio (for regional foreign trade – to GRP). The authors believe that only relative indicators are appropriate for practical usage.
2. Some indicators for assessing the state of economic security in foreign trade operations are too ponderous and inconvenient, as concerns the calculation algorithm, and their values are not uniquely informative (other, more appropriate indicators can be used

instead). The authors believe that it is appropriate to assess: the share of export/import of medium- and high-tech products in the commodity structure of export/import; the share of conventional/traditional goods in the export and import structure of goods and services; the share of commercial services in export/import.

Most of the indicators proposed by the Russian and foreign experts do not have threshold values (standards).

The authors of the present paper have attempted to propose them.

3. In the authors' opinion, the list of the explored indicators assessing the level of economic security in the sphere of foreign trade should be supplemented with two more indicators characterising the level of economic crime in foreign trade: the volume and increment rate of counterfeit goods; the share of counterfeit goods in imports.
4. In order to form a holistic view of the state of economic security in the sphere of foreign trade operations, as viewed by the authors, it is necessary to apply a rating score based on significance of particular indicators for assessment (Table 7).

**Table 7.**

*Proposed rating score for assessing the level of economic security in foreign trade*

| Indicators  | Score assigned when the standard is met | Rating interpretation                  |
|---|---|--|
| Exports growth rate, %  | 5                                       |  |
| Imports growth rate, %  | 5                                       |  |
| Foreign trade balance increment rate, %   | 5                                       |  |
| Foreign trade balance to GDP ratio, %   | 5                                       |  |
| Share of medium- and high-tech exports in the merchandise exports mix, %                                    | 10                                      | Score from 80 to 100:<br>high level    |
| Share of conventional/traditional exports (including semi-finished goods) in the merchandise exports mix, % | 8                                       |  |
| Share of commercial services exports in the merchandise exports mix, %                                      | 3                                       | Score from 60 to 80:<br>medium level   |
| Share of medium- and high-tech imports in the merchandise imports mix, %                                    | 10                                      | Score from 50 to 60:<br>low level      |
| Share of conventional/traditional imports (including semi-finished goods) in the merchandise imports mix, % | 7                                       |  |
| Share of commercial services import in the merchandise imports mix, %                                       | 2                                       | Score from 30 to 50:<br>critical level |
| Forex/gold holdings increment rate, %   | 5                                       |  |
| External debt increment rate, %   | 5                                       | Score below 30:<br>catastrophic level  |
| External debt to GDP ratio, %   | 5                                       |  |
| External debt to exports ratio, %   | 5                                       |  |
| External debt service to exports ratio, %   | 5                                       |  |
| The country's official reserves to imports ratio, %   | 5                                       |  |
| Counterfeit goods increment rate, %   | 5                                       |  |
| Counterfeit goods share in imports, %   | 5                                       |  |
| Total   | 100                                     |  |

Source: original development.

## Conclusions

The proposed rating score will allow for rapid identification of threats to economic security in foreign trade and for proper comparative analysis for different states.

It should be borne in mind that the presented indicator threshold values and rating scores were obtained by expert judgment within the framework of analogue and hypothetical modelling. In particular, the authors believe that the main driving force increasing the level of economic security in the sphere of foreign trade is the growing exportation of medium- and high-tech goods as well as conventional/traditional goods, with a corresponding decrease in importation of the above commodity items. It is this trend that will automatically ensure a positive foreign trade balance and its sustainable increment. Therefore, the greatest score is assigned to the below indicators meeting the proper standards:

- the share of medium- and high-tech exports in the merchandise exports mix;
- the share of conventional/traditional exports (including semi-finished goods) in the merchandise exports mix;
- the share of medium- and high-tech imports in the merchandise imports mix;
- the share of conventional/traditional imports (including semi-finished goods) in the merchandise imports mix.

Most of the other indicators are of equal major importance; therefore, they are assigned an equal score upon meeting the relevant standards.

Assessment of the economic security level of foreign trade activities needs a most informative approach with observance of the following conditions:

- the due set of indicators makes it possible to identify all negative trends and dangers in a prompt manner;
- there exist well-defined standards (threshold values) for each indicator;
- there is a due possibility to draw a comprehensive conclusion on the state of economic security in foreign trade.

The set goal was achieved in the course of the research through solving the outlined objectives.

The authors, assessing the state of economic security in the sphere of export/import operations, proposed an optimal set of indicators

with threshold standard values as well as a relevant rating-based approach.

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## Ecologization of education in the innovative space of higher education

### Екологізація освіти в інноваційному просторі вищої освіти

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#### Abstract

The new content of the ecologization of education is considered, the goal is formulated and the possibilities of ecologization of education in the innovative space of higher education are shown. Definitions are interpreted: ecologization, ecologization of education in the innovative space of higher education; the main goals of ecologization of education and the main components and most important tasks of ecologization of education in the innovative space of higher education are highlighted (formation of ecological culture for all segments of the population; training of ecological specialists for the educational field and various branches of the national economy; in the field of ecological studies: improvement, standardization, harmonization of terminology. Three main types of spiritual values were identified. The main principles of ecologization of education in the innovative space of higher education and two interrelated components (promotional, content-informational) are singled out. The relevance of educational, cultural, and educational functions of ecologically oriented

#### Анотація

Розглянуто новий зміст екологізації освіти, сформульовано мету та показано можливості екологізації освіти в інноваційному просторі вищої освіти. Потрактовано дефініції: екологізація, екологізація освіти в інноваційному просторі вищої освіти; виокремлено головні цілі екологізації освіти та основні складові й найголовніші завдання екологізації освіти в інноваційному просторі вищої освіти (формування для всіх верств населення екологічної культури; підготовка фахівців-екологів для освітньої галузі (викладачів) та для різних галузей народного господарства; у галузі екознань: вдосконалення, стандартизація, узгодження термінології. Виявлено духовні цінності трьох основних типів. Виокремлено головні принципи екологізації освіти в інноваційному просторі вищої освіти та дві взаємопов'язані складові (пропагандивна, змістовно-інформаційна). Наголошено на актуальності виховної, культурної, освітньої функцій еколого-орієнтованого блогінгу та показано ефективність використання проектних

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blogging is emphasized and the effectiveness of using project technologies in the formation of the ecological worldview of a higher education student, which contributes to the realization of the comprehensive development of the individual as a person and the highest value of society, is shown.

**Keywords:** ecologization of education, innovative space of higher education, ecological outlook, ecological culture, principles of ecologization.

### Introduction

The third millennium is characterized on the one hand by the accelerated development and innovation of technology, science, and the latest information and communication technologies, and on the other by the state of the world's global ecological crisis. Over the past century, an artificial powerful system has formed in the biosphere – the technosphere, which includes transport, industrial facilities, urbanized communal complexes, and the agricultural sector. Today, the activities of mankind are aligned with the forces of the elements, which have led to the destruction of the mechanisms of self-regulation of Nature, the destruction of many types of natural resources, and the circulation of substances and energy. The consequence of such natural destruction is the degradation of ecosystems, which progresses and can become unpredictable and irreversible for the entire planet (Biliavskiy, 2006). Therefore, a new position is necessary about ecological education, which should be established at the current stage of reforming the educational sector. Ecologization of education in the innovative space of higher education is considered as a process of human socialization, its adaptation to existence in an urbanized environment in the conditions of the development of an informational, balanced, civil, sustainable society. This approach to the problem of ecologization of education in the innovative space of higher education allows us to consider it as a new educational field with extracurricular functions because it forms two value orientations – the relationship to the internal environment of the individual himself, his health, and the relationship of Man to the natural and artificial, external, surrounding environment. Ecologization of education in the innovative space of higher education should study not only natural objects but the relationship of mankind to them, influencing the norms of preference, ethical, aesthetic goals, and legal ideals. Ecological education promotes a new universal

технологій у формуванні екологічного світогляду здобувача вищої освіти, що сприяє реалізації всебічного розвитку особистості як Людини та найвищої цінності суспільства. Розроблено рекомендації щодо застосування основних методів екологізації освіти в інноваційному просторі вищої освіти.

**Ключові слова:** екологізація освіти, інноваційний простір вищої освіти, екологічний світогляд, екологічна культура, принципи екологізації.

human value – concern for the noosphere, ecological quality of the environment (the most important essence of the individual in the 21st century) and tries to reveal the limitations of the consumer lifestyle of a person (Saienko & Boichenko, 2013).

Ecologization of education in the innovative space of higher education focuses on the search for new innovative means of the coexistence of the world of culture and the world of nature, provides prospects for the organization of quality knowledge, and leads to an understanding of the paths of joint human evolution. In this process, cognitive models or ecological cognitive orientations play an important role, because with their help it is possible to distinguish levels of reality, which, at a certain historical stage of the social development of the world, reflect the levels of interaction between nature and man (Pustovit et al., 2016).

Therefore, the ecologization of education in the innovative space of higher education is intended to foster a sense of responsibility for one's actions and deeds in the field of professional work and everyday life, to lay the worldview of a modern personality, to contribute to the rethinking of its productive place in nature. Therefore, the global pedagogical community speaks of the importance of the content of their professional training in the professional training of future specialists of all specialties of ecologization (Siaska, 2021).

### Literature Review

O. Bida, I. Oros, & V. Honcharuk revealed the main foundations of the formation of ecological culture for the young generation. Scientists have developed not just ways of learning for the younger generation, but have connected it with ecological education and presented it as an individual process that is necessary for

personality development. The ecological culture was presented as a complex of objectifications and subjectifications, which in the process of cross-cultural education should be assimilated and used in everyday orientation. The most important function of the ecological culture of mankind is that it is a way by which society solves the main problems that exist in the world (Bida et al., 2020).

V. Prusak (2020) developed the basics of ecologization of education in the innovative space of higher education and created the concept of continuous ecological training of specialists. A continuous educational system of ecological training of future specialists has been developed and theoretically substantiated, taking into account general scientific approaches with the following components: methodological approaches, leading ideas, scientific and pedagogical approaches, principles (specific and general), pedagogical conditions, forms, methods, and means. Their positive influence on the training of future specialists, being in a single complex, has been proven. The author's structural-functional model was designed, and the stages of continuous ecological training of future specialists were displayed. Pedagogical conditions for the formation of the designer's ecological competence and the method of implementing a pedagogical continuous system of ecological training of future specialists are proposed.

I. Siaska (2021) analyzed the professional training of future science teachers and substantiated the theoretical and methodological basis of the formation of their ecological competence in the educational process of higher education institutions. developed the concept (theoretical, methodological, methodical level), designed the structure and content of the system for the formation of ecological competence of future specialists and, with the help of introducing the conceptual model into the training process, carried out its approbation, determined the conditions for its implementation in the process of professional training. She showed the functions, revealed the essence, outlined the structure, proved the effectiveness of the ecological competence of future specialists, and substantiated the stages of its genesis in the process of professional training.

O. Bida, T. Zorochkina, I. Oros, O. Kuchai, A. Chychuk, & T. Kuchai (2021b) studied, designed, revealed the essence of the structure of health-preserving activities of higher education students; showed the real state of the problem of

the formation of the ecological culture of the students of education; in the educational process of the educational institutions, they developed, formulated, scientifically substantiated, specified the pedagogical conditions for effective health-preserving activities of the students of higher education.

N. Pustovit, O. Kolonkova, O. Prutsakova, G. Tarasiuk, & Yu. Solobai (2016) designed, revealed the essence, scientifically substantiated the theoretical principles, determined pedagogical conditions, and characterized practical approaches to the ecologization of the educational space of an educational institution. We considered a valuable educational space, a system of components connected by the ideas of sustainable development of society, ecological responsibility, ecological safety of the environment, preservation of biodiversity, valuable attitude to nature, and frugal resource consumption. For educational institutions, educational programs have been developed that reflect modern trends in ecological pedagogy in a spatial approach, and the main organizational approaches to everyday activities and the ecologization of family leisure have been presented.

T. Saienko, & S. Boichenko (2013) found out the relevance and importance of the development of the higher ecological education system in technical universities, analyzed the determining factors for the sustainable (balanced) development of the education component and the formation of a harmonious, harmonious, ecologically safe society. They proved that in times of global ecological crisis, the spread of eco-pedagogy is the main condition of the process of transformation of society in the direction of noospherogenesis. They analyzed the factors of activation of the informal sector of education, eco-auditing, and eco-management, formed the necessary positions in the educational process for the development of psychological and pedagogical foundations of information and didactic support, based on the ecological imperative, showed ways of cooperation with religious institutions, and proved the importance of developing a system of compliance with the requirements of ecological culture, ethics, ecological outlook.

V. Isaienko, K. Babikova, Yu. Satalkin, & M. Romanov (2019) considered the interdisciplinary system of methodological, theoretical, and technological knowledge for training engineers of synergistic innovation competence in engineering ecology, which for

the period up to 2030-2050 is oriented to the trends of innovative global and ecological imperatives; developed models of technological synergism. The synergistic foundations of ecological engineering, infrastructure, and system engineering ecologization of production are revealed. The foreign experience was studied and progressive ideas on the investigated problem were singled out; a system model of sustainable development of an ecologically clean enterprise was developed; the essence of aerospace technologies of ecological engineering is revealed. Structural components of professional competencies have been developed for specialists of various branch specializations to form models of integrated engineering and ecological competence in the specialty "Engineering Ecology".

L. Fenchak (2011) indicated axiological guidelines in the development of the personality of the future teacher, based on the principles of axiology, the peculiarities of the formation of the ecological culture of future specialists were considered. For future primary school teachers, an analysis of the state of the formation of ecological culture during their preparation for professional activity was made based on axiology.

Ways of forming personal values in the field of education are considered, at the current stage of the formation and development of pedagogical education, where considerable attention is paid to substantiating the system of ecological culture formation of future specialists on axiological principles, the conditions for its successful implementation are determined; the psychological-pedagogical mechanism of the formation of the appropriate quality in the students of education, who form the ways of independent life activity, was investigated.

A. Kuzminskyi, O. Kuchai, O. Bida A., A. Chychuk, I. Sihatii, & T. Kuchai (2021) in higher education institutions indicated the main ways of innovative training of specialists in the conditions of distance learning, identified the characteristic features of distance learning, showed the advantages of distance learning in the preparation of students of education, ways of ecologization of education in the innovative space of education, found out the conditions of high-quality distance learning: the presence of students of education accounting for psychological patterns of perception, attention, memory, computer literacy, psychological comfort, age characteristics of students of education, personal and individual

characteristics, the ability to dialogue by means of information technologies, an individual approach, systematic control, organized self-control, generalization of knowledge, mastering the skills of independent work, ensuring the interaction of the components of the distance learning system.

O. Bida, A. Chychuk, O. Kuchai, V. Honcharuk, & T. Kuchai (2022) revealed the concept of "ecological competence", showed its essence, and substantiated the structural components of the formation of ecological competence for future biology teachers. Among the future teachers of natural sciences, the levels of the formation of ecological competence were identified. The concept of the formation of ecological competence has been developed for future biology teachers. The main idea of the concept is to develop and substantiate such a system for the formation of ecological competence of future biology teachers, the purpose of which at the strategic level is the functioning and creation of an ecologically oriented environment, the implementation of which in the educational process is the system-integrating basis of the formation of the pedagogical phenomenon and modernizes, rationalizes, modifies the educational content of professional training. Pedagogical conditions for the realization and development of the studied ability in the process of professional training are presented. The system-integrating basis of the formation of ecological competence is methodologically substantiated, and the ways of ensuring the professional training of future biology teachers are proposed.

M. Diachenko-Bohun, V. Onipko, & V. Ishchenko (2019) developed methodological recommendations for the implementation of ecological education for students in the field of training: 101 "Ecology" by the program of the course "Theory and Practice of Ecological Education" and designed for the preparation of students of the educational degree "master". The authors presented theoretical material that will help future specialists to better study theoretical issues from the academic discipline "Theory and Practice of Ecological Education", as well as to master practical work skills, to form among students of education the concept of modern principles of continuity of ecological education; equip them with skills and knowledge necessary for the formation of ecological culture, worldview, ecological innovative thinking, consciousness; development of methods of ecologization of the educational space, skills of educational and research activities.

O. Bida, I. Oros, & T. Kuchai (2021a) proved the innovative composition of culture by proposing four main elements: rules and norms, values, notions (concepts), and relations. It has been shown the extremely important role of each of these components in ecological education, creating the cultural image of specialists. The main function of culture is the method by which the whole society solves problems. Taking into account the current world trends, the authors proved the importance of the formation of ecological culture in students of education.

**The purpose of the study:** to consider the new content of the ecologization of education, formulate the goal and show the possibilities of ecologization of education in the innovative space of higher education.

### Methodology

The following research methods were used to solve the tasks: theoretical – analysis of normative documentation, psychological-pedagogical, philosophical, and methodical literature, educational publications on the research problem; generalization, comparison, systematization of pedagogical experience, theoretical and methodological principles, organization of educational and game activities of ecologization of education – to clarify the content of the key concepts of research, clarification in practice and theory of the current state of research of the problem; empirical – modeling, analysis of pedagogical best practices, generalization of independent characteristics – to substantiate the ecologization of education in the innovative space of higher education, the methodology of forming the readiness of future specialists to consider this problem.

The research was carried out using the following approaches:

- scientific – covers the main concepts, theories, and regularities that condition and characterize relations and show interaction in the "society-nature-man" system. When using the approach, the ecological knowledge acquired by the students of higher education, which they acquire, should be based on provisions verified not only by science but also by practice, that is, scientific. It is worth taking into account the peculiarities of modern progress, in which one of the main problems arises, which consists in the availability of a large amount of scientific information, which, the further

the progress of society goes, the more often it outstrips the possibilities of learning;

- noosphere approach – is based on nature-based education and training, which is aimed at the development of a holistic worldview, synthetic thinking, the spiritual and moral sphere of the individual, ecological awareness, the identification of an effective tool for choosing a personal place in the "society-nature-man" system, the ability to choose morally – available means of education, setting goals and achieving them, forecasting the consequences of one's activities;
- systemic approach – in the institution of higher education, ecological education is taken into account as a component or element of the system of continuous ecological education; on its basis, decisions are made in the process of implementation, design, management of pedagogical systems in general and, in particular, ecological education;
- cultural approach – considers the ecologization of education in the innovative space of higher education in the context of the unity of natural-scientific and humanitarian knowledge, as a result of the cultural-historical development of mankind; examines the content of ecological education based on accumulation and preservation of traditions, continuity, historical experience of ecological traditions of the people;
- value approach – is based on the formation of theoretical-cognitive, spiritual prerequisites, moral-ethical attitudes to the problem of ecologization of education in the innovative space of higher education, the environment both in everyday life and in professional activity;
- normative approach – aimed at the implementation and assimilation of the system of laws, ecological norms, rules, and prescriptions regarding the behavior and activities of each individual, both as a specialist in particular and as a citizen in general;
- co-evolutionary approach – the transition of the "Man – biosphere" system is based on the understanding by the conquerors of the remaining space that they must ensure their future not only by changing the biosphere, (i.e. the transformation of the biosphere into the noosphere) by adapting it to their needs, but also by adapting to a state of dynamically stable integrity, to the objective requirements of nature, symbiosis. Above all, ecological and moral imperatives help to

ensure this process, and a person should follow such a position. The first imperative means a set of prohibitions on all such types of human activity, production that is incompatible with the very existence of humanity, saturated with irreversible changes in the biosphere. The second imperative requires turning the worldview towards universal human values, changing the worldview of people, a sense of respect for any life, a reassessment of traditional consumer ideals, and the ability to prioritize not private, but general interests.

- activity approach – consists in the application of practical skills of ecologization of education, ecological household, and professional activities; provides for the creation of innovative conditions, not just the transfer of ecological knowledge, but with the help of innovative and traditional technologies, the entire process of ecologization of education is modeled in the innovative space of higher education, the real content of the activities of education seekers in society and nature is reproduced;
- competence approach – consists in the content of professional education serves as a guide of ecological culture, is based on the formation of ecological competence, in the technology of education ensures the implementation of developmental and personal functions, and creates motivation for value orientation in education.

## Results and Discussion

The development of ecological awareness and the ecologization of education determines human behavior, ecological culture, and activity. Through consciousness, a person reveals his attitude to his environment, can adapt to his own needs, change nature, and adapt to the surrounding world.

In the relationship between society and nature, there is an aggravation of contradictions and a worsening of the ecological situation in the world, which causes alarm, such a situation leads to a violation of the ecological balance and ecological disasters. A way out of the current situation requires the combined efforts of humanity, significant economic and social transformations. Harmonization of such relationships can only be a result of the ecologization of education in an innovative educational space, and the development of ecological awareness of society. Therefore, significant importance should be attached to the

formation of ecological awareness of teachers and students during the educational process in higher education institutions. The ecological state of the modern planet has caused the deepening and expansion of the methodological basis in educational practice and sees the solution to this problem at the level of education (Vlasenko, 2020).

Ecologization is a process:

- focused on the improvement and preservation of the quality of the natural environment, on the implementation of ideas in the field of sustainable environment legislation, management and preservation of nature, development of technologies, education, economy, etc.;
- consistent implementation of systems of legal, managerial, technological, and other solutions that make it possible to reduce the anthropogenic load on the natural environment, and increase the efficiency of the use of natural resources;
- leads to the concrete implementation of ecological requirements in various spheres of human activity, and not only denotes a phenomenon for the protection of the biosphere from anthropogenic influence.

The main goals of the ecologization of education in the innovative space of higher education are:

- use of zero-waste technologies and closed cycles of resource consumption;
- using improving and preserving the properties of the natural environment – optimizing the living conditions of mankind;
- rational use of natural resources, ensuring their restoration, protection, and extended reproduction;
- preservation and protection of the gene pool of the animal and plant world (Pustovit et al., 2016).

At the current stage of the development of society, the ecologization of education in the innovative space of higher education is formulated as:

- new nature-centric life orientations, complex interdependent connections in the environment;
- an educational and educational system-complex process of formation of worldview, ethics, ecological thinking, and culture through the assimilation of skills, ecological knowledge, and skills about the role and place of man in the biosphere environment;

- the factor of realization of higher education, development of the biosphere – noosphere, for a balanced, sustainable society;
- harmonization of relations between Nature and society, overcoming global and regional ecological crises.

The goal of ecologization of education in the innovative space of higher education: training of future competitive specialists who can choose ecologically appropriate economic and social development strategies, solve complex ecological problems in the conditions of an ecological crisis, develop ecological protection measures, effective resource-saving technologies by the ecologically safe, balanced development of society as whole and individual territories.

Let's highlight the main components of the ecologization of education in the innovative space of higher education. This is informal and formal education. Higher and postgraduate education are components of formal education, which are the progress of modern educational changes because they prepare civil servants of all levels, managerial staff, employees of local self-government bodies, etc.

The national nature of ecological education reflects one of the directions of rational nature use, international strategy on the problems of the natural environment in the field of education, nature reproduction using informal and formal education, ideas of humanism, democracy, rich folk traditions, systematicity, systematicity, continuity of self-improvement of the individual, interdisciplinary ecological education (Saienko & Boichenko, 2013).

Let us single out the most important tasks of ecologization of education in the innovative space of higher education:

1. The formation of ecological culture for all segments of the population, which includes:
  - fostering an understanding of modern ecological problems of the world and the state, awareness of their relevance, importance, and universality;
  - formation of awareness of the futility of the technocratic idea of necessity and the development of its replacement with an ecological one, which is based on the global complex-organized system of harmonious development and coexistence on the understanding of the unity of all living and non-living things;

- education towards the native nature of love, revival in mutual relations with the environment of the best traditions of the Ukrainian people;
- the development of individual responsibility for the state of the environment at the global, national, regional, and local levels, the ability to forecast the activities of teams and other people, as well as personal activities;
- formation of an understanding of the mandatory coordination of the human strategy and the strategy of nature based on overcoming the consumerist attitude towards nature, the idea of self-limitation, and the universality of natural connections;
- development of skills to preserve one's health and foster a deep respect for it;
- mastering the norms of ecologically competent behavior, developing the ability to make (significant, responsible) decisions regarding ecological problems.

2. Training of ecological specialists for the educational sector (teachers, teachers) and various branches of the national economy:

- in the field of rational nature management and ecological protection;
- public ecological organizations;
- for state management bodies.

3. In the field of ecological studies: improvement, standardization, and harmonization of terminology (Diachenko-Bohun et al., 2019).

Modern society poses challenges to ecological education that cannot be solved without appropriate professional training of future specialists in the innovative space of higher education. Professional training requires the provision of cultural individual development of the personality, and not only the acquisition of relevant skills and knowledge by future specialists. In the development of the spiritual culture of an individual, education plays a special role in higher educational institutions, as it contributes to ensuring the transmission of national traditions, values, ideas, knowledge, and skills from one generation to another.

An important link in the development of future specialists in ecological culture is professional training and the acquisition of skills in the formation of ecological culture in their students and employees.

Taking into account the fact that the content of ecological culture is foreseen by the new concept

of the development of higher education and the formation of ecological culture in future specialists is a part of professional training, there is a need to objectively make effective changes in the methods of training specialists, the content of training by their future activities. The level of morality and culture of people and their attitude to nature will depend on the quality of training of future specialists.

In the formation of ecologization of education in the innovative space of higher education, we will identify spiritual values of three main types:

- 1) traditional universal moral norms that regulate people's activities, constitute a kind of algorithm, perform the function of stabilizers of society;
- 2) mobile, dynamic values determined by the changing socio-cultural environment. The constant change of positive meanings is their feature, which in specific conditions have their moral justification, social and historical;
- 3) values-innovations, their emergence is connected with the emergence of new ecological and socio-cultural situations. It is they who should form systemic ecological thinking in new social realities, taking into account the hierarchy of values-regulators of individual, purposeful, mass activity (Fenchak, 2011).

Ecologization of education in the innovative space of higher education is considered as a continuous process that covers all professional, social, and age groups of the population and is based on the following principles:

- integrity, because ecologization of education in the innovative space of higher education occurs as a pedagogical integral process; at all educational levels provides for the implementation of stages and directions of educational work; is aimed at the formation of a person's holistic picture of the world, at the versatile and harmonious development of the personality; covers all spheres of life of education seekers; is carried out in educational activities of all social institutes and outside educational activities;
- acmeological involves the creation of conditions for optimal self-realization of a person, the orientation of the educational process towards achieving the highest moral and spiritual development by the student of higher education; improvement of abilities and disclosure of individual capabilities in interaction with nature; predicting the consequences of one's actions; formation of skills to mobilize all one's strength to overcome contradictions and difficulties of interaction with nature; the ability to make ecologically appropriate, conscious decisions;
- preventiveness provides educational influences aimed at preventing the destructive behavior of higher education students about the activities of nature; implementation and development of a system of measures with elements of an economic, ecological, social, and legal nature aimed at the constructive solution of ecological problems and the formation of ideas about cause-and-effect relationships in the interaction of man with nature;
- meaningful self-activity in life involves the formation of the student of education as a designer and creator of his life, who in interaction with nature knows how to make independent decisions and be responsible for them, actively act and live fully in the dynamic conditions of life, respond adequately and flexibly to social changes, constantly improve himself (Pustovit et al., 2016);
- systematicity, systematicity, and continuity, which create organizational conditions for the formation of the ecological culture of the individual between individual links of education, the unity of informal and formal education of the population;
- focus on the universality of all connections of natural processes and components; the idea of the integrity of nature;
- an interdisciplinary approach to the formation of ecological thinking in the innovative space of higher education, which involves the logical subordination of personal knowledge to the main goal of ecological education, the combination and logical deepening of systemic natural knowledge;
- the relationship between global and national thinking, which contributes to the understanding of ecological problems at various levels;
- the local studies principle of ecologization of education in the innovative space of higher education should be laid as a basis and improved;
- objectivity and specificity of skills, abilities, and knowledge;
- a combination of ecological highly professional knowledge with universal high moral values, synthesis of socio-humanitarian and natural-scientific knowledge.

Based on the principles of beauty and goodness, consciousness and reason, universalism and patriotism, compliance with ecological law and scientific knowledge, ecological education in the relationship between man and nature is aimed at combining the rational and the emotional (Diachenko-Bohun et al., 2019).

The work on the ecologization of education in the innovative space of higher education of education seekers should combine two interrelated components:

- 1) promotional component: acquisition of the values of a healthy lifestyle by those obtaining higher education;
- 2) practical and content-informational plane: identification and acceptance by higher education students of knowledge and acquisition of skills and abilities necessary for independent fulfillment of requirements and transfer of knowledge to others in future professional activities (Bida et al., 2021b).

We note the low level of ecologization of education, which depends on the low quality of ecological training of specialists. Currently, prerequisites have been created for the ecologization of education, and it is very important in institutions of higher education to increase the level of ecological thinking of students of education, ethics, consciousness, and culture of both students of education and teachers. Currently, the conditions and ways of involving all countries in the development and formation of the global market of ecological services and goods are being developed, the capacity of which with an annual increase of about 1% is estimated at \$ 20 billion in the countries of Eastern Europe. In the first half of the XXI century. we observe ecological products up to 40% of global production, as well as an increase in ecologically clean energy and ecological technologies (Saienko & Boichenko, 2013).

As methods and ways of improving the ecologization of education in the innovative space of higher education, as a factor in the implementation of education throughout life for balanced personality development, we offer solutions to the following tasks that make the transition:

- to the competence paradigm of education from the cognitive one;
- to education: balanced, active, co-creative, socialized (from passive education);

- from fragmentary to end-to-end, continuous, systematic, systemic;
- from ecological protection to moral-ethical, effective-responsible, worldview-value.

We consider the main tasks of ecologization of education in the innovative space of higher education to be:

- promoting the development of ecological thinking based on skills, knowledge, skills, ecological education;
- improvement of ecological knowledge in the theory and practice of ecological activities;
- the creation of an ecological outlook, properties, self-improvement, personal abilities, and ecological thinking based on systemic professional knowledge;
- education of ecological ethics, the main component of professional development, executive-practical, scientific-educational activity;
- the formation of ecological culture – the synthesis of ecological skills, abilities, knowledge, practical activities, and education aimed at preserving one's health and the entire environment.

We see the new meaning of ecologization of education in the innovative space of higher education "in a system-complex (holistic) view of the world of Nature with an ecocentric type of consciousness, the psychological inclusion of Man in Nature, with its subjective nature of perception and non-pragmatic interaction with all natural objects, including with people; understanding the global economic crisis as a crisis of general culture; education based on the elements of natural beauty, the Ukrainian national tradition of nature use, nature reproduction, ecological life" (Saienko & Boichenko, 2013).

To ensure effective ecological and educational activities, it is necessary to use the world of communications. With the development and in general, with the emergence of mass media, there is a need to use them for the ecologization of education in the innovative space of higher education, since they play an important role in spreading ecological knowledge among the population. In the formation of an ecologically oriented worldview, journalism and blogging of a wide viewing and reading audience play a leading role. The educational, cultural, and educational functions of ecologically oriented blogging are becoming more relevant as the importance and complexity of ecological problems are realized. To ensure a high-quality

innovative space of higher education, in which students will receive information from various fields about global ecological trends, from eco food and sustainable fashion to renewable energy and electric cars, educators should turn not only to Internet resources but also to tips, the Internet – page, mass media.

Demonstrates the effectiveness of the use of project technologies in the formation of the ecological worldview of a higher education student and promotes the realization of the comprehensive development of the individual as a person and the highest value of society, his creative, intellectual, physical abilities, talents, the formation of competencies and values necessary for self-realization (Polishchuk et al., 2022).

Let's emphasize the importance of one of the effective forms of implementing the ecologization of education in the innovative space of higher education: excursions along ecological trails that facilitate familiarity with local vegetation and animal life, allow you to observe landforms, see the consequences of anthropogenic impact on natural landscapes (positive and negative) and personally be a participant in nature protection affairs (Stratan-Artyshkova et al., 2022).

We recommend the main methods of ecologization of education in the innovative space of higher education:

- fostering a responsible attitude towards nature;
- use of informational computer technologies: multimedia accompaniment of classes, educational videos;
- involvement of higher education students in carrying out scientific and research work on the ecological state of the environment, in working on scientific projects of ecological direction;
- the use of interactive methods during training sessions: training, discussion, role-playing, project method, brainstorming, etc.;
- the use of educational tasks in the field of ecological protection during educational practice;
- consideration of topics of ecological content during the study of professional disciplines;
- creation of campaign teams, involvement of education seekers in active campaigning work on ecological protection among the population;
- active participation of students of higher education in the improvement and greening

of the territory of the institution of higher education and the territory of the city;

- increasing the scope of independent work of education seekers: participation in ecological circles, speeches at seminars and conferences, etc.;
- conducting ecological weeks, photo exhibitions, issues of ecological booklets and newspapers, etc (Ishchenko et al., 2022).

## Conclusions

Taking into account the modern trends of the world, the modern problems of nature protection and education are of particular importance, therefore, the formation of an ecological culture among students of education, their preparation for ecological education, and ecologization of education in the innovative space of higher education is an urgent problem and requires new approaches to its solution. (Akseonova et al., 2020).

The ecological culture of future specialists contributes to humanity's turn to a frugal and restorative way of life and moves away from consumerism because it is possible to instill a love for the environment, beauty, and health in educational institutions (Kuchai, 2010).

So, first of all, we must take into account the relationship between man and nature, solving the ecological problems of today. We consider ecological protection to be the most important task of European integration. At the national and international levels, we consider the establishment of the priority of humanistic values and ideals in relationships between people and in their relationship with the environment to be the most important condition for the sustainable development of society (Honcharuk, 2019).

The new content of the ecologization of education is considered, the goal is formulated and the possibilities of ecologization of education in the innovative space of higher education are shown.

Definitions are interpreted: ecologization, ecologization of education in the innovative space of higher education; the main goals of ecologization of education and the main components and most important tasks of ecologization of education in the innovative space of higher education are highlighted (formation of ecological culture for all segments of the population; training of ecological specialists for the educational field (teachers, teachers) and various branches of the national

economy; in the field of ecological studies: improvement, standardization, harmonization of terminology).

Three main types of spiritual values were identified (traditional moral universal norms; mobile, dynamic values; values-innovations). The main principles of ecologization of education in the innovative space of higher education and two interrelated components (promotional, content-informational) are singled out.

The relevance of educational, cultural, and educational functions of ecologically oriented blogging is emphasized and the effectiveness of using project technologies in the formation of the ecological worldview of a higher education student, which contributes to the realization of the comprehensive development of the individual as a person and the highest value of society, is shown.

Recommendations on the application of basic methods of ecologization of education in the innovative space of higher education have been developed.

We see the prospects for further research in the clarification of the possibility of ecologization of education in the innovative space of higher education.

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## Architectural conservation of the rock-hewn churches of Lalibela, Ethiopia: A study on preservation and socio-economic conservation

### Conservation Architecturale Des Églises Taillees Dans La Roche De Lalibela, Éthiopie: Une Étude Sur La Préservation Et La Conservation Socio-Économique

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#### Abstract

The 11 monolithic structures that makeup Ethiopia's Rock-Hewn structures in Lalibela were painstakingly cut out of solid rock in the 12th century. Currently, these churches are facing various issues of deterioration such as exposure to natural and human-caused harms. This article critically evaluates the architectural conservation initiatives made to preserve these amazing buildings, which are often recognized as some of the most astounding architectural accomplishments in history. It carefully examines the preservation techniques used, highlighting their cultural relevance and the inherent values crucial for maintaining the Lalibela rock-hewn churches. Through the socio-economical aspects, it draws attention to the lack of funding and lack of technical requirements. Also, sustainable conservation activities develop a sense of ownership and bring awareness to the value of protecting cultural heritage. The report suggests methods for strengthening capability and creating a special conservation fund. The study uses a qualitative research methodology focusing on in-depth case studies from Lalibela, other rock-cut structures, and published academic works. As a result, this research offers valuable suggestions to encourage efficient conservation techniques. Finally, these observations contribute to a greater comprehension of the challenges in preserving the world's architectural legacies by providing helpful references for analogous sites facing similar conservation challenges.

**Keywords:** Cultural heritage, Conservation, Preservation, Ethiopia, Rock-Hewn churches.

#### Abstrait

Les 11 structures monolithiques qui composent les structures éthiopiennes taillées dans la roche à Lalibela ont été minutieusement découpées dans la roche solide au 12<sup>ème</sup> siècle. Ces églises sont actuellement confrontées à divers problèmes de détérioration, tels que l'exposition aux éléments et les dommages naturels et causés par l'homme. Cet article évalue de manière critique les initiatives de conservation architecturale prises pour préserver ces bâtiments étonnants, qui sont souvent reconnus comme l'une des réalisations architecturales les plus étonnantes de l'histoire. Il examine attentivement les techniques de préservation utilisées, soulignant leur pertinence culturelle et les valeurs inhérentes cruciales pour le maintien des églises creusées dans le roc de Lalibela. A travers les aspects socio-économiques, il attire l'attention sur le manque de financement et le manque d'exigences techniques. L'étude utilise une méthodologie de recherche qualitative axée sur des études de cas approfondies de Lalibela, d'autres structures taillées dans la roche et des travaux universitaires publiés. Nos recherches offrent des suggestions précieuses pour encourager des techniques de conservation efficaces. Enfin, ces observations contribuent à une meilleure compréhension des défis de la préservation des héritages architecturaux du monde en fournissant des références utiles pour des sites analogues confrontés à des défis de conservation similaires.

**Palabras clave:** Patrimoine culturel, Conservation, Préservation, Éthiopie, Églises rupestres.

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## Introduction

One of the most outstanding instances of monolithic construction in the world is thought to be the rock-hewn churches of Lalibela, a UNESCO World Heritage Site in northern Ethiopia. These churches, which were carved out of solid rock and constructed in the 12th century, are works of art. However, the churches have been dealing with substantial conservation issues because of both natural weathering and human activity, therefore it is essential to design a thorough and long-term plan for their preservation and upkeep. Preserving the Lalibela rock-hewn churches is crucial for Ethiopia and the rest of the globe. To create successful preservation plans, specialists in the field of architectural conservation have been collaborating closely with local governments and communities. (UNESCO World Heritage Center, 2021).

The study aims to shed light on practical conservation measures that can guarantee the survival of the rock-hewn churches of Lalibela, Ethiopia, for the coming generations. With data and research gathered, using the qualitative research approach, from published works, this study reveals the dire need of the Lalibela rock-hewn churches in conservation works to protect their historical importance. The structural stability and integrity of the site are being impacted by natural forces including weathering, erosion, and geological instability as well as human-caused elements like tourism, urbanization, and vandalism. (Kumar et al., 2020) Numerous conservation initiatives have started because of these difficulties to guarantee the site's preservation for future generations. The natural weathering process is one of the biggest obstacles to preserving the rock-hewn cathedrals of Lalibela, (Renzulli et al., 2011). The soft volcanic tuff used to construct the churches is prone to deterioration from wind, water, and other natural variables. Furthermore, the churches' structural integrity has significantly deteriorated because they were exposed to the elements for over 800 years, (Ebabey & Zeleke, 2023). Experts in the field of architectural conservation have been developing numerous preservation solutions to deal with these issues. These tactics include safeguarding the churches from additional environmental harm, restoring the original structural integrity of the buildings using non-invasive methods, and fostering sustainable tourism to support regional economic growth while also preserving the site. (Gebregziabher, 2020).

This study's objectives are to examine the difficulties in conserving the rock-hewn churches of Lalibela, discuss current conservation techniques, and suggest upcoming preservation plans. The purpose of the study is to shed light on practical conservation measures that can guarantee the survival of rock-hewn churches for the coming generations.

The focus of this study is on the preservation of the rock-hewn buildings of Lalibela, a UNESCO World Heritage Site in northern Ethiopia. The study's objectives are to examine the difficulties in conserving historic churches, talk about present conservation techniques, and suggest upcoming preservation plans. The scope of the study includes a look at how the churches' structural integrity is affected by human activity, natural weathering processes, and the role that experts in architectural conservation play in creating long-term preservation plans. The main objective of the project is to develop efficient conservation techniques that can guarantee the survival of rock-hewn churches for future generations (Janssens, 2017).

## Theoretical Framework or Literature Review

### Architectural conservation

The process of preserving, restoring, and maintaining buildings or structures with architectural and historical significance is referred to as architectural conservation. Keeping these structures functioning and aesthetically pleasing while preserving their historical value and character is the aim of architectural conservation. Architectural conservation is described as "all actions aimed at safeguarding the value and integrity of the architecture, and the environment in which it was created, including artistic, historical, cultural, social, and technical aspects" by the International Council on Monuments and Sites (ICOMOS, 2010). The necessity to strike a balance between preservation and transformation is one of the major topics of architectural conservation. To prevent harming the structure's historic integrity or that of the surrounding area, any alterations must be properly planned and carried out. This calls for a thorough comprehension of the legacy resource's historical, cultural, and social value as well as a team effort involving stakeholders, subject matter specialists, and the larger community (Jokilehto, 2017). The use of appropriate materials and methods is an important component of architectural

conservation. Feilden (2003) asserts that because they have stood the test of time and are better suited to the original design and construction processes, older materials and construction methods are frequently more compatible with heritage structures and locations than modern ones. Trillo et al., (2021) point out the use and role of digital technologies to replace conventional methods, because they offer the possibility to integrate multiple layers of information and to link across industries, communities and higher education with a flexibility and timelessness that traditional techniques like paper-based could not demonstrate. In particular, HBIM offers the chance to connect a variety of information about heritage assets and convey it to multidisciplinary professionals in the form of BIM models, embedding important characteristics of historic structures while allowing designers to easily gather and reassemble information. These tools can help with the planning and implementation of conservation actions as well as offer new ways to interact with cultural places. However, the necessity to maintain the authenticity and integrity of the heritage resource must be balanced with the use of technology. Community involvement and engagement is another important aspect in architectural conservation. In order to ensure that local people's beliefs, opinions, and needs are taken into account, it is crucial to include them in the conservation process. Community involvement can promote a sense of ownership and responsibility for cultural property as well as increase public awareness of and support for conservation activities (Cameron, 2013).

### Socio-economic aspects of conservation

Several socioeconomic factors that are important to consider are included in architectural conservation. These elements can be examined from a variety of angles:

- Economic Impact: The local and regional economies are significantly impacted by architectural conservation. The creation of jobs and economic prosperity are frequently brought about by preservation efforts. Tourist spending on lodging, food, transportation, and related services can increase when historic buildings draw visitors. In addition to increasing property prices and luring businesses, conservation activities can also help the economy recover (Donovan, 2008).
- Job creation and skills preservation: Employment possibilities are created by

architectural conservation initiatives across a variety of industries, including architecture, engineering, construction, historic preservation, and tourism. For restoration and conservation work, skilled labor and specialized knowledge are needed, which promotes job growth and the preservation of traditional crafts and skills.

- Tourism and cultural heritage: Historic structures that have been preserved and cultural heritage sites are popular tourist destinations. Through visitor spending on things like admission fees, guided tours, trinkets, and hospitality services, this tourism potential brings in money for local economies. Architectural conservation supports cultural tourism, aids in the protection and promotion of cultural assets, and fosters a sense of pride and identity among the local population (Gražulevičiūtė–Vileniškė & Urbonas et al., 2011).
- Community development and revitalization: Valuing cultural heritage can be done in various ways. One way is through the emotional and aesthetic pleasure that people get from visiting heritage sites. Another way is through the economic benefits that they bring, such as generating revenue, creating jobs, and providing training opportunities. Preserving cultural heritage can also create economic benefits, such as city center revitalization, heritage tourism, an increase in property values, and small business incubation. The priority in economic development is to create jobs and local household income, which can be achieved by rehabilitating historic buildings. This creates a substantial economic impact on jobs and income since the labor required for building rehabilitation is high. Jobs in cultural heritage preservation are generally well-paid, and there is a shortage of the required skills. The preservation of cultural heritage also contributes to city center revitalization. Heritage tourism is another economic benefit generated by cultural heritage, as it is becoming one of the leading sectors in the post-industrial economy. The effect of cultural heritage on property values is significant. Research shows that there is a statistically significant price premium associated with the inclusion of a property in a historic district. Cultural heritage also plays a role in small business incubation, which is crucial for the local economy. The adaptation of historic buildings to modern needs without harming their physical structure and architectural character is

- essential in preserving cultural heritage. Import substitution is another issue that creates a sustainable local economy since expertise, labor, and materials from the local market are mainly used for the preservation of cultural heritage. The differentiation of products usually gains a monetary premium, and cultural heritage is an element that best expresses the diversity and identity of a place (Gražulevičiūtė, 2006).
- Sustainability and environmental considerations: The development and revival of communities depend heavily on architectural conservation. Communities maintain their sense of place and cultural identity by maintaining historic buildings (Correia et al, 2014). Neighborhoods and heritage areas that have been well-preserved frequently draw businesses, people to live there, and investors, which boosts the local economy and raises property value. Additionally, revitalized areas for community activities are created by historic building restoration and adaptive reuse, improving the quality of life for locals (O'Reilly, 2005).
  - Educational and research opportunities: To further the understanding of architectural history, conventional building methods, and cultural assets, architectural conservation offers educational and research opportunities. By sponsoring academic research, cultural institutions, and heritage organizations, it promotes a broader understanding and appreciation of the built environment (Jokilehto, 2017).
  - Restoration: In architectural conservation, the term "restoration" is frequently used to describe the process of returning a structure or location to its former form and state. To ensure that the building or site is appropriately restored to its historical, cultural, and architectural value, significant research and documentation are required. The Venice Charter, written by the International Council on Monuments and Sites (ICOMOS) in 1964, defines restoration as "the action or process of accurately revealing the form and features of a building, structure, or site as they appeared at a particular period in its history." (ICOMOS, 1964)
  - Preservation: Another term frequently used in architectural conservation is "preservation," which describes the process of keeping a building or place in its current condition without making significant changes. The goal of preservation is to conserve the building or site's original character and significance while stabilizing and protecting it. Preservation, according to the National Park Service, is "the act or process of applying measures necessary to sustain the existing form, integrity, and materials of a historic property." (National Park Service, 1993) The goal of preservation is to stabilize and sustain the building or site's current condition with little or no intervention.
  - Rehabilitation: The act of adapting a building or site for a new purpose while maintaining its historical, cultural, and architectural significance is referred to as "rehabilitation." To accommodate new uses, rehabilitation entails substantial site or building modifications, but these alterations shouldn't diminish the significance of the original structure. Rehabilitation is described in the Secretary of the Interior's Standards for Rehabilitation as "the process of returning a property to a state of utility, through repair or alteration, which makes possible an efficient contemporary use while preserving those portions and features of the property which are significant to its historic, architectural, and cultural values." (National Park Service, 1993)

### Architectural conservation terminologies

Architecture, history, art, engineering, and archaeology are all included in the interdisciplinary study of architectural conservation. The different terminology used in architectural conservation are crucial for comprehending the field's many facets. An overview of the terms and definitions typically used in architectural conservation is given in this examination of the literature.

- Conservation: John Ruskin, a 19th-century English art critic and writer, defined "conservation" as the process of preserving or maintaining a building's historical, cultural, and architectural significance. (Ruskin, 1849). Conservation is a proactive approach that focuses on preventive maintenance and repair of buildings and sites, rather than restoring them after damage has occurred. (ICOMOS, 2010).

A wide range of expertise and abilities are needed for the difficult and interdisciplinary topic of architectural conservation. To ensure that structures and sites are preserved and protected for future generations, it is essential to understand the numerous terminologies used in architectural conservation. The most often used

terms in architectural conservation are conservation, restoration, preservation, and rehabilitation. These terms are specified by worldwide charters, guidelines, and standards.

### Rock-Hewn Structures Around the World

Since ancient times, rock-hewn buildings have captured people's attention because they provide a fascinating look at the architectural prowess of earlier civilizations. Around the world, rock-cut cathedrals provide evidence of the creativity and flexibility of past civilizations. They offer insightful understandings of the architectural, ecclesiastical, and cultural activities of their time. There is magnificent architecture carved out of solid rock in addition to the churches of Lalibela. Other places of the world, such as the Cappadocia region of Turkey and the Petra site in Jordan, have similar constructions and are two famous places renowned for their amazing rock-cut architecture. Like the churches in Lalibela, these structures present unique conservation and management challenges. Known for its bizarre terrain of cone-shaped rock formations and host to a vast network of underground cities, churches, and monasteries is the Cappadocia region of Turkey. These inventively constructed buildings, which were carved into soft volcanic rocks, have elaborate tunnel systems, ventilation

shafts, and social areas. Jordan's Petra region is home to stunning rock-cut tombs, temples, and facades that are sculpted from sandstone cliffs that are rose in color.

### Cappadocia region of Turkey

Cappadocia, located in central Turkey, is home to a unique landscape of volcanic rock formations that have been shaped by erosion over time. The area is particularly renowned for its large network of cave settlements and underground civilizations that were carved out of the pliable volcanic tuff. Since the time of the Hittites, Cappadocia's rock-hewn buildings have served a range of functions, including houses, monasteries, and places of worship (Hazel & Andus, 2006). The Göreme Open Air Museum, a UNESCO World Heritage Site, is one of Cappadocia's most well-known examples of a rock-hewn building. A collection of cave churches and monasteries from the 10th and 11th centuries are on display at the museum. These structures are painted with paintings that depict scenes from the Bible. The site's conservation efforts have concentrated on preserving the frescoes from light and moisture damage, strengthening the rock walls, and restricting public access to lessen wear and strain on the buildings.



**Figure 1.** Rock-cut homes, Cappadocia, by Author.



**Figure 2.** Rock-cut Uchisar Castle, Cappadocia, by Author.

Derinkuyu, located in central Anatolia, is a superb illustration of an ancient town constructed in the subsoil. Its spatial range is astounding; he had room for up to 20,000 people. The deepest floor of the complete underground system can reach a depth of 85 m and has up to 18 floors. When either home was rebuilt in 1963, a very recent discovery of this ancient city was made. In 1969, it became open to visitors. Underground areas were utilized up to the 19th century, after which they were abandoned (Nývlt et al., 2016).

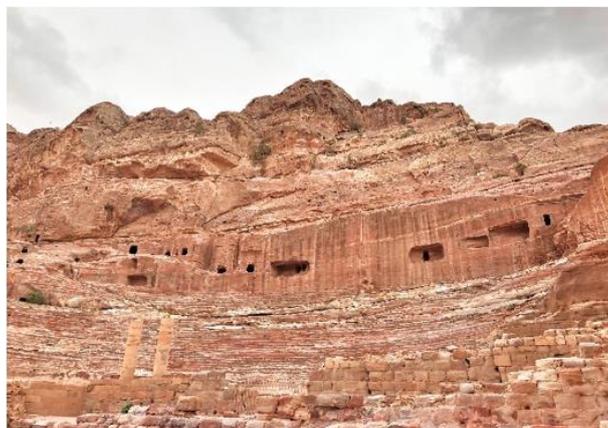
The Derinkuyu Underground City, a vast network of tunnels and chambers carved out of the tuff that previously provided shelter for locals during times of conflict and persecution, is another noteworthy location in Cappadocia. At Derinkuyu, conservation efforts have been concentrated on stabilizing the rock walls, repairing damage brought on by earthquakes and water penetration, and safeguarding the location from looting and vandalism.

### Petra region of Jordan

Another well-known location for constructions carved out of rock is Petra, which is situated in southern Jordan. The city, which the Nabataeans constructed out of sandstone cliffs in the fourth century BCE, was a significant Silk Road commerce center. Petra was included on four successive World Monuments Fund lists of the most endangered sites in the world (in 1996, 1998, 2000, and 2002) due to the fact that both natural and anthropogenic effects are increasingly endangering its integrity and it is exceedingly fragile. (UNESCO, 2012). Figures 3 and 4 are pictorial representations of parts of Petra region in Jordan. The Treasury, a temple carved onto a high cliff face, is the most well-known building in Petra. The delicate sandstone cliffs of Petra have been stabilized, the area has been protected from weathering and erosion, and visitor access has been controlled to reduce harm to the structures. Installing a system of canals and basins to collect rainwater and stop runoff-related erosion was one significant Petra project.



*Figure 3.* Facade of the treasury (khazneh), photo obtained from: Burak, J. (2015 Oct 15).



*Figure 4.* Theater, photo obtained from: Burak, J. (2015 Oct 15).

**Study area**

**Background Information on Lalibela**

Lalibela is a town in northern Ethiopia's Amhara region, about 260 kilometers from Addis Ababa,

the nation's capital. The town is famed for its monolithic churches that were carved out of rock and were constructed in the 12th century under the rule of King Lalibela.



**Figure 5.** The location of Lalibela in Ethiopia, (Al Jazeera, 2021)

One of the world's greatest architectural wonders is thought to be the churches of Lalibela, which were hewn out of solid rock. There are a total of 11 churches, each with a distinctive architectural style and spiritual value. A network of tunnels and trenches that the priests and worshippers utilized as a means of transportation connects the churches. Lalibela's churches are viewed as a representation of Ethiopia's extensive cultural and religious history. They also serve as a tribute to the resourcefulness and inventiveness of the individuals who constructed them using only rudimentary equipment and their bare hands. The churches of Lalibela were designated a UNESCO World Heritage Site in 1978 in recognition of their historical and cultural importance.

**The Rock-Hewn Churches of Lalibela**

The village of Lalibela in northern Ethiopia is home to a collection of 11 monolithic churches known as the Rock-hewn churches of Lalibela. The churches, which were constructed in the 12th century under the rule of King Lalibela, are regarded as one of the seven wonders of the world. Each church has a distinctive design and a special religious meaning. They were cut out of solid rock. A network of tunnels and trenches that the priests and worshippers utilized as a means of transportation connects the churches. (UNESCO, 2023).

- *Some churches from the north cluster of Lalibella*



**Figure 6.** Bet Medhane Alem (House of the Saviour of the World), (Brilliant Ethiopia1, 2021)



**Figure 7.** Bet Maryam (House of Mary), photo obtained from: (Brilliant Ethiopia1, 2021)



**Figure 8.** Bet Golgotha and Mikael, photo obtained from: (Brilliant Ethiopia1, 2021)

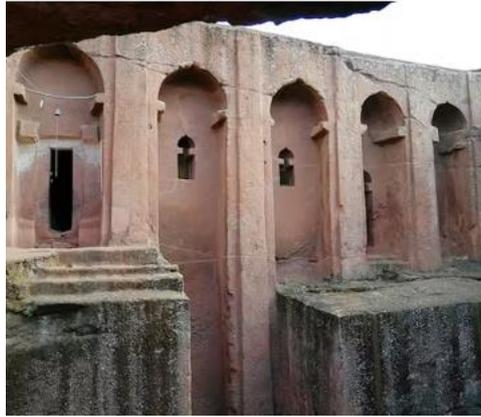
The Lalibela rock-hewn churches are evidence of the ingenuity and inventiveness of those who constructed them. The only equipment and methods used to build the churches were chisels and hammers. The architects of the cathedrals were able to cut beautiful architectural details from the rock that are still highly regarded today. Both religious and cultural values may be found in the rock-hewn churches of Lalibela. For the Ethiopian Orthodox Church, the churches are a significant place of pilgrimage, and thousands of people travel there each year to participate in religious festivals and festivities. The churches are a source of national pride and a representation of Ethiopia's rich cultural heritage. (UNESCO, 2023). The Lalibela rock-hewn churches were designated a UNESCO World Heritage Site in 1978 in recognition of their historical and

cultural importance. The churches are referred to as "a remarkable testimony to the architectural and engineering skills of the ancient Ethiopians" by the UNESCO World Heritage Centre, who also says that they "are outstanding examples of a unique form of religious architecture." (UNESCO, 2021) The Lalibela rock-hewn chapels still draw tourists from all over the world today. The churches are well-liked tourist attractions, and tourists flock there to take in the magnificent architecture and discover more about Ethiopia's fascinating history and culture. The town of Lalibela has a strong tourist economy, with hotels, eateries, and gift shops attracting tourists.

- *Some churches from the south cluster of Lalibella*



**Figure 9.** Bet Gabriel Raphael (House of Gabriel Raphael), obtained from: (Brilliant Ethiopia1, 2021)



**Figure 10.** Bet Abba Libanos (House of Abbot Libanos) and Bet Leham, obtained from: (Brilliant Ethiopia1, 2021)



**Figure 10.** Bet Emanuel (house of Emmanuel), obtained from: (Brilliant Ethiopia1, 2021)

### Methodology

In this study, data from published works are gathered using the qualitative research approach. Reports, journals, and papers on related topics served as the foundation for the literature used. This approach can be used because the study's goal is to shed light on practical conservation measures that can guarantee the survival of the rock-hewn churches for the coming generations. Information was readily available online via online libraries, it was possible to get articles covering the history, conservation assessment, and documentation from previously written publications.

### Results and Discussion

Considering the history behind the structures and their cultural context is a vital part of historic conservation, which involves preservation. Preserving historic buildings is vital to understanding a nation's heritage. In the case of the Rock-Hewn churches, which started out being a little Jerusalem for African Christians went on to start a new age of growth for Ethiopians.

The conservation of the Lalibela rock-hewn

churches is a complex process that calls for a combination of technical, social, and cultural factors. The process of architectural conservation for the churches includes a few actions intended to preserve both the structural integrity of the buildings and their cultural relevance.

- **Stability and preservation** of the rock surfaces and structures is one of the main ways of architectural conservation for the rock-hewn churches of Lalibela. This entails locating rock regions that are unstable or that have accumulated damage over time and applying the proper conservation treatments to stabilize and safeguard these regions. The application of mechanical or chemical techniques to strengthen the rock is one of these treatments, as is the placement of safety barriers to stop additional harm. (ICOMOS, 1964)
- **Management of visitors' access and use** is a crucial component of architectural conservation for churches. A large number of visitors to the churches might cause serious damage to the buildings and the surroundings. Conservation efforts may concentrate on the creation of visitor management strategies, including the designation of designated pathways, the

- installation of protective barriers, and other steps to lessen the impact of visitors on the structures to reduce this damage. (UNESCO World Heritage Center, 2021)
- **The development of proper conservation rules and practices** is another aspect of maintaining the Lalibela rock-hewn churches. This could entail the creation of policies and rules for the administration and preservation of the churches as well as the creation of educational initiatives for both residents and professionals working in the field of conservation. It might also entail creating outreach and educational initiatives meant to spread knowledge about the value of churches and their cultural relevance. (UNESCO World Heritage Center, 2021)
  - **Involving local communities** in conservation efforts is crucial to ensuring the long-term viability of conservation efforts. This can be done by creating community-based conservation initiatives that work with residents to design, carry out, and monitor conservation efforts. This strategy can promote a sense of ownership and responsibility for the preservation of the churches as well as aid in increasing local capacity for conservation activities. (ICOMOS, 1983)

### Significant Values for Their Conservation

The religious, historical, and cultural significance of Lalibela's rock-hewn churches makes their preservation crucial. These values consist of:

- **Cultural value:** The rock-hewn cathedrals of Lalibela are outstanding examples of Ethiopia's architectural legacy, which has evolved over centuries and displays a special synthesis of indigenous and foreign influences. The elaborate carvings and decorations on the churches, which represent the aesthetic and cultural heritage of the area, are highly noteworthy. For this cultural treasure to be preserved for future generations, these structures must be conserved.
- **Historical value:** It is thought that King Lalibela ordered the construction of the rock-hewn churches in Lalibela in the 12th century. They are important as a representation of Ethiopia's medieval civilization as well as a tribute to the creativity and technical know-how of the builders. The preservation of these buildings is crucial for maintaining this significant portion of Ethiopia's heritage.

- **Religious value:** The Lalibela rock-hewn churches are revered by the local populace and are significant places of pilgrimage for the Ethiopian Orthodox Church. Numerous pilgrims visit them annually as they are thought to be the earthly representation of the New Jerusalem. The preservation of these buildings is crucial for upholding the site's religious significance and its status as a place of worship.
- **Touristic value:** The Rock-hewn churches of Lalibela are one of Ethiopia's most important tourist attractions and are visited by thousands of people from around the world each year. The conservation of these structures is important for preserving their tourism value and ensuring that they continue to attract visitors and contribute to the local economy.

### Cultural significance

The rock-hewn chapels of Lalibela are highly revered across Ethiopia and the rest of the world. These cathedrals are regarded as UNESCO World Heritage sites and are among the most significant historical and cultural monuments in Ethiopia. The churches, which were built in the 12th and 13th centuries, are renowned for their distinctive architectural style, which includes fine carvings and frescoes carved straight into the live rock. The Rock-hewn churches of Lalibela should be preserved for their historical relevance in addition to their spiritual and religious importance. The churches shed light on Ethiopia's medieval religious and cultural traditions as well as the period's engineering and architectural techniques. Therefore, preserving these churches is crucial for the historical and cultural heritage of Ethiopia, as well as for the education and appreciation of coming generations. Beyond their religious and historical significance, Lalibela's rock-hewn churches have a significant cultural impact. Additionally, these churches are a significant representation of Ethiopia's history and culture. They stand for inventiveness, creativity, steadfast faith, and devotion to the cultural traditions of the people who built them. Therefore, it is crucial that these churches are preserved if Ethiopia's rich cultural heritage is to be recognized and respected both domestically and internationally.

### Conclusions

An interdisciplinary endeavor called architectural conservation aims to sustain the historical relevance, artistic value, and functioning of existing structures. A unique

UNESCO World Heritage Site in Ethiopia, the rock-hewn churches of Lalibela are an exceptional example of religious construction. However, there are serious conservation issues at the site that demand quick action. A thorough and multidisciplinary approach to architectural restoration is necessary to preserve the preservation of the historical, cultural, and architectural relevance of the rock-hewn churches of Lalibela. This strategy ought to consider the difficulties these structures present. These landmark structures can be preserved for present and future generations to admire and enjoy by carrying out rigorous assessments, putting suitable conservation measures in place, and adopting ecologically friendly activities.

Effective conservation plans should also take the local community's socioeconomic conditions into account. A sense of ownership and responsibility can be fostered by involving the community and spreading knowledge of the value of maintaining cultural property, which will result in more sustainable conservation techniques. Collaboration with international organizations and the creation of specialized conservation funds may also be able to offer crucial assistance for ongoing upkeep and restoration projects. We can guarantee the long-term survival of these important historic sites by employing a diverse and adaptive strategy to the conservation of the rock-hewn churches of Lalibela and comparable architectural marvels. We can preserve these remarkable rock-hewn monuments' historical and cultural significance while also preserving their breathtaking beauty and spiritual heritage for future generations to enjoy.

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## Socio-economic sustainability approaches applied within the conservation strategies of the historical city of Jeddah "The case study of Al-Balad"

نهج الاستدامة الاجتماعية والاقتصادية المطبقة ضمن استراتيجيات الحفظ لمدينة جدة التاريخية "دراسة حالة البلد"

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### Abstract

Sustainability has gained significant attention in recent years due to the critical circumstances of global crises. The historical city of Al-Balad has been the center of attention given to the conservation field aiming to preserve the city's identity while considering its historical role, unique buildings, the past of the city, and its people. Socio-economic sustainability in conserving the old district of Al-Balad is achieved through multiple strategies including the economic opportunities offered for the locals in terms of business development, as well as attracting tourists, increasing property value, and adaptive reuse. The aim of the research is to detail the socio-economic heritage preservation techniques and analyze the efforts made by the Saudi government and civil organizations to create a series of recommendations based on the recent research and literature review to evaluate its effectiveness in protection. The research methodology used is a qualitative approach, with field visits to take a closer look at current activities and progress in the field, as well as peer literature reviews and official sources. The findings of the research show a development in the social and economic aspects of the community as a result of the efforts related to the conservation of the heritage place.

**Keywords:** Conservation, Al-Balad District, Old Jeddah, Socio-economic, Sustainability, Adaptive Re-use.

### خلاصة

لقد حظيت الاستدامة باهتمام واسع في السنوات الماضية بسبب الظروف الحرجة التي يعيشها العالم. ثبت أن تنفيذ استراتيجيات الحفظ المستدامة يزيد قيمة المنطقة وعانداها وفوائد هذا التنفيذ. لقد كانت مدينة البلد التاريخية مركز الاهتمام في مجال الترميم بهدف الحفاظ على هوية المدينة مع الأخذ في الاعتبار دورها التاريخي ومبانيها الفريدة وماضي المدينة وشعبها. يتم تحقيق الاستدامة الاجتماعية والاقتصادية في الحفاظ على منطقة القديمة من خلال استراتيجيات متعددة بما في ذلك الفرص الاقتصادية المقدمة للسكان المحليين من حيث تطوير الأعمال، فضلا عن جذب السياح، وزيادة قيمة العقارات، وإعادة الاستخدام التكميلي. من ناحية أخرى، يتم الحفاظ على حي البلد القديم من خلال تقنيات متعددة بما في ذلك الفرص التي توفرها للسكان المحليين من حيث تطوير الأعمال، وزيادة قيمة الممتلكات، وإعادة الاستخدام. الهدف من البحث هو تفصيل تقنيات الحفاظ على التكميلي للتراث. التراث الاجتماعي والاقتصادي وتحليل الجهود التي بذلتها الحكومة السعودية والمنظمات المدنية لإنشاء سلسلة من التوصيات بناءً على الأبحاث الحديثة ومراجعة الأدبيات لتقييم فعاليتها في الحماية. منهجية البحث المستخدمة هي نهج نوعي، مع زيارات ميدانية لإلقاء نظرة فاحصة على الأنشطة الحالية والتقدم المحرز في هذا المجال، فضلا عن مراجعات الأدبيات النظراء والمصادر الرسمية. وتشير نتائج البحث إلى تطور في الجوانب الاجتماعية والاقتصادية للمجتمع نتيجة الجهود المتعلقة بالحفاظ على المكان التراثي.

**الكلمات المفتاحية:** الحفظ، حي البلد، جدة القديمة، اجتماعي واقتصادي، استدامة، إعادة استخدام تكميلية

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## Introduction

The rapid evolution of cities around the world contributed to the deteriorating state of its heritage fabric (Fig. 01) caused by the neglect of preserving the old buildings in the interest of the new districts within the expansion (Badawy, 2018). Though the development played a vital role in coping with the increasing demand for

new suburbs to be formed to accommodate the population of the city, the downside was later realized in losing the identity of the nation with the development momentum represented by the neglect of preserving the heritage buildings and its surrounding (Heba, 2022).



**Fig. 01.** The deteriorating state of Al-Balad's urban fabric.

Socio-economic sustainability intertwines with heritage conservation in response to the needs of the local community, preserving its precious history and identity while ensuring the prosperity of future generations (Waheeb, 2022). Thus, a balance with all those factors should be met and carefully analyzed to minimize the faulty measures that could lead to harming one of those elements in the interest of pursuing the other. One of the methods in achieving socio-economic sustainability with heritage conservation is community-based tourism (Gena, 2022). Through engaging the local residents in periodically organized events and ceremonies that will reflect in benefiting the participants with economic returns while promoting the heritage conservation of the area, the participation will enhance the economic status of the residents through creating more jobs and ultimately improving the quality of life of those residents. The other important aspect of socio-economic heritage conservation is allowing the accessibility to the site to tourists as well as all members of society including people with disabilities and special needs. Such measures will raise the feeling of belonging in the heritage areas and create an emotional connection that will attach the present and future generations to their roots (Calogero, 2022). The other factor that should be considered is the participation of the local residents in the decision-making to preserve those sites and taking into account all the different views and opinions which will

eliminate the risk of going in the wrong direction in terms of conservation strategies and techniques. The development of the communities and its heritage site requires the authority and decision-making committees to have a holistic view of the rightful and best-suited conservational approaches to meet the aim set for such an act. The old city of Jeddah, Al-Balad (Fig. 02), carries the rich history of the city's past with its traditional unique architectural buildings, compact urban planning, and narrow streets. It is a clear representation of civilizations blending in terms of Hijazi architectural style (Fig. 03) due to the emigrated people from distinct parts of the world residing in the city and influencing its architecture and culture. Due to its rich heritage which spans thousands of years, the government as well as the civil organizations of Saudi Arabia have spent a lot of effort to preserve and maintain its valuable heritage (El-belkasy, 2022) represented by the unique architectural buildings and its civic surroundings with various techniques and methods across all country and especially in the ancient district of Al-Balad-Jeddah, which its formation goes back to the 7<sup>th</sup> century (AL-BAN, 2016) and was considered one of the utmost trading center and trading route from different continents back in its time when it was a gated city, and now it acts as a tourism attraction spot due to its unique Hijazi architectural buildings and its representation of the living style of the past (AL-BAN, 2016).



**Fig. 02.** The historical area of Al-Balad.

It was later realized the historic significance and value of the area resulted in the declaration of the city as conservation area by the Ministry of Municipal and Rural Affairs in 1975 with laws

that restricted the alteration and demolition of certain zones within the district (Alzahrani, 2016).



**Fig. 03.** Hijazi architecture style of Al-Balad.

Another step which was taken by the government was the funding of the restoration of many of its buildings (El-belkasy, 2022) which carry historical significance as well as the financial support of the owners to repair and maintain their buildings within the area. In the academic field, tours and seminars were organized to raise awareness of this area's importance and value.

The past, current, and planned efforts to preserve the components of the heritage area have cast its shadow on the social and economic fabric of the district. Balancing all those factors was necessary to be carefully considered and analyzed to minimize the negative effects within the process of preserving the tangible objects within the area.

The aim of the research is to elaborate on the socio-economic heritage conservational techniques and strategies, analyze the efforts executed by the Saudi government and civil organizations to pursue this goal, and lastly propose a set of recommendations based on the conducted research and literature review to enhance the measures taken in order to assure its effectiveness and longevity.

The research will answer the following questions in order to conclude the objectives of the research: the type of conservation methods adopted by the authority to preserve the old district, the measures taken to enhance the socio-economic fabric of the district, and the effect of the approaches applied to achieve this target.

The objective of the research is to assess the efficacy of the adapted urban and architectural conservation policies and methods for Al-Balad District in conserving the area's historical site of Al-Balad. There are a number of limitations in conducting the research intended, one of them is the restriction of access to multiple heritage buildings, and the other is the limited academic resources of the contemporary conservation resolution and techniques as the organized efforts and the contribution of the academic entities are relatively new. The research methodology used is a qualitative approach with peer literature reviews and findings of the published articles and official resources along with site visits to get a closer glimpse of the current activities and progress at the site.

## **Theoretical Framework**

### **Heritage conservation and sustainability**

The heritage conservation and sustainability of heritage sites have gained a lot of attention and care in recent years. Heritage conservation evolves around preserving the historical sites and buildings that carry significant and important value due to their unique architecture, the story they can tell about the past, or their connection to notable people, along with others. On the other hand, sustainability is the ability to meet the needs of the present without compromising the ability of future generations to meet their own needs. Considering both concepts ensures the longevity and sustainable preservation of those areas.

Applied strategies is often challenging for various reasons, one of which is the lack of funding as the preservation of heritage buildings is expensive due to the sensitivity of its conditions and the urban fabric that is usually compacted which limits the usage of the required heavy equipment and tools, and the deteriorating state of the old buildings and the possibility of its collapse if not dealt with carefully, on the other hand, many of those buildings are privately owned and resources might not be available for the owners to renovate and maintain those buildings, thus the government decided to assist in funding the restoration of some of those buildings regarding certain criteria. The other challenge is the environmental impact that results in the waste that is produced throughout the renovation process which might include some hazardous materials, the conventional construction and renovation techniques which are not generally environmentally friendly due to the consumption of a large amount of energy, and

last is the required use of heavy machinery which could potentially have a negative impact on the surrounding fabric of the heritage site.

### **Social sustainability in heritage conservation**

Social sustainability in the process of preserving heritage buildings is vital as it ensures the social returns to the community in various aspects to thrive the social involvement and social return through the conservation of those areas (Heba, 2022). Involving the community in the decision-making process and determining the significant value of what to preserve is one aspect to be considered. Another is the economic value in terms of business creating and creating an economic cycle within the heritage sites. The cultural enrichment and the public perception of the history and customs of the area and its people are another element (El-belkasy, 2022). Lastly is the accessibility of all different groups, genders, cultural backgrounds, and physical abilities to strengthen the bond between the people and their rich history.

### **Economical sustainability in heritage conservation**

Economic sustainability is one of the four pillars that can be incorporated within the process of preserving the heritage area to turn the area into an economic generating source to benefit the local economy and its people. There are different aspects to consider in achieving this goal, tourism attractions bring tourists to explore and know more about the history of the place and generate revenue. Another is the job creation in terms of temporary kiosks, restaurants, cafes, museums, and galleries. The last aspect is the local cultural industries such as arts, crafts, and traditional skills to elevate the handy crafts of the people and become a source of income.

## **Methodology**

### **Study area**

#### **Background about Al-Balad**

Al-Balad district is located in the heart of Jeddah which was once a gated city before its scattered development to the current districts of the city (Fig. 04). Many of the historical district's buildings were inscribed by UNESCO after multiple attempts from the government to shed light on the importance and value of the area for a global recognition (Adas, 2013). The district consists of many buildings that are distinct for their architectural unique style which is a blend

of multiple styles from different Islamic countries introduced by the Muslims migrants who came in to fulfill their religious duty of Hajj and Umra and then resided in the city (Ghazze, 2020). The main characteristics of the city are its narrow alleys, traditional coral stone buildings, architectural elements such as intricate

latticework windows and balconies, Mashrabia, and engraved wooden doors. Restoring and preserving the heritage value of the district and its buildings and fabric has been one of the goals within the development process and strategies of the government.



**Fig. 04.** Jeddah City growth progression, a set of maps shows the rapid growth of the metropolitan area of modern Jeddah city through the last fifty years. From “Sustainable urban heritage conservation strategies—a case study of historic Jeddah districts” by Badawy, 2018, *Taylor & Francis Group*.

**Significance and value**

Al-Balad heritage district carries historical significance and value that is persistent to date, such role and importance contributed to the massive attention and care the area has had over the past years. Understanding those values will justify the means and methods the government takes in terms of cost and time spent to preserve its buildings and fabrics. The area carries historical importance as being in the city which is considered the economic capital of the country due to its location as the main gate to Makkah and Madina, the two holy cities for Muslims, and having the port which is access to the majority of the goods and shipments received from worldwide. The other aspect is its architectural style uniqueness within its buildings, Hijazi architecture style is a mixture of multiple international styles from different civilizations (Heba, 2022) that’s been brought by the pilgrims who came to fulfill their religious duty in Hajj

and Umra and then ended up residing in the gated city within the heritage district and reflecting their origin’s style in the buildings they constructed. The cultural significance the area carries is another aspect, the mixed cultures of the people who resided in the area (Table 01) have created a diversity of different backgrounds and merged them into a unique cultural characteristic. The district is considered one of the tourist attraction spots in the region which help generate income for the country as well as the people and at the same time reflect and educate the visitors about the rich heritage and culture of the city. Lastly, it is considered valuable for the local community identity, as many of the renowned families of the region originated from this area (Table 02) and their original homes still exist nowadays and they help with the renovation and preservation measures initiated by the government and the people find it a source of pride as it reflects their identity, history, and culture heritage (Waheeb, 2022).

**Table 01.**

*Population diversity percentages in the city of Jeddah in 2020, The estimation was done through a governmental authority. From, Statistical Yearbook by General Authority for Statistics of Saudi Arabia, 2020.*

| Nationality   | Percentage |
|---------------|------------|
| Saudi Arabian | 77.9%      |
| Yemeni        | 10.2%      |
| Egyptian      | 2.7%       |
| Indian        | 2.6%       |
| Pakistani     | 1.9%       |
| Syrian        | 1.4%       |
| Lebanese      | 1.2%       |
| Sudanese      | 1.1%       |
| Bangladeshi   | 0.9%       |
| Other         | 2.2%       |

(Source: Arabia, 2020)

**Table 02.**

*List of buildings within Al-Balad that belong to renowned families.*

| Building Name  | Image  |
|----------------|--|
| Bait Nassif    |    |
| Bait Baashen   |    |
| Bait Matbouli  |   |
| Bait Saloum    |  |
| Bait Noor Wali |  |

(Source: Composed by Author)

### Conservation of Al-Balad District

Due to the importance of the heritage district of Al-Balad and with the growing concern about its value and the need to preserve it, the government, in cooperation with civil organizations, has launched several initiatives to preserve the area by adopting different strategies and methods

(Badawy, 2018). The initiatives launched include the establishment of the Jeddah Historical Preservation Society which focuses on the restorations of selected buildings within the district according to certain criteria. Another is the incorporation of planned restoration techniques for deteriorating buildings in order to conserve them. On a social scale, a cultural

center was created in the middle of the district to showcase its heritage, history, and value to raise awareness among the public and the visitors of the place (El-belkasy, 2022). Lastly, the urge and persistence to include the area within the UNESCO World Heritage sites will put the area on a global stage, subsequently earning it more credibility and worth.

### Conservation policies of Al-Balad

There has been a progression in the conservation guidelines and parameters set by government officials during the 70s and 80s until the present to ensure the sustainability and longevity of the conservation practices within the historical area (Ghazzeh, 2020), Robert Matthew and Jeddah's municipality were commissioned subsequently to propose and set the policies on which the conservation will be based on.

#### – Robert Matthew Policy

During the 1970s, and as the first initiative from the Saudi government to preserve historical and cultural areas (Gena, 2022), the British architect Robert Matthew was commissioned to develop a

plan for the conservation strategies and guidelines (Fig. 05). The plan was based on the following principles:

- Preservation of the historic fabric of Al-Balad including its buildings, streets, and open spaces which was suggested to be achieved through the adaptation of local materials and methods.
- Involvement of the community is one of the essential points of the conservation process. Public meetings and workshops were held to hear the thoughts and opinions of the residents.
- Sustainability incorporation in the conservation plan. He proposed using traditional materials and methods which will be harmless to the environment.

His plan was implemented during the 1980s and 1990s (Maestri, 2018) which resulted in a remarkable outcome, though the efforts were not enough considering the scale of the heritage area that should be included.



**Fig. 05.** Robert Matthew's conservation policy for historical Jeddah. The images show the plan for the conservation strategies and guidelines by the British Architect Robert Matthew, From "Sustainable Conservation and Reuse of Historical City Center Applied Study on Jeddah" (Source: El-Belkasy, 2022)

#### – Jeddah Municipality Policy

Jeddah Municipality has issued a set of policies on which the conservation of the heritage area of Al-Balad will be based (El-belkasy, 2022). It is designed to maintain the cultural and architectural uniqueness while thriving the livability of the place. It was based on the Robert Matthew Policy with some alterations (Ghazzeh, 2020). Some of the key principles include:

- Strict policy against unauthorized alteration that includes demolishing, remodeling, or changing the identity of the building. That

ensures the district's unique architectural heritage is preserved.

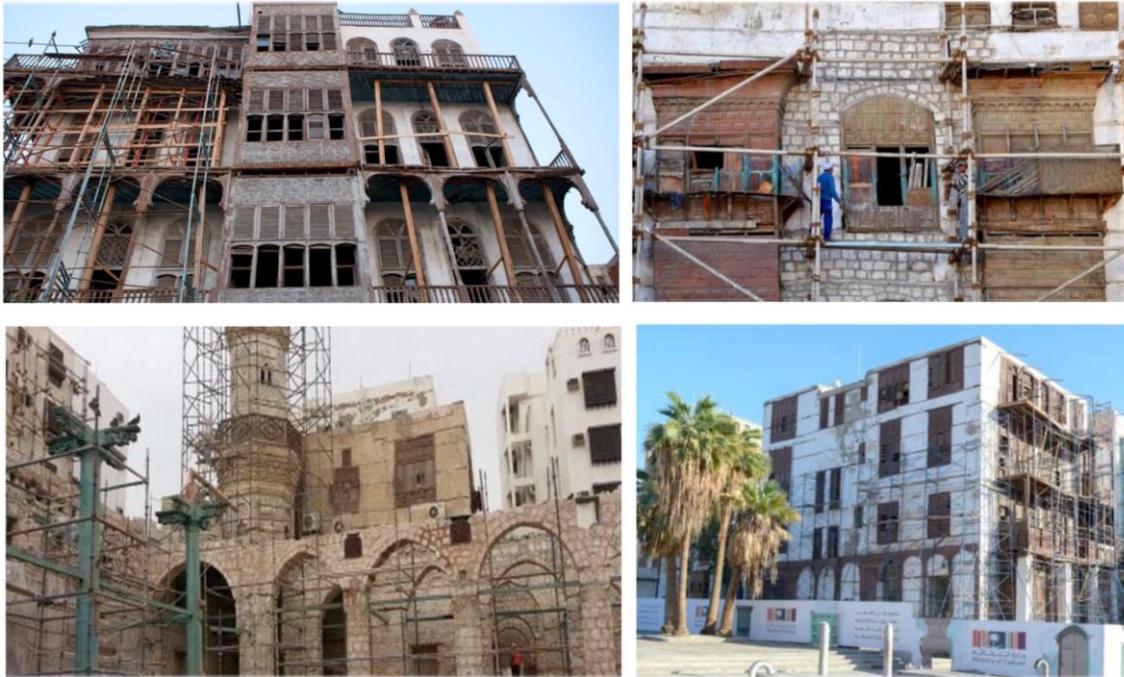
- Community engagement by working closely and cooperating with the public as the conservation is a bottom-up process, and that ensures the support of the project and its sustainability.
- Sustainability consideration in the development of Al-Balad, it's outlined by using traditional materials and methods to minimize the negative impact on the environment.

Due to the implementation of those policies, the heritage district of Al-Balad has become vibrant and a thriving center of culture and commerce.

### Social aspect of Al-Balad Conservation

The conservation of the heritage district of Al-Balad has had a significant impact on the social life of its residents as well as visitors. One of the advantages is the preservation of its cultural heritage as it is home to a rich variety of historical

and cultural sites and buildings including public spaces, private residences, museums, mosques, and others (Heba, 2022). The conservation of those areas (Fig. 06) has enabled access to the buildings for the public. It also helped with increasing the quality of life and social network within the community as it brought people from different cultural backgrounds to interact and increase the sense of community. This all resulted in making the city more livable and an attractive place to live in and visit.



**Fig. 06.** Renovation work for various buildings in the Al-Balad district.

It set an example of the important role that conservation plays in regard to benefiting the community. Conserving the district has helped to preserve the city's cultural heritage, boost the economy, and improve the social fabric of the city (Gena, 2022). Some of the social benefits resulting from the conservation of the heritage area are:

- Preservation of cultural heritage has made the district a vibrant place to visit, and it's boosted the local economy of the residents.
- Improve the quality of life for the residents by creating jobs, attracting tourists, and making the district more livable.
- A sense of community is increased by bringing people together with different backgrounds to interact with one another.

This is a significant example of how historic preservation benefits society by helping to preserve the city's cultural heritage of its people.

### – Social Conservation Approaches

Post-vision era 2030 of Saudi Arabia which was announced back in 2016 (Waheeb, 2022), has reformed and elevated the strategies adopted by the government and in cooperation with civil organizations in all aspects of development, and that includes the conservation of the heritage area of the city.

Periodical events (Fig. 07) are being organized and held in the heart of the heritage area with a variety of activities (El-belkasy, 2022), shows, and content to attract different audiences within a wide range of age groups.



**Fig. 07.** Festival gatherings in Albalad. Periodical festival gatherings included a traditional activity within the historical area. From “Sustainable urban heritage conservation strategies—case study of historic Jeddah districts”, (Badawy, 2018).

Examples of the events are:

- Jeddah Art Week is an annual event consisting of performances, exhibitions, and other shows that celebrate the art state of the city.
- Jeddah Heritage Festival which celebrates the city’s history and culture featuring music and dance related to local culture.
- Jeddah International Book Fair which features books and authors from around the world with historical book reviews and seminars to promote awareness of the history of the place.
- Jeddah Film Festivals (Fig. 08) are held annually with guests of the film industries from all over the world which exposes the area and its heritage components across the globe.
- Jeddah Comedy Festival features international as well as local stand-up comedians which is attended by many different age groups.



**Fig. 08.** International film festival in Al-Balad. Jeddah’s international film festival is held in the historical district of Al-Balad. From Red Sea International Festival, by Screen Daily, 2022 (Source: Daily, 2022)

In addition to other events that's been held periodically which makes the area vibrant and exciting to visit and know more about, and a chance to interact and communicate with others. There are different measures which were taken to ensure the experience worthy of the place for the visitors. First is the rehabilitation of the historic buildings, especially the ones that are being used for the events as the condition of those buildings was deteriorating and in need of maintenance and renovation at different levels (Maestri, 2018). Second by improving the infrastructure of the area as it is expected to host large crowds throughout the year and that includes upgrading the sewer system, sidewalks, roads, and squares. Third, creating a public awareness campaign to educate the residents on the conservation importance in order to sustain the city's heritage and culture. Finally, a management plan to ensure the longevity of the conservation practices and approaches which includes developing a tourism strategy, creating heritage trails, and training the locals in heritage conservation (Gena, 2022).

All the efforts set are aimed at enhancing the social gain from the conservation of the area, some of these benefits are:

- Increased social interaction through the events and included activities in them which promote the social interaction between visitors who share the same interest in the heritage and history of the place and that will subsequently build a social bridge between different communities with different backgrounds.
- Promote cultural understanding, as those events not only enlighten the visitors from other countries about the heritage and culture of the locals, it even so with the

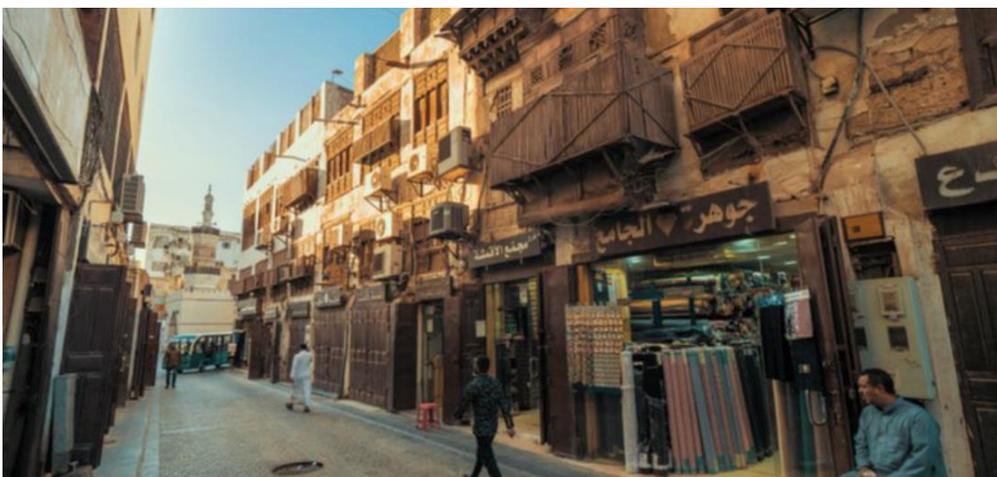
residents from different provinces within the same country, and that increases the patriotic feeling among residents as well as exposing the locals to foreign cultures via mixing and interacting with the visitors.

- Creating a sense of community by bringing people together boosts the sense of ownership over their city.
- Improving quality of life by offering people the luxury of choice to attend different events that are related to entertainment, education, culture, or others.

### Economic aspect of Al-Balad Conservation

There has been a positive economic impact due to the conservation of the heritage district of Al-Balad by creating jobs, attracting tourists, and tempting investment which boosted the local economy and improve the life of its residents (Bagader, 2014). Some of the economic benefits examples are:

- Job creation (Fig. 09) in the construction and renovation of those buildings, tourism, hospitality sector, and stores.
- Tourism attraction from all over the world helps to boost the local economy and job creation.
- Increased property value within the district which benefited the homeowners and businesses in the area, this was due to the development and enhancement of the buildings as well as the infrastructure of the whole area.
- Improved quality of life via making the district more livable with all the added facilities and entertainment, which has attracted new residents and businesses to the area.



**Fig. 09.** Stores at Al-Balad district. The attractive traditional shops in Al-Balad create job opportunities for the locals. From *Classic Saudi Arabia*, by Remote Lands, 2006, (Source: Remote Lands, 2006)

– **Economic Conservation Approaches**

There are different measures that have been implemented by the Saudi Tourism Authority to enhance the economic return of the conservation of the area, one of the key approaches is the adaptive reuse of some of the key buildings within the district by turning an old, abandoned building into boutique hotels, museums, and stores to showcase and sell artifacts (Bagader, 2016). Examples of the buildings are as follows:

- Bait Nassif, is a historical building, built in 1872, The government acquired the ownership of the building in the 1980s and turned it into a museum showcasing the history and culture of the place as the house hosted the founder of the country during the early days of his rulership.
- Bait Matbouli, which was once a traditional family house, has been turned into a center for Arabic Language and Culture that offers courses in Arabic language and culture.
- Altayebat International City is a complex of historical buildings that were turned into a museum for Islamic art and culture.
- Al-Balad Theatre, which was originally a traditional market, and has been adopted later on and it now serves as a cultural center and theater hosting concerts, performances, and other cultural events.

Those are some of the examples of buildings that were adopted and rehabilitated to serve a different function than their original one, and that enhances the economic status of the area by generating income via hosting those events and attracting local as well as international visitors.

**Findings**

The strategies adopted for the heritage conservation of Al-Balad have significantly been elevated prior to and post the announcement of Vision 2030 (Ghazze, 2020) of the country which one aims is to preserve the city's historic and cultural heritage which primarily includes Al-Balad as a UNESCO World Heritage Site, the goals include restoring and preserving its historic buildings, rehabilitating the infrastructure, promoting tourism, and developing a sustainable management plan to ensure its sustainability and longevity.

In terms of social conservation and due to the measures adopted the following results have been registered.

- The number of people visiting Al-Balad has increased by 50% (Waheeb, 2022) since the conservation of the heritage area has started, and the average length of stay has increased by 20% (Heba, 2022) and that's an indication that people spending more time in the outdoor places within Al-Balad which subsequently increase the social interaction among them.
- The awareness and pride of the local residents of Jeddah have increased as a result of including them in the decision-making in regard to the conservation of the old city. According to a study by Jeddah's Municipality, 70% of the residents expressed pride in their culture and heritage after the conservation (Waheeb, 2022).
- The sense of community and belonging has increased among the residents by 70%, and 60% of the residents said they are more likely to participate in community events due to the readiness of the place and the conservation measures that have been adopted (Ghazze, 2020).

On the other hand, and in regard to the economic aspect, a number of improvements and developments have been observed and registered in varying studies. Following are some of the outcomes related to the economic aspect of the conservation:

- The conservation has helped in increasing the job opportunities which increased by 50% since the conservation project launch (Waheeb, 2022), and the average salary within its premises has increased by 20% due to the increasing demand and thriving of the economic cycle. The number of shops and kiosks has increased by 41.7% from 1,200 stores prior to the conservation project to 1,800 stores and kiosks currently (Waheeb, 2022), aside from the temporary kiosks that are set during organized events throughout the year.
- The property value and demand have increased as well due to the conservation of the historic district, in a study conducted by Jeddah Municipality, it conducted that the property average value in Al-Balad has increased by 50% since 2009, and the property sold has increased by 30% since that time which is unprecedented as the area was considered unfit for living due to the lack of the basic services and infrastructure (Ghazze, 2020).

## Recommendations

Although efforts were made to conserve the historical area and to enhance its livability in terms of social and economic status, there are still areas to improve and develop to thrive and reach optimum results, following are set of recommendations based on the analysis and study of the approaches adopted and its results.

- Public social interaction can be further enhanced by organizing interactive events and seminars, as the current events do not necessarily encourage and offer space for communication between visitors, the building spaces could be used and readapt to host those events and activities.
- Utilize modern communication techniques such as barcode scanning and app development to raise the awareness and knowledge of the visitors about the conservation efforts and importance as well as detailed explanations about the history and stages of conservation that the building has gone through.
- Engage the community in the decision-making to decide the priority and importance of what building to renovate, and the methods used will elevate the sense of community and ownership among the residents.
- Reorganizing the urban fabric of the area in a way to help with the navigation easiness of the key buildings and distributing the commercial kiosk and activities among them, as the current spatial distribution increased the chances of spending time in unwanted territories as it is difficult to get to the required destination.
- Improve the infrastructure of the area for better services within adaptive reused buildings such as internet connection, water supply, sewage system, and others to promote livelihood within those parameters in general.

## Conclusions

An interdisciplinary endeavor called architectural conservation aims to sustain the historical relevance, artistic value, and functioning of existing structures. A unique UNESCO World Heritage Site in Ethiopia, the rock-hewn churches of Lalibela are an exceptional example of religious construction. However, there are serious conservation issues at the site that demand quick action. A thorough and multidisciplinary approach to architectural restoration is necessary to preserve the

preservation of the historical, cultural, and architectural relevance of the rock-hewn churches of Lalibela. This strategy ought to consider the difficulties these structures present. These landmark structures can be preserved for present and future generations to admire and enjoy by carrying out rigorous assessments, putting suitable conservation measures in place, and adopting ecologically friendly activities.

Effective conservation plans should also take the local community's socioeconomic conditions into account. A sense of ownership and responsibility can be fostered by involving the community and spreading knowledge of the value of maintaining cultural property, which will result in more sustainable conservation techniques. Collaboration with international organizations and the creation of specialized conservation funds may also be able to offer crucial assistance for ongoing upkeep and restoration projects. We can guarantee the long-term survival of these important historic sites by employing a diverse and adaptive strategy to the conservation of the rock-hewn churches of Lalibela and comparable architectural marvels. We can preserve these remarkable rock-hewn monuments' historical and cultural significance while also preserving their breathtaking beauty and spiritual heritage for future generations to enjoy.

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## Project based STEM activities as an effective educational technology in the context of blended learning<sup>1</sup>

### Проектна діяльність STEM як ефективна освітня технологія в контексті змішаного навчання

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#### Abstract

The study aims to investigate the implementation of project-based STEM activities within a blended learning framework in higher education. This approach encourages students' independent creativity and prepares them for contemporary work environments. STEM education is positioned as a tool to develop key competencies like multicultural understanding, linguistic skills, and adaptability. This innovative educational method emphasizes the real-world application of scientific, mathematical, technical, and engineering knowledge. The research methodology combines theoretical analysis with practical evaluation. Key findings underscore the significance of independent research, interdisciplinary integration, and skill development in a blended learning environment. A notable outcome emphasizes empowering students to craft scalable business models, such as startups, vital for success in today's world.

**Keywords:** blended learning, STEM education, project-based STEM activities, higher education students, readiness for research activities.

#### Анотація

Дослідження має на меті дослідити впровадження проектних діяльностей STEM в межах комбінованої освітньої програми у вищій освіті. Цей підхід сприяє незалежній творчості студентів і готує їх до сучасних робочих умов. Освіта STEM розглядається як інструмент для розвитку ключових компетенцій, таких як багатокультурне розуміння, мовні навички та адаптивність. Цей інноваційний освітній метод акцентує увагу на практичному застосуванні наукових, математичних, технічних та інженерних знань. Методика дослідження поєднує теоретичний аналіз із практичною оцінкою. Основні результати підкреслюють важливість незалежних досліджень, інтердисциплінарної інтеграції та розвитку навичок в комбінованому навчальному середовищі. Одним з основних результатів є надання студентам можливості розробляти масштабні бізнес-моделі, такі як стартапи, які є важливими для успіху в сучасному світі.

**Ключові слова:** змішане навчання, STEM-освіта, проектна STEM-діяльність, студенти вищих навчальних закладів, готовність до дослідницької діяльності.

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## Introduction

In recent years, there has been a growing recognition of the importance of STEM education in preparing students for the demands of the modern workforce. STEM, which stands for Science, Technology, Engineering, and Mathematics, focuses on developing critical thinking, problem-solving, and collaboration skills through an integrated approach to learning. As higher education institutions strive to meet the evolving needs of learners, they have turned to innovative educational technologies and pedagogical approaches to enhance the teaching and learning experience.

One such approach that has gained significant attention is project-based learning. Project-based learning involves students actively participating in real-life projects to deepen their understanding of the subject matter and develop relevant skills. When combined with the principles of STEM education, project-based learning can provide a robust framework for student engagement and achievement. However, the effective implementation of project-based STEM activities requires careful consideration of the learning environment. Blended learning, which combines face-to-face instruction with online learning experiences, has emerged as a promising model for integrating project-based learning into higher education. Blended learning offers a flexible and dynamic approach that can accommodate diverse learning styles and foster independent creative work.

Under the circumstances of working under martial law and the ongoing COVID-19 pandemic, higher education teachers in Ukraine are striving to implement modern models of organizing the educational process. Their aim is to improve didactic methods, means, and forms of teaching. To ensure the modernization and high-quality implementation of the learning process, clear and timely decisions, accessible explanations, and the introduction of innovative forms of education are required. This includes the implementation of STEM education within a blended learning model.

The blended learning model combines traditional approaches with online learning, with a focus on students acquiring and understanding knowledge through independent creative work. The fundamental principles of blended learning include personalized learning, comprehensive comprehension and assimilation of educational material, purposeful learning activity, and individual student responsibility for choosing

learning methods and achieving results (Stolyarenko, 2015).

These principles of the blended learning model align with the principles of STEM education, which is currently being actively implemented in educational institutions at all levels. STEM education involves the practical application of scientific, mathematical, technical, and engineering knowledge and skills, as well as integrated research and creative work by higher education students to master scientific knowledge methods (Patrykeieva et al., 2021).

Innovation in educational technologies forms the basis of STEM education. The versatility of the teacher's role allows for creative application and comprehension of these technologies (Chernomorets et al., 2019; Chernyavska & Khokhlina, 2022). Project-based STEM activities, in particular, are considered highly promising educational technologies that can enhance the effectiveness of the blended learning model and foster the development of essential life competencies in students, such as multicultural, linguistic, informational, political, and social skills (Kuzmenko & Dembytska, 2017).

The *purpose* of this article is to conduct a theoretical and empirical study on the implementation of project-based STEM activities as an effective educational technology within the blended learning context.

The *tasks* of this study are:

1. To examine the implementation and effectiveness of project-based STEM activities in fostering independent creative work among students.
2. To investigate the impact of project-based STEM activities on developing students' readiness for active engagement in contemporary work environments.
3. To assess the benefits and challenges of integrating project-based STEM activities into the educational process and propose recommendations for their effective implementation in higher education institutions.

## Literature Review

According to Almazroui (2023) project-based learning (PBL) is an instructional approach that emphasizes active, inquiry-based learning

through the completion of authentic, real-world projects. PBL has been widely recognized for its ability to foster critical thinking, problem-solving, collaboration, and communication skills among students. Numerous studies have shown positive outcomes in terms of student engagement, motivation, and deep understanding of concepts when PBL is integrated into the educational process (Hall & Miro, 2016; Ginting, 2021; Allen et al., 2011).

STEM education focuses on integrating science, technology, engineering, and mathematics in a multidisciplinary approach to foster the development of critical thinking and analytical skills. It aims to prepare students for careers in STEM fields and cultivate a deeper understanding of how these disciplines are interconnected in real-world situations. Huang et al., (2020) state that implementation of STEM education has been shown to enhance students' problem-solving abilities, creativity, and innovation skills.

Blended learning combines traditional face-to-face instruction with online learning activities. It offers flexibility in terms of time, pace, and place of learning, providing students with opportunities for independent study and collaboration. Blended learning has been shown to improve student engagement, motivation, and learning outcomes when effectively implemented (Sahni, 2019). The integration of project-based STEM activities in blended learning holds great potential for engaging students in authentic, hands-on learning experiences that connect theoretical knowledge with practical application (Kelley & Knowles, 2016). This approach allows students to work collaboratively, apply problem-solving skills, and develop a deep understanding of STEM concepts. The studies of Fini et al., (2018) and Domenici (2022) have demonstrated the effectiveness of project-based STEM activities in enhancing student learning outcomes, increasing motivation, and preparing students for future careers in STEM fields.

Researchers also highlights the various benefits and challenges associated with implementing project-based STEM activities in blended learning (Klontien & Wannasawade, 2016). Benefits include increased student engagement, improved problem-solving skills, and enhanced critical thinking abilities (Murphy et al., 2018). However, challenges may arise in terms of curriculum design, assessment methods, and technological infrastructure (Medeiros et al., 2017). Successfully implementing project-based

STEM activities in blended learning environments requires addressing these challenges as a crucial step.

A significant contribution to the development of the theory and practice of blended learning in Ukraine has been made by national scholars such as Buhaichuk (2016), Hurevych & Kademiia (2013), Tkachuk (2018), and others. The research of scholars Barna (2017), Buturlina et al., (2019), Kuzmenko & Dembytska (2017), Patrykeieva et al., (2019; 2021), Polihun et al., (2021), Slipukhina et al. (2020), Stryzhak et al., (2017), Chernomorets et al., (2019), Dychkivska (2015), Dobrovol'ska (2020), and others have contributed to understanding the essence of educational technologies and their application in STEM education.

Historically, the blended learning model in Ukraine started taking shape in the early 1950s. In 1951, the Small Electronic Counting Machine, the first computer in not only the then USSR but also Europe, was launched in Kyiv. Prominent computer scientists such as V. Glushkov, B. Malynovskyi, and K. Yushchenko played a significant role in testing and implementing computer technology, enabling educational institutions to actively incorporate it into the educational process (Sobchenko, 2021).

The blended learning model is based on activity-based and student-centered approaches to learning, aiming to develop individuals' readiness for active engagement and self-realization. The success of individuals in society relies on their ability to plan effectively, implement plans efficiently, find means for verifying the validity and significance of their actions, and analyze the consequences of their activities. These actions align with the principles underlying project-based STEM activities, which aim to foster critical thinking, problem-solving skills, and research competencies (Barna, 2017).

## Methodology

This study aimed to investigate the implementation of project-based STEM activities as an effective educational technology in blended learning, with a focus on the formation of higher education students' readiness for research activities. The research utilized a combination of theoretical and empirical research methods to gather and analyze data.

Theoretical analysis and generalization of psychological and pedagogical practice were conducted to provide a theoretical framework

and background for the study. This involved reviewing existing literature, scholarly articles, and reports on project-based learning, STEM education, and blended learning.

A survey was employed as a data collection method, using the Computer-Assisted Web Interviewing (CAWI) technique for online administration. The survey questionnaire was designed to gather information from the respondents regarding their experiences with project-based STEM activities and their perceived impact on their readiness for research activities. The survey was administered to 120 participants from higher education institutions that implemented blended learning and project-based STEM activities during the 2021-2022 academic year. In addition to the survey, expert evaluation was conducted to gather insights and expert opinions on the implementation and effectiveness of project-based STEM activities. Experts in the field of STEM education and blended learning were identified and invited to participate in the evaluation process.

The longitudinal method was employed to study the dynamics of the formation of higher education students' readiness for research activities. This involved collecting data at multiple time points to track changes and developments in their readiness for research activities over time.

The research was conducted by the STEM Education Department of the State Scientific Institution "Institute for the Modernization of Education Content" in Ukraine. The study focused on the content and results of the implementation of project-based STEM activities, their impact on the formation of students' worldview and social position, their process of finding their place in future adult life, and their personal self-realization in Ukraine.

The gathered data from the survey, expert evaluations, and longitudinal study were analyzed using appropriate statistical methods, qualitative analysis techniques, and comparative analysis to draw conclusions and make recommendations based on the findings.

## Results and Discussion

Project-based STEM activities aim to achieve a goal through a detailed examination of a problem, integrating scientific, technological, engineering, and mathematical knowledge, and culminating in a practical outcome. In this approach, the teacher provides support and

encourages students to actively search for information, establish project objectives and research methods, and seek solutions to specific educational and cognitive tasks. Students are given the autonomy to choose the format for presenting and defending their project results. A fundamental aspect of project-based STEM activities is the development of a student's readiness for research activity in higher education. This readiness is defined as personal preparation encompassing a strong desire for creative scientific knowledge and effective engagement, along with the necessary qualities, knowledge, skills, abilities, and a positive motivational and value-oriented attitude towards work (Chernyavska & Khokhlina, 2022). In relation to readiness for research activities, several components should be combined, including cognitive, motivational, informational, and activity-related elements, as well as important professional features of mental processes (cognitive and emotional-volitional spheres) and professionally significant personal traits (temperament, character, abilities) (Khokhlina, 2014).

This article delves into how students develop their motivation for research activities, which is a key factor in shaping their outlook on scientific work. The study determined the content and levels of this motivation based on previous research by Chernomorets et al., (2019), with a focus on two indicators: 1) whether the attitude towards research activities is positive or negative, and 2) the stability and effectiveness of that attitude. The nature of the attitude towards research and its application can vary from completely positive, interested, to indifferent. Stability represents the level of interest and emphasis on the fundamental aspects of research activity, which can be occasional or consistent. Effectiveness reflects positive reactions and the inclination to apply research findings, ranging from contemplative to productive engagement.

Based on these indicators (*nature of attitude, stability, effectiveness*), the motivational component of students' readiness for research activities can be categorized into the following levels:

- I. *High*: demonstrating a positive attitude towards research activities, independent research, theoretical and experimental study of phenomena and processes, substantiation of facts, and identification of patterns using scientific methods of knowledge.
- II. *Average*: displaying an interested, but passive and relatively unstable attitude

towards research activities, independent research, theoretical and experimental study of phenomena and processes, substantiation of facts, and identification of patterns using scientific methods of knowledge.

- III. *Low*: exhibiting a passive, contemplative, and occasional or persistent negative attitude towards research activities and independent research, theoretical and experimental study of phenomena and processes.

The survey and longitudinal methods were employed to investigate the levels of formation of the motivational component of readiness for research activities among students in higher education. The collected data are presented in Table 1, which provides a comparative analysis and generalization of the data in relative values (%).

**Table 1.**

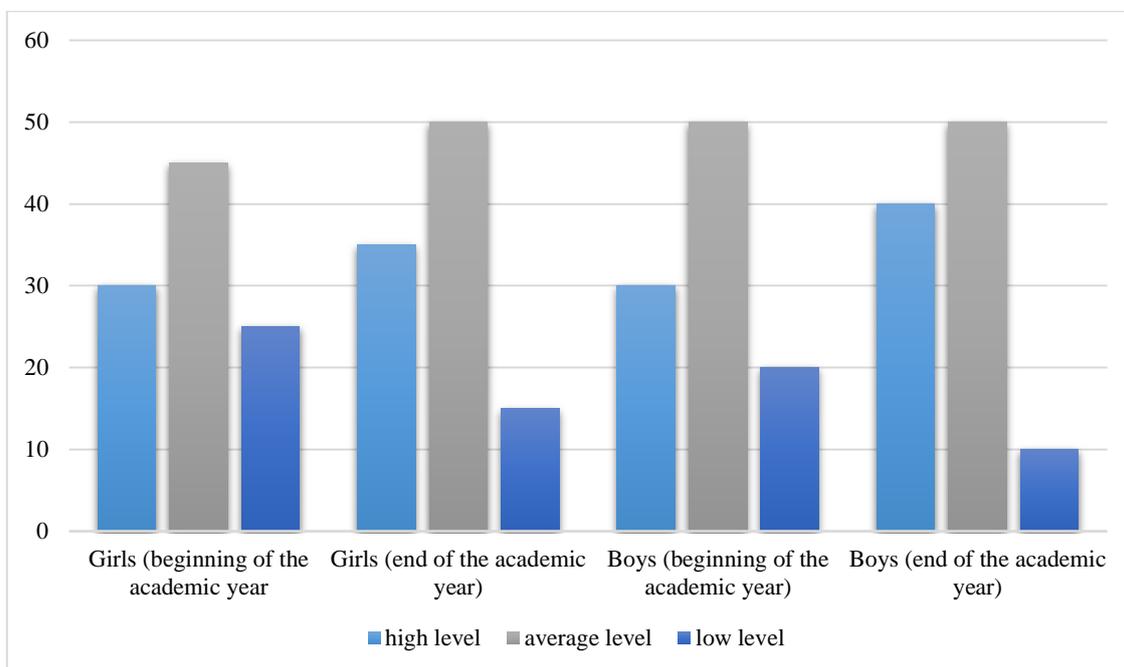
*Data on the levels of formation of the motivational component of readiness for research activities among higher education students (%)*

| Levels of formation of the motivational component | Applicants for higher education    |      |                              |      |
|---|------------------------------------|------|------------------------------|------|
|   | The beginning of the academic year |      | The end of the academic year |      |
|   | Girls                              | Boys | Girls                        | Boys |
| <i>High</i>                                       | 30                                 | 30   | 35                           | 40   |
| <i>Average</i>                                    | 45                                 | 50   | 50                           | 50   |
| <i>Low</i>  | 25                                 | 20   | 15                           | 10   |

**\*Source:** Compiled by the authors

Figure 1 illustrates the fluctuating levels of readiness for research activities among higher

education students, specifically in terms of their motivational component.



**Figure 1.** Data on the levels of formation of the motivational component of readiness for research activities of higher education students (%)

**\*Source:** Compiled by the authors

The data presented in Table 1 and Figure 1 illustrate that at the beginning of the academic year, the majority of both girls and boys demonstrate an average level of the motivational component of readiness for research. This indicates that students hold an interested but passive and somewhat unstable attitude towards

research activities, including independent research, theoretical and experimental studies, factual substantiation, and the identification of patterns using scientific methods of knowledge. It is worth noting that project-based STEM activities are newly introduced at this stage.

By the end of the primary year, there is an increase in the proportion of students with a high level of formation in the motivational component. This is evident through their heightened interest in problem-solving, analysis of literary sources, and factual substantiation. Notably, girls display a greater inclination towards experimental study of phenomena and processes, their applied nature, and the identification of regularities using scientific methods of cognition. On the other hand, boys exhibit a stronger interest in creating finished products.

The data suggests that the implementation of project-based STEM activities throughout the school year resulted in a 10% decrease in the number of students, both girls and boys, with a low level of the motivational component of readiness for research.

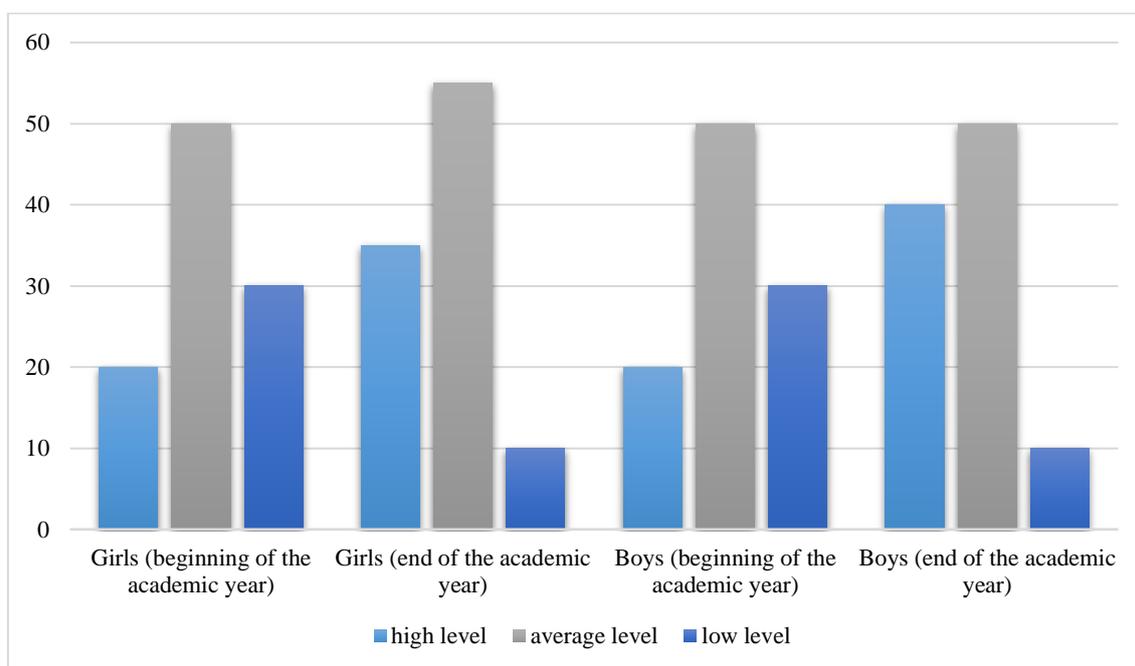
The data obtained from teacher evaluations, using expert evaluation and longitudinal methods, regarding the formation levels of the motivational component in students are presented in Table 2 and Figure 2. To ensure comparability and generalizability, the data is presented as relative values (%).

**Table 2.**

Data from a teacher survey on the levels of formation of the motivational component of readiness for research activities among higher education students (%)

| Levels of formation of the motivational component | Applicants for higher education    |      |                              |      |
|---|------------------------------------|------|------------------------------|------|
|   | The beginning of the academic year |      | The end of the academic year |      |
|   | Girls                              | Boys | Girls                        | Boys |
| <i>High</i>                                       | 20                                 | 20   | 35                           | 40   |
| <i>Average</i>                                    | 50                                 | 50   | 55                           | 50   |
| <i>Low</i>  | 30                                 | 30   | 10                           | 10   |

\*Source: Compiled by the authors



**Figure 2.** Data from the survey of teachers on the levels of formation of the motivational component of readiness for research activities of higher education students (%)

\*Source: Compiled by the authors

The data obtained from the expert evaluation method reveals that teachers strongly believe in the effectiveness of project-based STEM activities. They attest that the majority of students exhibit a highly positive attitude towards research activities, actively engaging in

the solution of scientific and applied issues, and demonstrating a keen interest in both theoretical and practical exploration of various phenomena and processes, even in the context of blended learning. Notably, by the end of the academic year, there was a 15% increase in the high level

of motivational component formation among girls and a 20% increase among boys.

The data analysis highlights project-based STEM activities as an educational technology that fosters students' independent learning and cultivates their readiness to creatively acquire knowledge within the blended learning model, utilizing innovative educational technologies. As a result of the theoretical and empirical study, valuable insights were obtained regarding the formation of students' readiness for research activities in higher education. This was achieved through the implementation of innovative educational technologies, specifically project-based STEM activities within a blended learning model. The data analysis indicates that the majority of higher education students possess a positive, stable, and effective attitude towards independent research work, which enhances the effectiveness of distance learning and facilitates the successful resolution of various situations and tasks that arise during active work.

Furthermore, gender differences in the perception and implementation of knowledge, skills, and abilities were negligible. The learning outcome appeared to be more influenced by the direction and quality of external and internal motivation for active engagement. However, according to the survey conducted with teachers, girls tend to demonstrate a more responsible attitude towards research activities and exhibit greater persistence in their learning. It is noteworthy that by the end of the academic year, the high level of motivational component formation increased by 15% among girls and by 20% among boys. Thus, engaging in project-based STEM activities offers numerous benefits, particularly in promoting a hands-on, experiential approach to learning. Students are encouraged to actively participate in the learning process by applying their knowledge and skills to real-world problems. This fosters a sense of autonomy and encourages them to take initiative in their learning journey. Moreover, such activities also promote collaboration and teamwork among students. With the requirement to work in groups, students learn from and support each other, enhancing their problem-solving abilities and nurturing their social and communication skills. Project-based STEM activities encourage students to think creatively, explore various possibilities, and take risks, thereby boosting their confidence and self-efficacy. This mindset is essential in developing a growth mindset that is vital for success in today's rapidly evolving world.

In addition, project-based STEM activities are an excellent opportunity for students to develop their independent creative work. They foster a love for learning, encourage critical thinking, and equip students with the skills and mindset necessary for lifelong learning and success in their future careers (Murphy et al., 2018).

As students learn through project-based STEM activities, they face real-world challenges that require collaboration, communication, and effective problem-solving. These activities develop essential skills for success in modern work environments, such as working in teams, navigating complex tasks, and adapting to rapidly changing situations (Samsudin et al., 2020). By encouraging creative and innovative thinking, students are motivated to explore new ideas, think outside the box, and come up with unique solutions. This cultivates an entrepreneurial mindset and prepares them to meet the dynamic demands of the modern workplace.

These activities often involve the use of technology and digital tools, providing practical experience in utilizing relevant technologies. This familiarity with technology enhances their digital literacy, a highly sought-after skill in today's digital era. Ultimately, project-based STEM activities prepare students for active engagement in contemporary work environments by nurturing both technical and transferable skills necessary for success in a rapidly changing and competitive job market.

The study establishes a significant relationship between the formation of students' readiness (motivational component) for research activities and the integration of STEM education. However, it should be noted that these findings do not claim to provide an exhaustive solution to the problem. Further research is required to explore other structural components of students' readiness for research work within the context of blended learning. Besides, integrating project-based STEM activities into the educational process can present the following challenges:

- Implementing project-based STEM activities requires significant time commitments from both students and educators (Aksela & Haatainen, 2019). It can be challenging to find adequate time within the curriculum to allow for in-depth project work.
- Project-based STEM activities often require access to specific resources, materials, and equipment (Van Horne & Bell, 2017).

Limited availability or inadequate funding for these resources can hinder the effective implementation of such activities.

- Educators need to possess sufficient knowledge and expertise in STEM fields to effectively guide students through project-based activities (Beswick & Fraser, 2019). Ensuring that teachers are adequately trained and prepared to facilitate these activities can be a challenge.

To overcome these challenges and ensure the effective implementation of project-based STEM activities in higher education institutions, the following recommendations can be considered:

1. *Curriculum integration:* Integrate project-based STEM activities into the existing curriculum to ensure alignment with learning objectives. This can help address time constraints by incorporating project work into existing coursework.
2. *Collaboration and partnerships:* Foster collaborations with external organizations, industries, and community partners to access additional resources, expertise, and real-world contexts for projects.
3. *Professional development:* Provide ongoing professional development opportunities for educators to enhance their knowledge and skills in STEM fields and project-based learning methodologies.
4. *Flexible learning spaces:* Create flexible learning spaces that are equipped with the necessary resources and technology to support project-based STEM activities. This can include dedicated labs, makerspaces, or access to virtual simulation tools.
5. *Assessment strategies:* Develop appropriate assessment strategies to evaluate student learning and progress in project-based STEM activities. This may include a combination of individual and group assessments, portfolios, presentations, and self-reflection.

By addressing these challenges and implementing these recommendations, higher education institutions can successfully integrate project-based STEM activities into the educational process, fostering a more engaging and impactful learning experience for students.

## Conclusions

In summary, using project-based STEM activities in blended learning has proven to be an effective educational tool. These activities encourage students to learn through hands-on,

inquiry-based methods that incorporate science, technology, engineering, and mathematics. Furthermore, project-based STEM activities help students develop essential skills like critical thinking, problem-solving, collaboration, and creativity. The results of this study demonstrate that project-based STEM activities have a positive impact on students' readiness for research activities and their motivation to actively participate in scientific exploration. Expert evaluations and student surveys indicate that these activities are effective in promoting a positive attitude towards research, even in a blended learning environment.

STEM education has been recognized as a highly effective approach that promotes interdisciplinary learning and the practical application of knowledge in real-world scenarios. Nonetheless, this study seeks to delve deeper by underscoring the importance of project-based activities as a powerful tool to further enhance students' research readiness and foster their creativity and innovation skills.

STEM activities are incredibly important for society as a whole, as they contribute to the overall advancement and well-being of communities. By nurturing interest and proficiency in STEM among students, societies can cultivate a highly skilled workforce capable of addressing emerging challenges and driving economic progress. Encouraging and involving underrepresented groups, particularly women, in STEM activities is vital for promoting equality and diversity. By engaging individuals from diverse backgrounds, we can harness a wider range of perspectives and talents to foster innovation and address societal challenges more effectively. STEM activities promote lifelong learning by encouraging curiosity, critical thinking, and problem-solving skills. These skills are not only beneficial for educational pursuits but also for personal and professional growth in an increasingly technology-driven society. Also, STEM activities focus on solving global challenges, such as climate change, energy sustainability, healthcare advancements, and technological advancements. By encouraging students to think critically and creatively, STEM fosters a problem-solving mindset to tackle these complex issues.

Fields in STEM drive economic growth by enhancing innovation, creating job opportunities, and driving technological advancements.

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## Main types of podcast advertising: foreign and Ukrainian experience

### Основні види реклами в подкастах: зарубіжний та український досвід

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#### Abstract

The article is devoted to considering podcast advertising as a means of monetizing. The podcast advertising types are characterized. An analysis of the domestic experience of using podcasts for advertising purposes was carried out. The purpose of the article is to consider the main types of podcast advertising and analyse their use in the Ukrainian segment of the media market. Podcasts of Radio NV, Suspilny, "The Ukrainians", "Ukrainian Pravda" have been analysed. Content analysis of podcasts was chosen as the main research method to identify the types of advertising used in domestic podcasts. The main characteristics of the classification of podcast advertisements and the types that are distinguished within these characteristics have been established. It was found that Ukrainian podcasts most often use self-promotion, but there are isolated cases of partnership and sponsorship (usually at the end of the podcast) and mentions that can be identified as native advertising. It was concluded that it is too early to talk about the monetization of podcasts thanks to advertising as a mass phenomenon, it is rather an exception to the rule than a regularity. An effective way of interacting with the audience is thematic projects and those

#### Анотація

Статтю присвячено розгляду реклами в подкастах як засобу їх монетизації. Охарактеризовано види реклами, що використовують у подкастах. Проаналізовано вітчизняний досвід залучення подкастів у рекламних цілях. Мета статті – розгляд основних видів реклами, що застосовують у подкастах та аналіз їх використання в українському сегменті медійного ринку. Проаналізовані подкасти Радіо НВ, Суспільного, «The Ukrainians», «Українська правда». Основним методом дослідження обрано контент-аналіз подкастів на предмет виявлення видів реклами, що застосовують у вітчизняних подкастах. Встановлено основні ознаки класифікації подкаст-реклами та види, що виокремлюють у межах цих ознак. З'ясовано, що українські подкасти найчастіше використовують саморекламу, але є поодинокі випадки партнерства та спонсорства (зазвичай наприкінці подкасту) та згадки, котрі можна ідентифікувати як нативну рекламу. Визначено, що про монетизацію подкастів завдяки рекламі як масове явище говорити рано, це радше виняток з правил, ніж закономірність. Дієвим способом взаємодії з аудиторією є тематичні проєкти та ті, що

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ones, which are designed for a specific brand, which is their sponsors.

**Keywords:** advertising, podcasts, podcast advertising, podcast monetization.

### Introduction

In recent times, the Ukrainian media landscape has seen a surge in podcasts. This rise can be attributed to their unique form of communication and the current epidemiological and socio-political climate both in Ukraine and globally. Podcasts have become a vital tool to bridge the gap caused by reduced travel and face-to-face interactions. With this growth, a pertinent issue has emerged: the need for effective monetization to ensure their sustainability. Podcast advertising stands out as a promising avenue for this monetization. This study delves into the extent of podcast advertising adoption both within Ukraine and internationally, aiming to identify the most effective advertising strategies. The findings will offer insights to Ukrainian podcasters on maximizing their monetization efforts through targeted advertising techniques.

### Literature Review

The problem of studying podcast advertising is popular among scientists around the world. In particular, Havryliuk (2022) and Dmytrovskyi (2015, 2017) studied signs of podcasts and their types, as well as Shekhavtsova & Protopopova (2019) researched using them for special purposes, e.g. for learning languages or improving images of organizations. So, Havryliuk (2022) studied the thematic range and genre variety of podcasts, presented in the Ukrainian Internet media, and Dmitrovsky – signs and typology of Ukrainian podcasts. Shekhavtsova & Protopopova (2019) considered the theoretical foundation of podcasting as the most modern interactive and communicative technology for learning English, as well as defining characteristics and selection criteria from the point of view of foreign language teaching methods. Benkivska (2017) studied the role of podcasting as a tool for marketing communications, and Romanenko & Semchuk (2021) emphasized podcasts' significance in digital marketing in the modern world. Dosenko (2018) paid attention to researching perspectives of podcast journalism as a popular form of radio broadcasting on the Internet nowadays while Dubenska (2020) explained how to develop the podcast market in Ukraine. In the context of advertising podcasts' classification works by Bulakh (2021) devoted to online advertising

розроблені під конкретний бренд, який є їх спонсорами.

**Ключові слова:** реклама, подкасти, подкаст-реклама, монетизація подкастів.

classification and Karpenko (2009) – about type-species composition of advertising publications are of great interest too. Unfortunately, there have not been any scientific works dedicated to the level of using advertising podcasts.

Foreign studies concerning the effectiveness of advertising podcasts and consumers' attitudes to them are presented by Wang & Chan-Olmsted (2023), Bezbaruah & Brahmhatt (2023), Kim et al., (2022), Brinson & Lemon (2022), Moe (2021), Reilent et al., (2022), Spinelli (2019), etc. So, the research by Wang & Chan-Olmsted (2023) is based on a national survey to examine how content engagement, host-audience connection, and ad format relate to listeners' brand attitudes. The results of the research confirm that content engagement can play both a positive and a negative role. At the same time, scientists emphasize that relationships between the host and the audience (host-audience), including both relational perceptions and real online interaction, as well as a host's advertising format, are positive prognostic factors. They also point out that susceptibility to advertising may reinforce or cancel some associations.

Bezbaruah & Brahmhatt (2023) emphasize that the effectiveness of advertising podcasts is their growing popularity among consumers because of their ability to offer valuable content. As a result, brand owners are watching consumers on podcast platforms and trying to reach them with advertising. This is evidenced by the growth of brand budgets spent on podcasts. However, behavioural intentions as a result of such interactions between brands and consumers have not been sufficiently studied. Bezbaruah & Brahmhatt (2023) in the research on the development of such concepts as advertising value, attitudes to advertising and to the brand, formation of purchase intention, etc., paid attention to the moderating role of advertising placement before, after and in the middle of the video. The study confirmed the effectiveness of advertising podcasts to create a relationship between the consumer and the brand. In particular, informative advertising was the most effective.

Kim et al., (2022) researched the positive and negative impact of personalized and non-personalized advertising on online newsreaders in conditions of multitasking. Scientists studied the interaction between the level of ad personalization and media multitasking, as well as the effect of both on the level of privacy and ad evaluation. The results showed a negative impact of personalized advertising on consumers' attitudes towards advertising and the brand. Besides, privacy concerns caused the personalized advertising message to have a negative impact on ad ratings.

Based on the theory of parasocial interaction, Brinson & Lemon (2022) analyse how trust and relationships with podcast hosts influence listeners' attitudes towards the brand and their behaviour. Marketers recognize that podcast hosts become trusted influencers with loyal communities, which in turn provides additional opportunities for consumer engagement and positive reactions for brands. That is, attracting hosts to announce information about brands (native blocks) can be an effective way to their advertising.

Moe M. (2021) analyses listeners' attitudes toward advertisements in podcasts and the impact of advertisements read by the host on consumers. Because it is the host in the process of interaction with consumers who forms their trust assessment and ensures the dissemination of information. The effectiveness of podcasts as a means of distributing marketing information has been also investigated by Estonian scientists Reilent et al. (2022). Researchers note the relatively modest use of podcasts for marketing purposes, suggesting to increase podcast revenue by increasing podcast visibility, increasing customer awareness of podcast advertising opportunities, sharing podcast success stories, and implementing ways to measure podcast effectiveness. In this context, there was an interesting study by Linares de Palomar & Neira Borrajo (2017) about the experience of broadcasting the Serial podcast, which can be considered a successful example of attracting advertisers. In *Guide to Podcasting*, n.d.-c (QUIRK, 2015) the research was also devoted to the study of the Serial podcast, paying attention to podcast funding models. The purpose of this study was to examine the changes taking place in the podcasting space with an emphasis on the business aspects. In particular, the author tried to answer the questions: What business models are effective in today's conditions, and if they are viable/sustainable in the long run? The research found that sponsorships, advertising,

crowdfunding, live broadcasts, and paid subscriptions to podcast platforms are the most common funding models for podcasts. It is advertising that is a profitable stream that is developing most rapidly. Other models are long-term, trying to turn audience engagement and loyalty into permanent cash flow.

But despite the increased attention of researchers to the history, types and genres of podcasts (Havryliuk (2022), Dmytrovskyi O. (2017), methods of monetizing podcasts (QUIRK, 2015), Linares de Palomar & Neira Borrajo (2017), the level of personalization of podcasts (Kim et al., (2022), consumer attitudes towards advertising in podcasts (Moe, 2021), Wang & Chan-Olmsted (2023), and the effectiveness of podcasts as marketing channels in foreign markets (Reilent et al., (2022), Spinelli (2019), Benkivska (2017), Romanenko & Semchuk (2021), as well as other above-mentioned issues, podcast advertising in the Ukrainian media space has not been studied enough, which emphasizes the relevance of the research. The level of using advertising information for the monetization of Ukrainian podcasts is of particular interest.

Therefore, the goal of the research is to consider the main types of advertising podcasts and analyze their use in the Ukrainian segment of the media market.

### Methodology

To identify the primary advertising types in domestic podcasts, we employed various research methods, including descriptive analysis, generalization, a systematic approach, and content analysis. Among these methods, content analysis was predominantly used to scrutinize 44 podcasts, which sum up to 1061 episodes, from renowned Ukrainian media outlets such as Radio NV, Suspilny, "The Ukrainians", and "Ukrainian Pravda". To be more specific, the breakdown is as follows: HB podcasts consist of 9 podcasts with 346 episodes (as of April 2023), Community podcasts have 11 podcasts with 159 episodes, "The Ukrainians" feature 7 podcasts with 101 episodes, and "Ukrainian Truth" has 17 podcasts tallying 460 episodes (all figures are up to April 2023).

Our analysis focused on the placement of advertising information—whether at the beginning, middle, or end of the podcasts. We also delved into the nature of advertising within these segments, examining them based on the ad's location within the podcast and the type of sponsoring entity.

## Results and Discussion

Although the number of podcasts released in 2022 decreased compared to 2019, 2020, and 2021, according to Listen Notes (Listen Notes, n.d.), a podcast search engine and database, it is possible to consider podcasts as an effective platform for the distribution of advertising information taking into account their global total (3,126,985 and 168,201,688 episodic June 2023) (Riverside, 2023). There are several reasons for this efficiency such as:

- 1) the popularity of podcasts and their considerable number, as evidenced by the above statistics;
- 2) the thematic and genre variety of podcasts which allow segmenting the audience – consumers of advertising information – maximum clearly;
- 3) listeners' loyal attitude to podcast advertising. For example, Edison's report indicates that 76% of listeners are receptive to podcast advertising. Besides, unlike YouTube ads, 33% of respondents “never or rarely” skip podcast ads, due to the integration of ads into the content of podcasts, thanks to which they perceive them organically, without any irritating or denying the advertising information. This kind of advertising causes more trust, which has a psychological basis, because people are inclined to trust everything they have a favourable attitude, and they listen to podcasts without any coercion and usually choose them according to their own needs and preferences;

- 4) podcast creators are interested in attracting advertisers because they allow the podcast to be monetized, and therefore to spend the received funds on developing the resource itself.

Listeners' loyal attitude to podcast advertising is also evidenced by a study by the IAB (Interactive Advertising Bureau), according to which listeners tend to trust podcast hosts and welcome their personal views and jokes about a product or service. It has become common for brands to send hosts a sample or example of the product or service they are promoting so that they can share their own experiences of using them. Consumers are more likely to respond to sincere and authentic conversations about a product than to pre-written texts and talking points.

Advertisements read by the host generate 55% of the revenue.

Summarizing the results of foreign research, it can be argued that podcast advertising can be represented by commercial breaks in podcast content. In this case, the host reads the advertising text by broadcasting a pre-recorded commercial. At the same time, ads can be integrated into the podcast content, being a single whole with it (native advertising), like an interview with a certain specialist who mainly presents his own company's services. According to the brand needs, a separate podcast can be created, the so-called branded/branded podcast, etc. All presented types of advertising interaction can be considered by the classification method. Generalized data on existing types of podcast advertising are presented in Table 1.

**Table 1.**  
*Classification of podcast advertising*

| Nº | Classification criteria                                      | Types of advertising                   | Characteristics  |
|----|--|--|--|
| 1. | According to the method of providing advertising information | re-recorded commercial audio clip      | the video is recorded by the host which starts automatically before the podcast. Usually such videos are professionally recorded, they are only inserted into the podcast in the right place |
|    |  | spoken by the host                     | an announcement delivered by the podcast host  |
|    |  | an invited expert                      | the interlocutor of the podcast who is a representative of the company   |
|    |  | native advertising                     | advertising embedded in the podcast (mentioning a product or service in the context of the podcast topic)  |
|    |  | sponsorship/partnership presentation   | mentioning the company as a sponsor/partner of the program. The listeners' loyalty to the brand and its recognition is increased   |
|    |  | branded podcast/ season                | podcasts are created under a separate brand, by the brands themselves usually  |
|    |  | advertising modules / thematic episode | these are mini-podcasts on various topics within the main releases, the leitmotif of which is a certain brand. The brand can participate in the recording of                                 |

|    |  |  |  |
|----|--|--|--|
|    |  |  | the module and/or choose a topic that suits both the brand and the podcast   |
| 2. | According to the method of ads in podcast location                 | pre-roll ad  | it appears at the beginning of the podcast and lasts 10-15 seconds   |
|    |  | mid-roll ad  | it appears in the middle of the podcast and lasts 30-90 seconds  |
|    |  | post-roll ad   | it appears at the end of the podcast and lasts 15-30 seconds   |
| 3. | According to the method of payment for the advertising information | Standard   | an agreed price is paid for advertising space in audio. The price depends on the placement of advertising in the podcast and the duration of the time spent on advertising |
|    |  | Affiliated   | podcasters are only paid when their promotion leads to sales or conversions  |
|    |  | Branded  | the brand creates an image event which aims to increase its recognition, establish interaction with consumers and thus stimulate sales, i.e. performs an image function.   |
| 4. | According to the method of insertion ads into podcasts             | dynamic insertion                                    | advertising is recorded separately   |
|    |  | embedded advertising                                 | recorded in the main audio file of the episode   |
|    |  | self-promotion                                       | podcast authors do not receive money for advertising, because they are promoting themselves  |
| 5. | According to the type of sponsor                                   | on behalf of the manufacturer of the product/service | advertising is paid for by the manufacturer of the product or service  |
|    |  | on behalf of sales agents                            | advertising is paid for by the merchant  |
|    |  | cooperative advertising                              | advertising is paid for jointly by the manufacturer and the seller of the product  |
|    |  | advertising on behalf of private individuals         | advertising is ordered by an individual for his own needs  |

All types of advertising presented in Table 1 are actively used in foreign podcasts, scientists, as evidenced by a review of foreign sources are studying their effectiveness, but it is necessary to identify their use in the Ukrainian segment of the media market. For this, the podcasts saved on the "NV.UA" website were selected, since the most relevant and popular domestic podcasts are collected on this platform.

It is important that these podcasts are not only NV, but also, as evidenced by the own analysis of the site and confirmed by Havryliuk (2022) "...the podcasts presented on its platform are republished from "Radio NV" or from the third-party media resources: "Ukrainska Pravda", "Media Kunsht", "Detector. Media", "Hromadske", "Suspilne. Podkasty", various organizations - Creative Industries Association of Ukraine, Center of United Actions, Politclub.Ucu, PeopleForce, Kyiv-Mohyla Business School, individual authors – Oleg

Novikov and Taras Chmut ("The right to float"), Eduard Kovalenko (" A pair of mouths"), Vlad Nozdrachev ("Wlad Nozdrachev"), Ivan Horovsky ("Founders") and others. In total, before the beginning of the full-scale invasion of the Russian Federation on the territory of Ukraine, 255 podcast projects were presented on the "NV.UA" platform. With the beginning of the war, the platform is replenished with new podcasts, the topics of which are closely related to Russia's military actions against our country."

It was found that in Radio NV podcasts (9 podcasts, 346 episodes, April 2023), promotional information tended towards self-promotion (repetition of the podcast title or tagline with that title) at the beginning and end of the podcast. There are usually no ads in the middle of podcasts. There are isolated cases of partner advertising (partner of the "pharmaceutical company Arterium" program in the podcast Antibiotics according to the rules.) (Fig. 1, 2).

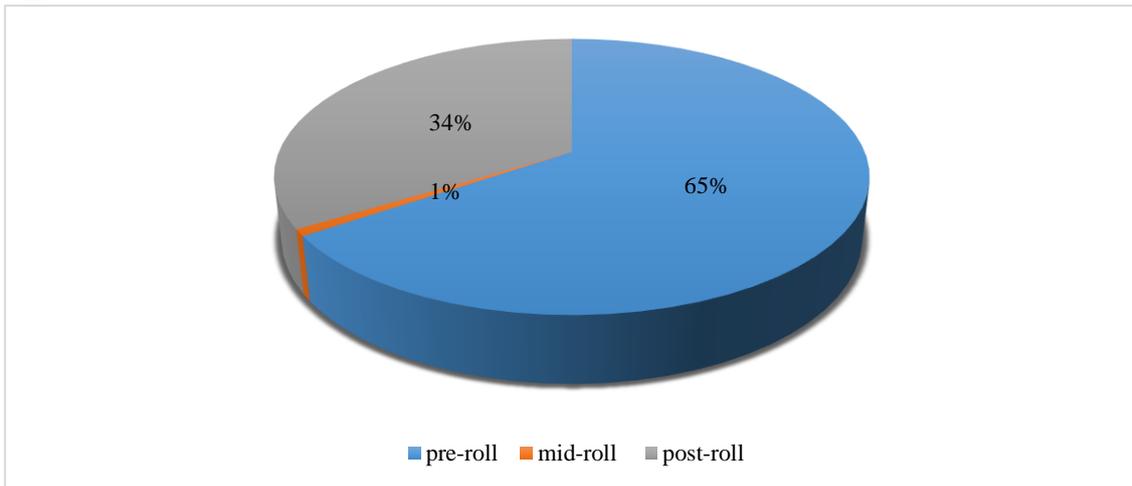


Figure 1. Radio NV. Type of advertising according to the method of ads in podcast location.

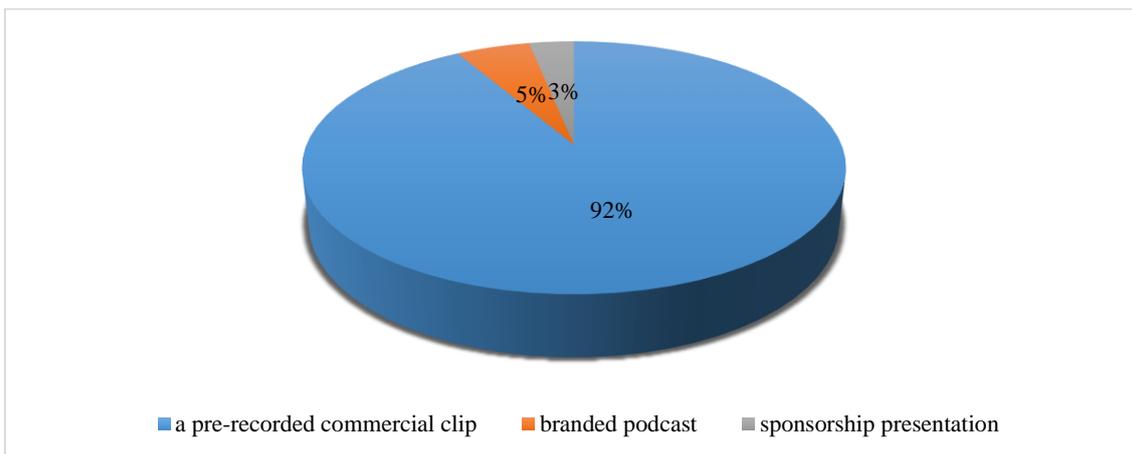
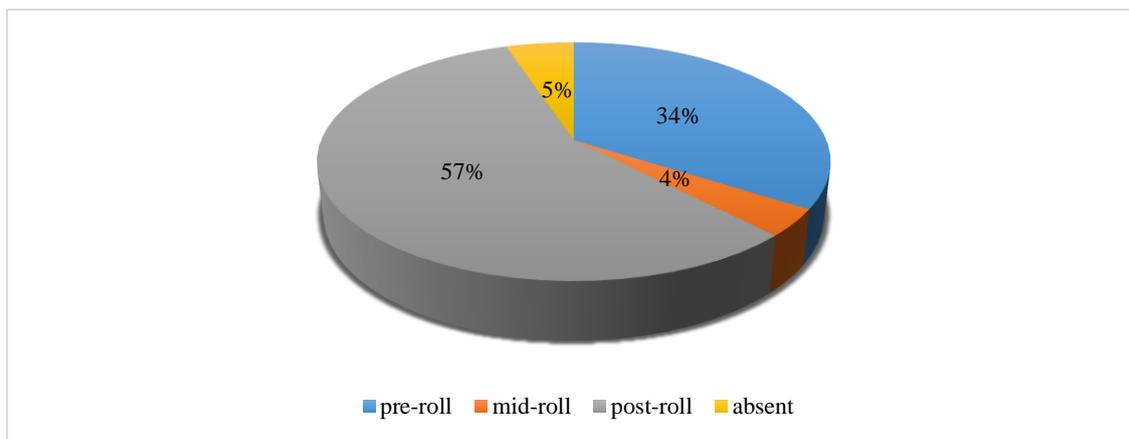


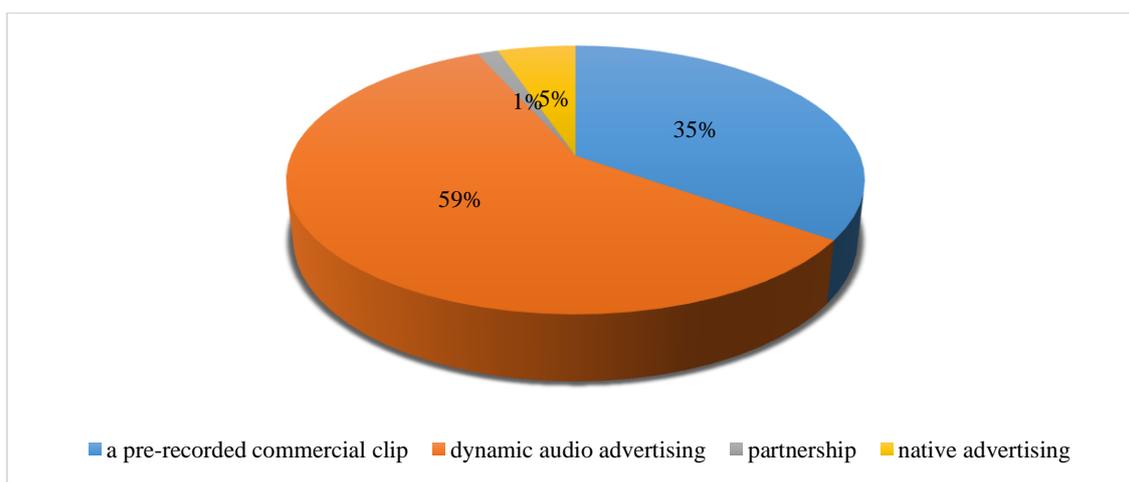
Figure 2. Radio NV. Type of advertising according to the method of providing advertising information.

The situation with advertising on Suspilny (11 podcasts, 159 episodes as of March 2023) is almost the same as on Radio NV: mostly self-promotion is used at the beginning (You are listening to Suspilny podcasts), calls for interaction (“We are waiting for your thoughts.....”), there are no ads in the middle of podcasts, except for rare exceptions. At the end of most podcasts, advertising tends towards self-promotion: no third-party ads, there are calls to subscribe to podcasts and set favourites, as well as announcements of upcoming episodes, which can be considered as self-promotion too. For example, in one of the podcasts Kyiv-Mohyla Business School is mentioned at the end, in another one a partner was mentioned, and at last, Media Kunsht was called in one of podcasts. Such mentions made by hosts can be identified as partnerships. Therefore, Suspilny does not use

commercial advertising. However, some mentions can be identified as native advertising. So, for example, in the Main podcast (11 episodes), at the beginning of each episode, there is a pre-recorded video, and an announcement of the podcast itself (its title, summary and participants), which can be marked as self-promotion. In the middle of the episodes, there is no advertising, but during the episodes from time to time, the DSM 5 manual is mentioned, which can be taken as a native advertisement. At the end of the podcast, it was noted that the Kunsht media podcast was created, which can be considered as its advertisement. In general, the analysis of Suspilny's podcasts has proved that advertising in them tends to self-promotion (advertisement of the project itself), there are isolated cases of partners of the release, which is less an exception than a regularity (Fig.3,4).



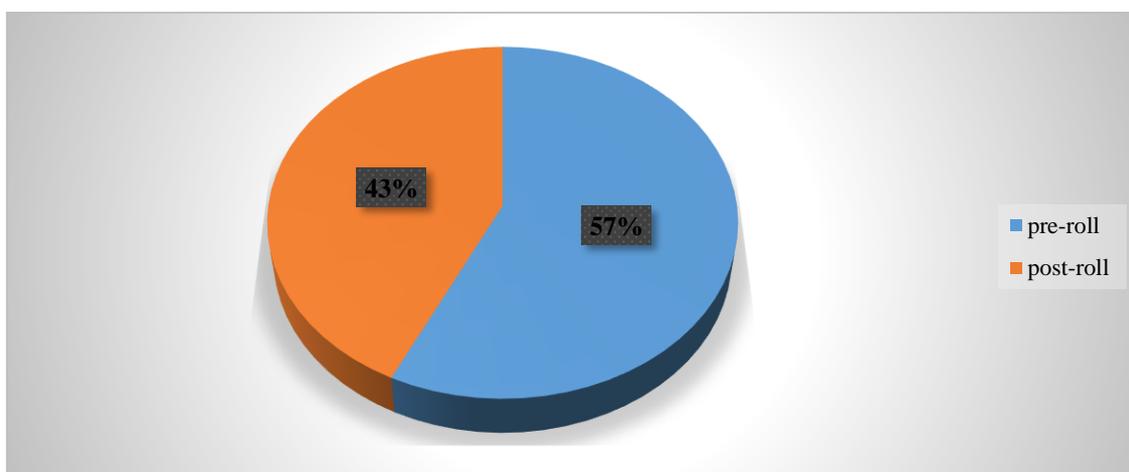
**Figure 3.** Suspilne. Podkasty. Type of advertising according to the method of ads in podcast location.



**Figure 4.** Suspilne. Podkasty. Type of advertising according to the method of providing advertising information.

The study of advertising information in the podcasts of the community "The Ukrainians" (7 podcasts, 101 episodes) showed that self-promotion prevails at the beginning of the podcast. This is usually information about the podcast and the host, the podcast tagline, an

invitation to join the community, etc. At the end, hosts also often offer to join the community, rate the podcast, favorite, add constructive criticism, recommend to friends, and more. Ads are usually absent in the middle of listened podcasts. (Fig. 5)



**Figure 5.** «The Ukrainians». Type of advertising according to the method of ads in podcast location (7 podcasts, 101 episodes)

There are isolated cases of partner advertising (IREX, Gurgura recording studio, Zero Waste Alliance Ukraine, etc.). For example, in the podcast "Home" (in 11 episodes) there was advertising of Zero Waste Alliance Ukraine as the partner of the program. Here the partners are mentioned at the beginning of each podcast. In three episodes of the "Reporters" podcast, they emphasize that the Gurgura recording studio made the recording. In the "Life in the Sideboard" podcast (in 6 episodes), the partner IREX is named at the end.

According to the method of providing advertising information in the podcasts of "The Ukrainians" community, advertising delivered by the host prevails (usually at the beginning or end of the podcast), it's more self-promotional in content. There are also pre-recorded audio clips that invite listeners to join the community or inform about a podcast partner, for example, Zero Waste Alliance Ukraine in the "Home" podcast. Therefore, there is also a presentation of the partnership. Unfortunately, branded podcasts were not detected within the analysed ones. (Fig. 6)

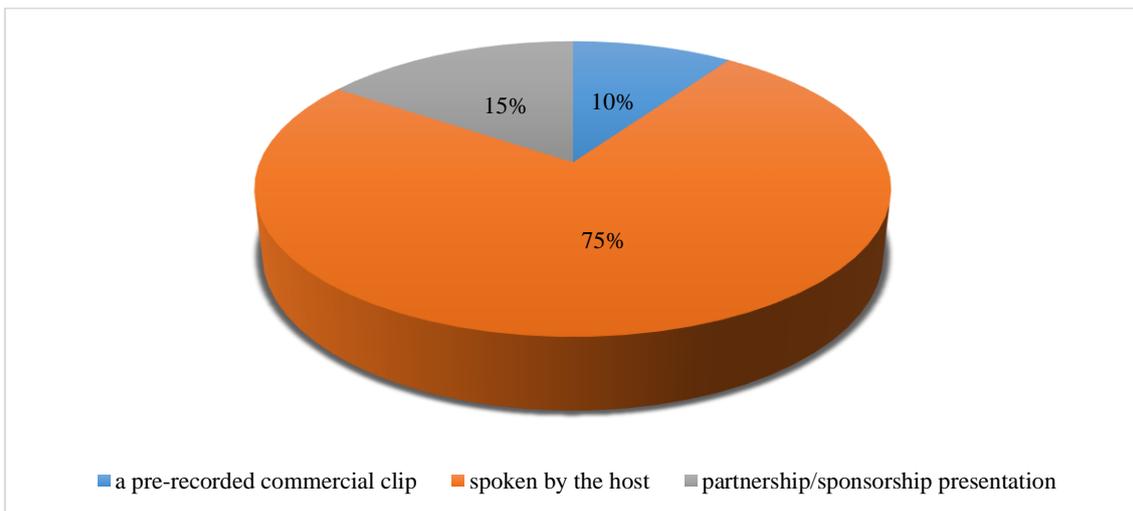


Figure 6. «The Ukrainians». Type of advertising according to the method of providing advertising information.

In the podcasts of the online publication "Ukrainian Pravda", self-promotion prevails at the beginning of the podcast (information about the podcast and the host, the slogan of the podcast, and an invitation to join the community. In the end, the hosts also often offer to join the community, rate the podcast, set favorites, add constructive criticism, recommend to friends etc.

The study of advertising information in the podcasts of the "Ukrainian Pravda" community (17 podcasts, 460 episodes) proved that self-advertisement prevails at the beginning (27%) and at the end (73%) of the podcast. In the middle of the analyzed podcasts, advertising information is usually absent (Fig. 7).

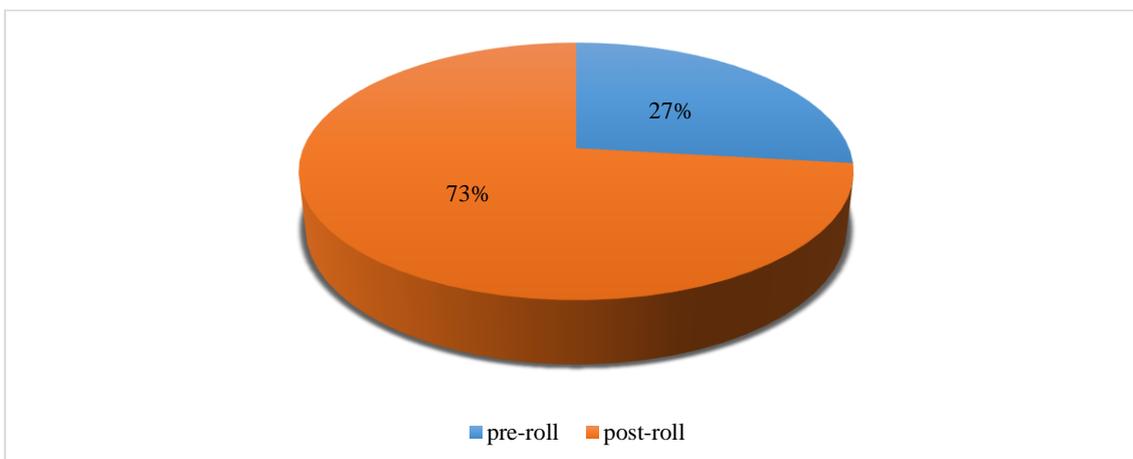
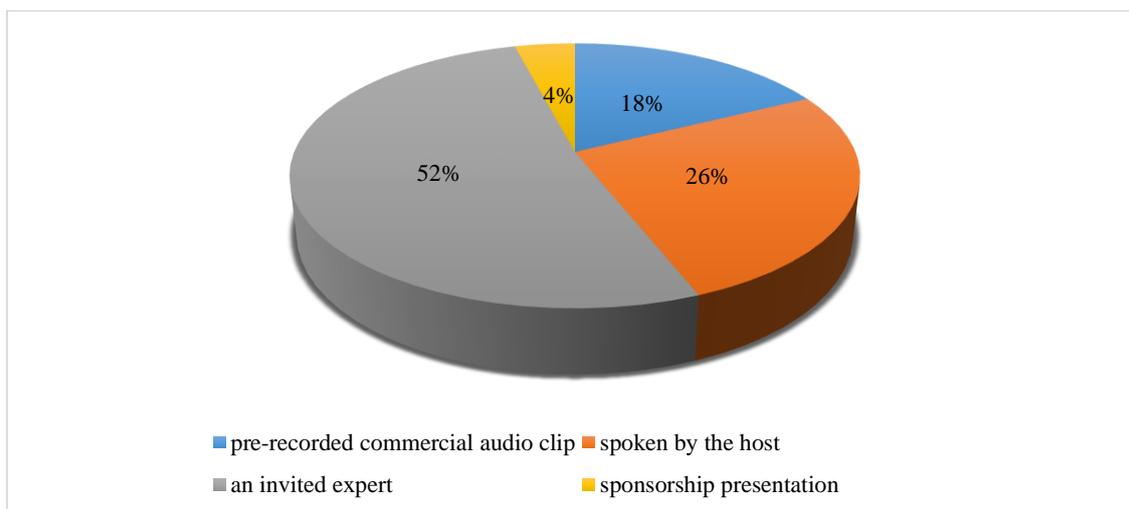


Figure 7. «Ukrainian Pravda». Type of advertising according to the method of ads in podcast location.

According to the method of providing advertising information, these are pre-recorded videos, in particular, which invite the community to social networks. There are isolated cases of

partner advertising (program partner: OLX, Centre for Defense Strategies, Consulate General of Germany in Donetsk with an office in Dnipro).



**Figure 8.** «Ukrainian Pravda». Type of advertising according to the method of providing advertising information.

It was found out that advertising podcasts (branded podcasts) are a separate phenomenon in the Ukrainian podcast industry. These are those podcasts that are specially created for advertising purposes, but their leading functions are informative and entertaining, thanks to which a loyal attitude towards the advertiser is achieved, and data about whom is perceived as accompanying information that does not cause negative emotions. A series of podcasts from FUIB bank "Wheel of Stories" posted on the Radio NV platform, in which the history of the bank itself is presented in the context of the thirty-year history of the formation of the Ukrainian state, can be an example. The announcement of the podcast on the website of Radio NV says: "To mark the 30th anniversary of Ukraine and the FUIB bank, audio plays about the life of Ukrainians during the years of independence were presented in 30 booths of the Ferris wheel. The project continues to live on in the NV podcast, presenting 11 audio plays of the series... Through episodes from the lives of Ukrainians, in which we can hear echoes of our own experiences, PUMB invites us to take a spin on the "Wheel of Stories" to remember the path we have travelled and be inspired for new achievements together!". By updating the memory of certain historical moments, the podcast stirs its own memories in the soul of every Ukrainian, at the same time, combining the stories of the FUIB into the history web by emphasizing the reliability of the bank itself, achieving the main advertising goal of the podcast. Therefore, this experience can be called

a successful example of a branded podcast. The podcast "Comfort Begins with Safety" is also advertising, aimed at advertising the holding of SHERIF security companies, but at the same time, the content is informative and useful for ordinary citizens, because the programs raise issues that interest everyone.

Another type of brand presence in a podcast is a partnership. An example of a podcast of this type is five episodes of "Antibiotics according to the rules", which explain the history of antibiotics, the rules of use, debunk myths about them, that is, the content is primarily useful for consumption, and the pharmaceutical company Arterium is mentioned as a partner of the program. The short duration of the video (only 1-2 minutes) helps to listen to them to the end. Another podcast of this type, "Frankly about cancer", recorded with the support of TomoClinic, is dedicated to modern approaches to combating this disease, the clinic's employees answer the following questions: "Can one doctor cure cancer on his own? "Is treatment available in Ukraine? etc.

According to the foreign experience of recent years, there is an obvious tendency to increase the audience and, accordingly, the number of loyal listeners, which means opportunities for monetizing podcasts thanks to advertising. The conducted research proved that commercial advertising is almost never used in the analyzed Ukrainian podcasts. Mentions of the program's partners and sponsors are rather common, and

branded podcasts can be considered as a separate niche. The most significant part of advertising information in Ukrainian podcasts is self-promotion. At the same time, information is often duplicated at the beginning and end of the program. The difference is that, according to the method of providing advertising information, a pre-recorded commercial clip is usually used at the beginning of the podcast, at the end the information is spoken by the host (sponsorship/partnership presentation). At the same time, one

or another option prevails on different platforms. Thus, NV prefers advertising at the beginning, Suspilne – at the end of podcasts, "Ukrainian Pravda", and "The Ukrainians" are both at the end and at the beginning of the podcast. Promotional information in the middle of the podcast is usually absent. Single cases of native advertising have been fixed. In some cases, there is no advertising information in podcasts at all (Fig.9).

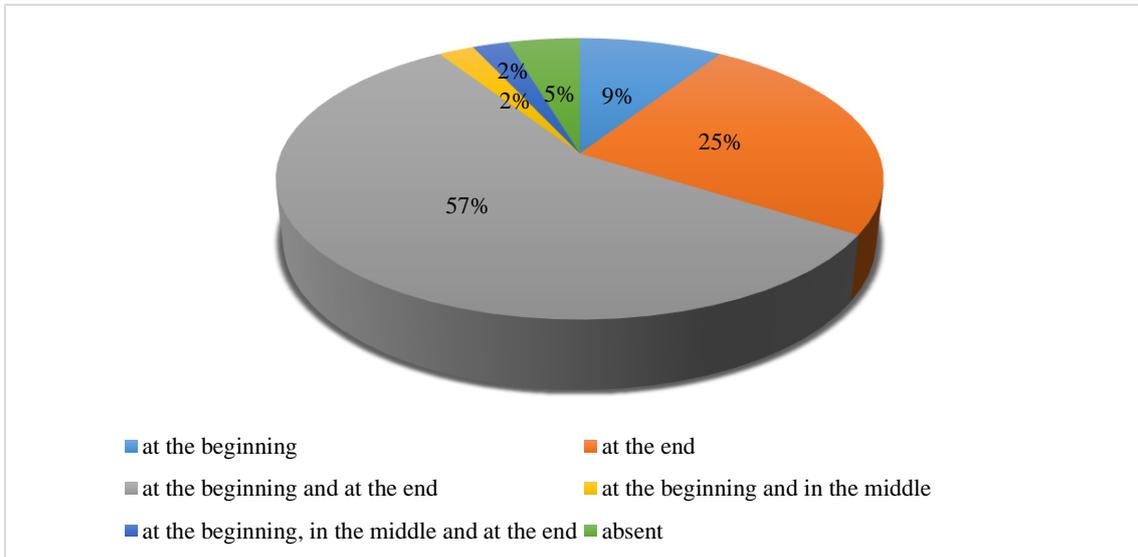


Figure 9. Use of advertising in Ukrainian podcasts.

According to quantitative indicators of the diagram (Fig. 9) only 4 podcasts (9%) of 44 use advertising only at the beginning of the program, in the middle – none, at the end of the podcast – 11 podcasts (25%). Besides, there is also advertising both at the beginning and at the end of the program – 25 (57%), at the beginning and in the middle – in 1 podcast (2%), at the beginning–in the middle–at the end – 1 podcast too (2%), and absent at all – in 2 podcasts (5%).

### Conclusions

Thus, the results of the research made it possible to conclude that the use of advertising by Ukrainian podcasts for the purpose of monetization is at an initial level. It requires, firstly, familiarizing domestic entrepreneurs with the possibilities of podcasts as a channel for the distributing marketing information, and secondly, disseminating the information about the advantages of different ways of presenting advertising information in podcasts and their effectiveness in foreign countries. In particular, it can be recommended for compatriots to pay attention to use native advertising, which is treated more loyally, advertising delivered by

presenters and advertising blocks placed in the middle of the podcast, which were almost never used in the analyzed podcasts.

In general, it is possible to state that podcasts are gradually becoming a new trend in the Ukrainian media market, providing additional opportunities for interaction with the audience, in particular through advertising. With a stable increase in the audience, the options for monetizing podcasts will also grow, in particular through advertising, which will be facilitated by an in-depth study of foreign experience, which is a perspective for our further research.

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## The choice of toys by early childhood children

### Вибір іграшок дітьми раннього віку (ukr)

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#### Abstract

The article deals with the problem of choosing toys by children aged 0-48 months. It represents how children's situational involuntary interest in toys gradually transforms into cognitive interest. The latter determines the young children's choices in various spheres of their life and, in particular, in choosing among the most accessible and feasible items – toys. The children's cognitive interest in the choice of toys has been studied in the object and toy environment. A comparative analysis of children's choices among three types of the most common toys was carried out. It has been proved that figurative-interactive toys are the most popular among young children, figurative toys are in the second place, and collapsible toys are in the third place. The functional features of toys that encourage children to choose them have been revealed: sound, mobility, colour brightness. The more such features a toy has, the more often children choose it, the longer and more meaningful they play with it. It has been found that young children choose toy according to their psycho-physical, sensory capabilities and skills to act with it.

**Keywords:** choice, early age children, figurative, interactive and collapsible toys, properties of a toy, toys.

#### Анотація

У статті висвітлена проблема вибору іграшок дітьми від 0 до 48 місяців. Репрезентовано як ситуативний мимовільний інтерес дітей до іграшок поступово трансформується у пізнавальний. Останній визначає вибіркову діяльність дітей раннього віку у різних сферах життєдіяльності дитини і, зокрема, у виборі серед найбільш доступних і посильних їм предметів – іграшок. Пізнавальний інтерес дітей у виборі іграшок вивчався у предметно-іграшковому середовищі. Здійснено порівняльний аналіз виборів дітей серед трьох видів найбільш розповсюджених іграшок. Доведено, що пріоритетними у дітей раннього віку виявилися образно-інтерактивні іграшки, на другому місці – образні, на третьому – збірно-розбірні. Виявлені функціональні ознаки іграшок, які спонукають дітей обирати їх: звучання, рухливість, яскравість кольорів тощо. Чим більше таких ознак властиві іграшці, тим частіше діти її обирають, тим довше і змістовніше граються з нею. Виявлено, що діти раннього віку добирають іграшки відповідно до своїх психо-фізичних, сенсорних можливостей та умінь діяти з нею.

**Ключові слова:** діти раннього віку, вибір, властивості іграшки, іграшки, образні, інтерактивні та збірно-розбірні іграшки.

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## Introduction

A toy is one of the objects that attracts a newborn's attention from the first days of life. It accompanies the child from an early age throughout preschool childhood. That is why toys have been created by adults and children since prehistoric times and have changed and become diverse according to the national and civilizational development of mankind. Many researchers have studied various aspects of preschool children's development by means of certain types of toys: figurative, didactic, mobile, musical, etc. These aspects are less studied in regard to early age children.

At the present stage, there is still a lack of comparative studies on young children's choice of a certain type of toy among others and analysis of children's activities with them. Previous studies (Artemova, 2019; Artemova, 2021; Artemova, Borova & Marieieva, 2022) revealed a clearly expressed selective attitude of children from the first year of life to certain toys and leading actions and games with them. At the same time, all known recommendations in early childhood and preschool pedagogy on the selection of toys take into account their importance for certain aspects of children's development from the point of view of adults. There are no recommendations that would take into account the child's interests and his or her selective attitude to toys and play with them. That is why there was a need to find out the main priorities of toy selection by infants and toddlers.

The purpose of the study is to find out the priorities of young children's choice of toys. It involves the following tasks: 1) to study the young children's choice of toys of a certain type among others; 2) to study the features of toys that stimulate children's choice.

The results of the study will allow educators to select toys for children of different age categories of early childhood more skilfully, according to children's preferences and the developmental effect of toys.

## Literature Review

The toy as an object that accompanies children's activities in the game, as well as its influence on children has been studied in different historical periods in various countries and in many aspects: collapsible toys in sensory education (Froebel, 2005; Montessori, 2014), history of toy (Arkin, 1935; Elkonin, 1999), ergonomics of toys for their perception and use by children (Radina &

Ezykeeva, 1968; Florina, 1973; Manchuk, 2018), role of toys in sensory development of young children (Kryvonis, Drobotiy & Achkasova, 2012), in the emergence and development of preschoolers' role-playing games (Havrysh & Shchehlova, 2004; Hladun, 2005; Artemova, 2021), folk toys in child's development (Bogoraz-Tan, 1934; Bogoraz-Tan, 1939; Fihol, 1956; Naiden, 1999). Much less attention was paid to toys regarding young children (Ministry of Education and Science of Ukraine, 2006). The mentioned research focused on a particular type of toys and children's play with them; the toy was considered from the psychological or pedagogical position of an adult as an object intended for the implementation of certain cognitive and developmental tasks of teachers or parents towards children.

According to Topaloğlu & Aslan Gördesli (2012), the child's choice of toys for a play is important because they are a kind of bridge between the imaginary and real situation during the process of play. Scholars also indicate that the toy should meet both the child's age and safety requirements.

Dag N., Turkan, Kacar, & Dag H. (2021) trace the influence of age-related characteristics on the content of children's play activities from birth to 18 years and identify priority games and toys that can be used in them. They also emphasise the role of paediatricians and family physicians as advisors to parents on the choice of toys for children in terms of their safety and impact on children's mental, social, emotional, mental and physical development.

Onur Sezer & Sadioglu (2012) consider that toys are closely related to a child's self-presentation, imagination, interests, developmental level, and understanding of gender. The researchers analyse the impact of toys on a child's physical, mental, social and speech development during early childhood. They emphasise that the primary factor in choosing a toy is the child's age. In particular, they believe that babies like colourful rattles that stimulate all their senses, and these toys play a big role in the development of their senses, which are yet to be formed. Toddlers prefer to play games where they assemble and disassemble towers or other structures from blocks of different shapes and sizes. Using their newly acquired wrist movement skills, children under 24 months prefer simple LEGO-sets that they can use with other toys to act out simple stories. Preschool children like different objects

that stimulate the development of their creativity. Based on this, scientists conclude that children choose toys that enhance their skills, which they are acquiring at their current age. That is, according to Onur Sezer & Sadioglu (2012), every child should play with toys that are appropriate for their development and needs.

A similar point of view is supported by Healey, Mendelsohn & COUNCIL ON EARLY CHILDHOOD (2019). According to them, the best toys are those that match children's developing skills and abilities and help them to form new skills. Some toys are able to "grow with the child" – can be used in different ways as the child develops – 18-month-old child may struggle to use the cubes functionally (e.g., by stacking them one on top of the other), while 24–36-month-old child may use them to participate in complex symbolic play (e.g., feeding a doll with a cube instead of a bottle) or to build a bridge, demonstrating the development of spatial perception.

Clarke (2022), based on the age characteristics of infants, toddlers, and pre-schoolers, recommends parents to have a separate set of toys for each year of a child's life that would stimulate their development.

Dauch, Imwalle, Ocasio, & Metz (2018), Koşkulu, Küntay, Liszkowski, & Uzundag, (2021), Sivaraman & Skoler, (2023), studying the problem of the number of toys that a young child needs, concluded that when children have fewer toys, it leads to better quality of play, enhances the development of creativity and promotes longer interaction with an adult involved in children's play. Scientists explain that babies and toddlers are more easily distracted when there are many toys in front of them. This leads to a shorter duration of play with each toy and a loss of opportunities for deeper learning of particular toy. A large number of toys also does not contribute to the duration of joint play between a child and an adult. In addition, researchers point out that open-ended toys, which allow children to play in several ways, may be the best option for toddlers.

The study by Todd, Barry, & Thommessen (2016) was devoted to the choice of toys by children aged 9-32 months of different genders. According to their results, both boys and girls showed a tendency to increase the dominant choice of stereotypical toys for boys. At the same time, the scholars emphasise that biological differences give boys the ability to determine how to act with a toy in a mental way, while girls

are more interested in looking at the face of a figurative toy and are better at developing fine motor skills and manipulating objects. In general, researchers have found that children choose toys according to their gender - boys are more likely to play with masculine toys, and girls are more likely to play with feminine toys. The study by Lam (2023) notes that the tendency to choose toys based on the child's gender begins to be clearly visible from the age of 36 months, even when playing with a new toy.

Taking into account the analysis of available research in psychological and pedagogical science, we consider it necessary to carry out research on the choice of toys (figurative, figurative-interactive, figurative-collapsible and collapsible) by young children.

### Methodology

The study was based on a personality-oriented approach to the child, which covers identifying, studying, understanding the interests of a kid that determine his or her various choices, as well as on the principle of subject-subject interaction between an adult and a child, which involved taking into account and supporting the child's choice.

The following research methods were used: observation of children's behaviour to find out the interests and corresponding choices of young children in the toy environment; creation of situations for children to find their interests and make them choose a toy among toys of different types; recording of children's actions, statements, games, behaviour with chosen toys by means of photo, video, audio recording; surveying educators and children's parents in order to identify interests, choice, and use of toys by children.

The obtained data were subject to description, comparative analysis, generalisation, scientific interpretation, and evaluation.

The studying young children's interests and choices took place in the conditions of the subject-toy environment in families and preschool educational institutions in Ukraine and in Germany. During the research, 990 choices of toys by children were identified and analysed.

### Results and Discussion

The scholars' principled position was formed under the influence of modern global trends in the humanistic approach to the child who grows

and develops in the conditions of democratisation of social and educational relations between the family and the preschool education institution (Melnyk, Vertuhina, Artemova, Avramenko, & Pavlushchenko, 2020). First of all, the toy was considered as an object chosen by children according to their own preferences and psycho-sensory capabilities. Also, the toy was studied as a means of indirectly encouraging the child to perform functional

actions with it and, therefore, as a stimulus for the development of meaningful games of young children (Artemova, 2019; Artemova, 2021; Artemova et al. 2022). This approach ensured the child's self-expression, self-realisation (Reipolska, 2020) in game actions, episodes of the game plot and self-expression in game roles.

The analysis and interpretation of the research results are presented in Table 1.

**Table 1.**  
*Children's interest and choice of toys (number of choices)*

| Children's age              | up to 12 months | 12-24 months | 24-36 months | 36-48 months | Total |
|-----------------------------|-----------------|--------------|--------------|--------------|-------|
| Figurative toys             | 66              | 96           | 90           | 48           | 300   |
| Figurative-interactive toys | 120             | 210          | 72           | 24           | 426   |
| Figurative-collapsible toys | 0               | 18           | 36           | 12           | 66    |
| Collapsible toys            | 18              | 102          | 66           | 12           | 198   |
| Total                       | 204             | 426          | 264          | 96           | 990   |

Table 1 shows that children are interested in figurative toys even before the age of 12 months.

They are mostly attracted to soft animal toys. In the age 12-24 months, children's interest in toys and choice of them expands due to the increasing of their assortment. Along with toy images of various animals, children aged 12-24 months are interested in and choose dolls and toys to play with: children's kitchen, other household appliances, and medical instruments. Children know how to act with such objects because adults use them in activities with or in the presence of babies. As toddlers aged 24-36 months expand their understanding of the environment, they reproduce it in play with a wider range of toys: baby dolls, a doctor doll, cartoon characters, dinosaurs, and various utensils. Interest of children aged 36-48 months in figurative toys somewhat fades due to the satisfaction of the need for their active use in various games in previous years. For this reason, female children, closer to 48 months become more interested in and choose new toys, such as a Barbie doll and a dollhouse. Thus, the peak of interest in and choice of figurative toys is between 12 and 36 months. This trend has an explanation. According to previous research (Artemova, 2019), by the age of 12 months, plot play only begins in the form of individual imitative play actions. In fact, the plot of the game (a meaningful chain of play actions) emerges from 12 to 24 months. Therefore, children are interested in and need toy household appliances to reflect the adults' current actions. At the age of 24-36 months, toddlers already reproduce elements of play roles – acting as mum, dad, car

driver with the appropriate toys. They also often act like a doctor with some "medical instruments". Toys such as a doctor dolls (Aibolit, Dottie McStuffins, Peso from *Octonauts cartoon*) are interesting to them as an image, but they do not help them to realise the role. Children manipulate such toys like directors, i.e., move them, speak for them, developing a directorial game. Role-playing and directing games reach their peak at the age of 36 months. But children who play roles themselves need toys or objects necessary for the characteristic actions of the image they like and reproduce. Therefore, the images of people and animals expressed in a toy are of less interest to them and are chosen less often than before, when children were not yet able to identify themselves with them in a game role.

Childrens' (0-24 months) interest in figurative-interactive toys and their choice grow twice as compared to interest in figurative toys. They are interested in toys that can act somewhat independently by being able to set in motion. Toddlers' (24-36 months) interest in figurative-interactive toys decreases slightly, and after 36 months, it halves. From the age of 12 months, children are interested in a more diverse set of toys, dividing their choice between figurative, interactive and collapsible toys. This is due to the sensory and motor development of children, in particular, small hand muscles and motor locomotion.

Some collapsible toys are designed in the form of certain images (stacking toy in the form of a duck, sorter in the form of a car). The choice of

these toys was recorded only in a few children after 12 months; interest of children aged 24-36 months in them grows twice, but it decreases after 48 months.

At the same time, children's interest in collapsible toys without a fixed image was quite significant. A selective attitude towards them was already noticed in children aged 0-12 months; at the age of 12-24 months, interest in such toys increased almost 6 times; however, it decreased by a third in children aged 24-36 months, and was clearly manifested only by 2 children at the age after 36 months. Children aged 36-48 months made structures from collapsible toys according to the situation dictated by the game; sometimes they guessed an image in the construction by association (for example, G. aged 38 months, showing a tower made of several parts, commented: "Ice cream! Ice cream!"). Children aged 24-36 months were not yet able to create an image based on a task, picture or adult model.

In general, summarizing the analysis of the data given in Table 1, we note the following. At the age up to 12 months, children show interest in different toys; it mainly concerns the choice of figurative toys. However, babies prefer figurative-interactive toys that attract them with sound, mobility, brightness, that is, not so much with their image, but with their interactive characteristics. Children aged 12 to 24 months are twice as likely to be interested in choosing different toys. However, even at this age, the predominant kids' choice is still figurative toys. Children choose figurative-interactive toys twice as often among them. At the age of 24-36 months, children's interest in figurative toys generally decreases, but they most often choose figurative-interactive toys. Thus, if we analyse the choice of different types of figurative toys by young children, the following priority is obvious: they most often choose figurative-interactive toys, then figurative, and, finally – collapsible.

As the data summarised in Table 1 shows, most of the toys chosen by infants among the figurative toys were figurative-interactive. This prompted us to find out what exactly attracts children of the first year of life to these toys. The analysis revealed the following interactive properties of such toys:

- 1) sound of toys: sound effects, the ability of rubber toys to squeak, bug to buzz, duck to quack, doll, telephone to talk;
- 2) melodies, singing of musical toys – musical carousel, toy piano, dog, bird, elephant,

fawn, bunny that sing, musical cube with images of different animals on its sides, multi-functional music centre;

- 3) attractive colours, their change, flickering, brightness, contrasts;
- 4) movement of toys: cars, motorcycles, which drive, ball, that bounces, rolls; dog, cat, turtle, which walk, finger theatre with images of animals that are set in motion by fingers;
- 5) pleasant tactile sensations: softness of the toy, it is pleasant to stroke, squeeze, press on it;
- 6) size, weight: fits in the palm of the hand, comfortable, easy to use – hold, lift, shake, tap with a toy (teether to chew, massage the gums),
- 7) practicality of the toy in use, when a child with still imperfect sensory and motor capabilities can use it in the game.

Children are most interested in toys with a set of interactive features, for example, a beetle that sounds like different animals, speaks, changes colours, moves on the floor; a duck that quacks, tilts and raises its head, steps with its paws, flaps its wings, lays eggs; a finger theatre with images of animals that can be moved by bending and unbending fingers, imitating their sound; a bear that sings and speaks. Such toys encourage the child to imitate the sounds of conversations with them, singing, dancing.

We will demonstrate the interest of children of different genders in *figurative toys*:

0-12 months

Girls are interested in soft toys, for instance S. (from 3 months) chose fish; V., U., H., S., G. – various soft animal toys – dogs, cats, bears, penguin, and rubber dog.

Boys are also interested in soft toys: A., M., 3., D., T. (from 3-6 months), M. (from 8 months), A., O. chose dogs, cats, rabbits, chickens, horses, cows, goats, bull, birds, hares, bear, elephant, rhino, lion, hedgehog, fish, shark, etc.

12-24 months

Girls S., G. chose a Ukrainian girl-doll, that sings; E., V., V., V., V., V., O., M., S., M., V., V., O. (from 14-18 months) – pets (cat, dog, horse, pig), aquatic creatures (fish, whale, stingray, frog, crocodile); M., S., G. (12-18 months) – doctor's/nurse's instruments.

Boys D., A., A. chose toy animals (horses, goats, dogs, kittens, rooster, duck, bear cubs, monkey, mice, hares); D. – toy kitchen, soldiers.

24-36 months

Girls S., G. chose baby dolls, animals, food, dishes, household appliances, medical instruments; V. – kinder-surprise toys without small details, cartoon characters.

Boys: E. preferred baby dolls, dishes, dinosaurs; A. – soft, rubber, plastic animals (panda, squirrel, cow, horse).

36-48 months

Girls S., G. chose cartoon characters, baby dolls, soft toys (elephant, Peppa Pig, cat), toy kitchen, V. – Barbie dolls, dolls' house, M. – dinosaurs, V. – medical kit, toy hairdresser, toy kitchen.

Boys R., B. were interested in dinosaurs, cars, soldiers.

Here are examples of the revealed girls' and boys' interest in *figurative-interactive toys*:

0-12 months

Girls: V. chose a talking doll, a toy piano with programmed melodies and animal sounds; S., G., Al. (from 3-8 months) – rattles, musical toys; Mar., M., S., G. – glowing balls, cars that make sounds and glow; S. (from 3 months) – finger theatre with images of animals; S., G. – duck that quacks, walks, lays eggs, clockwork animals – cat, dog, turtle, etc.

Boys: E. chose robots; Z. – mobile, musical carousel; M., Mack, Mick, D. (from 3-7 months) – car; D. – bizi-cube; E. – tractor, excavator.

12-24 months

Girls preferred to play with different toys: V. chose interactive animals; S., G., Al. – doll strollers; V. – rolling toy Bunny; S., G., V., M. – balls, musical instruments, balloons; V., S., Zl., M., D., N., K., G, S., G. – trucks and cars with opening hood, doors, lifting body, tractor with trailer, garage.

Boys Ar., D., An., Ig., Myk., E., S. chose car, tractor, ball; M. – music house.

24-36 months

Girls S., M., S., G. – dress-up doll, baby doll, car, kettle from the toy kitchen that makes a sound when it boils.

Boys D., B., N., S., Myk. – different cars, tractor; B. – transformer.

36-48 months

Girls chose dress-up doll, baby doll, car, kettle from the toy kitchen that makes a sound when it boils, dancing cactus, interactive house.

Boys R., E., B. – ball that makes sounds, cars, transformers, robots, gun that shoots balls, military vehicles, helicopter.

Also, we found out the choice of *collapsible toys* by children of different genders:

Girls and boys at the age of 0-12 months chose stacking toys – stacking rings, puzzles, nesting boxes, stack up cup toys.

12-24 months

Girls A., Z. S., G. chose construction sets with large details; O. – LEGO-constructor set, S., G. – stacking blocks, geosorter

Boys D., S., M., E., E. played with cubes, construction set, puzzles, mosaic,

24-36 months

Girls U., S., G. preferred puzzles; V., S., G. – cubes, construction sets.

Boys: D. – stacking blocks, construction set; O. – LEGO construction set.

36-48 months

Girls used puzzles, mosaic, Lego constructor, prefabricated house.

Boys chose stacking blocks, construction set, transformer cars, cars that can be disassembled into parts.

The analysis of the results allows us to assert that infants mainly observe selectively the interactive features of figurative toys, study them tactily and aurally. And only from the age of 11-12 months and later, they choose to imitate certain interactive actions of toys: they sing, dance, imitate sounds, and join in setting the toy in motion.

During the research, babies and toddlers chose figurative toys without interactive features twice as rarely as similar toys with interactive features. Children were interested in:

- 1) attractive images of toys (penguin, Blue Tractor, Peppa Pig);
- 2) similarity of toys to people and animals.

However, there were certain toys that caused children's disgust. For example, the unpleasant face of a teddy bear caused the girl O. (8 months) to dislike it and not choose it among other toys; girls S. and G. (after 7 months) always ignored the plastic toy giraffe and did not choose it, but their attitude to the giraffe was somewhat improved by the adult's kind actions with it (gentle stroking, intonations to it), pitiful "complaints" of the giraffe about loneliness, requests to children to take it to play with them. Under the emotional influence of the adult's kind attitude and the giraffe's "requests", the children temporarily took it into their games, but soon forgot about it.

Among the collapsible toys, the most interesting for babies aged 6-12 months were those to which they had free access and with which they could perform various actions – folding/unfolding, fastening/unfastening, etc. (puzzles, boxes, nesting cups, stacking rings, etc.).

The possibility of active play according to the design of the toy and the actions that the child can perform with it encourages babies to choose these toys. They are also happy with the achieved result (assembled picture, inserted cup, assembled tower of stacking blocks, etc.) and draw adults' attention to it, expect their praise.

Babies aged 12-24 months were more interested in figurative-interactive toys than infants and chose these toys twice as often as ordinary figurative or collapsible toys.

Among the features of figurative-interactive toys that interested children in the age of 12-24 months, we singled out the following:

- 1) sounds of animals, cars, tractors that children imitate while playing with them;
- 2) musical accompaniment of a toy, which the child listens to and imitates, sings or dances to;
- 3) colour and brightness of the toy. First, the colour of toy attracts the children's attention, and then its size, shape or pattern (police car, animals, dolls);

- 4) movement: cars, helicopters-rollers, doll strollers; ball that increases in size when moving or acting with it;
- 5) number of different moving parts on the toy: doors that open, wheels that spin, button that starts the movement of the toy;
- 6) multifunctionality of the toy – transformer toys.

It has been found that infants and toddlers primarily choose figurative-interactive toys based on identical interactive features and functions (different movement, sound, colour change, etc.).

According to the growing cognitive interests, sensory and motor capabilities of babies, the range of figurative-interactive toys they choose to play with changes and becomes more diverse. Thus, children turn from passive observers of the actions of toys into active users, taking into account their interactive properties.

It should be reminded that children aged 12-24 months chose figurative toys twice as rarely as figurative-interactive toys. Along with individual imitations of the sounds and movements of the toy, babies were interested in a wider range of functional play actions and their active reproduction in the game. Namely:

- 1) to use toy animals (domestic and wild) adequately;
- 2) to imitate the sounds made by animals and their behaviour;
- 3) to reproduce sounds, special signals and movements of different cars, robots, trolleys or doll strollers;
- 4) to perform various actions with the doll's hair (wash, comb, dry with a hair dryer), treat dolls, animals with a medical instrument kit, put them to sleep, roll them in a trolley or a doll stroller; dress, undress, feed dolls or animals.

When choosing dolls to play with, children preferred baby-dolls or dolls depicting the images of their favourite cartoon characters.

Toddlers' independent playful imitative actions occurred with figurative toys; it was not observed among infants or toddlers of the same age with figurative-interactive toys. The mental, sensory, motor capabilities of children aged 12-24 months are significantly developed than those under 12 months, so they could realize their acquired abilities to act independently with the toy, activating its functional potential more widely and in their own way.

The collapsible toys satisfied the children's interest and encouraged them to choose with their multifunctional properties. They were more varied in their movement and more complex in their structure than the toys chosen by infants. The toddlers' ability to cope with the game task fuelled their desire to choose toys and intensified actions with them, particularly:

- 1) to create constructions, assemble a sorter, select and put together puzzles with images of animals, vegetables, fruits;
- 2) to play with the constructed structures in a game with figurative toys (dolls, accessories, dishes, furniture, animals, cars).

Toddlers aged 12-24 months combined figurative toys with collapsible toys: dolls in a house, on a bench, in a bed, at a table; cars in a garage; pets on a fence, wild animals in a zoo. Such situational placement of toys, modelling real situations, actually initiated a pretend and role play.

Figurative-interactive toys interested children aged 24-36 months mainly because of their interactive characteristics (sounds produced by toys – singing, dancing, growling; bright colour of the toy, its size, shape, movements) that encouraged and allowed various actions with them:

- 1) to vocalize toy animals;
- 2) to imitate the sounds of different automobiles (cars and lorries, special autos);
- 3) to play with musical toys and instruments in order to produce sound;
- 4) to learn different colours and shapes;
- 5) to drive cars and lorries, special autos;
- 6) to examine and learn the sensory properties of the toy by touch, - soft, smooth, fluffy etc.

Children in the age of 24-36 months chose figurative toys (dolls, babies, cartoon characters, animals, dishes, furniture, cars) in order to use them in directorial, pretend and role-play games. For example, girl K., having chosen a doll, dressed it, fed it, put it to sleep, treated it as her "child", built a doll house for it, cooked meals in the toy kitchen, washed its clothes, took it to kindergarten, playground, hospital in a toy car, etc. The boy Z. transported "wounded soldiers" in an ambulance, chased criminals in a police car, and delivered blocks for the construction of a toy garage in a truck. Among the toys most often chosen by children, a significant place was occupied by the characters of their favourite cartoons (Lol doll, Peppa Pig, Pinky Pie, Lady Bug, Spark and Blaze cars, Robocar Polly); at the

same time, the plot of the cartoon could be reproduced in a game – directorial or role-playing.

We have noticed, that children of this age personify themselves in the corresponding play role, along with the logical combination of individual play actions in the elementary plot of the game, e.g., a girl-mother takes care of a baby doll. In a child's play, a toy is an object that is the focus of the role-player's actions. At the same time, the toy is able to activate the child's actions due to its functional capabilities. The more opportunities there are for functional actions with a toy, the more interesting it is in the game, the more often the child chooses it, the more diverse and active he/she is in his/her actions with it.

In games with collapsible toys, children aged 24-36 months were interested in:

- 1) the process and result of assembling: sorter, Lego, puzzles, towers of stacking blocks;
- 2) the possibility of playing the created structures with the dolls, animals, cars, etc.;
- 3) the possibility of using puzzles, dominoes, picture lotto, selecting paired pictures in a joint game with an adult, a peer or an older child;
- 4) the novelty of the toy.

When playing with these toys, children have a certain task, which they try to perform as best as possible: to pick and assemble the toy in the order programmed in it to achieve the final result – to create a picture, a slender tower, etc. Also, we have found out such tendency: children are particularly interested in various constructors that can be used to build something new, and the larger the structure the child builds, the more interest he/she has in this process. During the game, children follow the rules for acting with a particular toy. However, the children's impulsivity and unrestrained activity in this age lead to frequent involuntary violations of the game rules. Playing with a partner complicates this situation.

The selectivity of children aged 36-48 months showed a more established interest in certain toys.

Children liked the following characteristics of figurative-interactive toys:

- 1) sounds made by toy animals and musical toys: dog that sings, car that plays a melody, emits a special signal;
- 2) brightness of the toy – car that glows;

- 3) mobility of the toy;
- 4) multifunctionality of the toy – the ability to roll the car, launch/start it with the keys, open the door or the hood.

Interactive features were just as interesting to children of this age as toddlers, but much less so.

They were twice as interested in figurative toys. It is due to these toys activate the ideas of children of the 4th year about the adults' actions and characteristic behaviour of animals, encouraging kids to reproduce them in role-playing games:

- 1) to take care of dolls, babies, animals;
- 2) to perform game actions with cartoon characters according to their plots;
- 3) to perform familiar roles: E., S., G. E. (42 months) played as a pilot, a policeman or a builder, S. (40 months), G. (45 months) – played as a daughter or a mother, cartoon characters Elsa or Anna, tigers, Bagheera, horses and riders;
- 4) to note the similarity of toys to real objects (clothes, dishes, furniture) and to use them appropriately in the game.

Children aged 36-48 months used figurative toys in the process of directorial games – they performed typical actions with the toy (like horses hop); in role-playing games – the toy sometimes was used by the child to perform a certain role (rider). Also, the toy activated and helped children to identify role-playing behaviour during certain actions (a girl in the role of Elsa made miracles with a magic wand); an attribute toy complemented the child's image in a certain role (Elsa's dress, braid, crown created her game image).

Collapsible toys interested children of this age with their opportunities to create various structures, play games (didactic) with predetermined tasks and rules. Namely:

- 1) children made houses for dolls from coloured cubes without fasteners;
- 2) they made pictures with different plots from puzzles, selected lotto, domino pictures, constructed buildings, cars from constructors (E. most often chose a LEGO-constructor, S., G. – dominoes "Vegetables, fruits", "Water world", "Wild animals", puzzles "Where is my mom?", "Who eats that?", "Who lives there?");
- 3) in the process of construction, children made structures that differ in shape, colour, and functional purpose (one day G. built a train

of the chosen (from two) construction set, S. built an aeroplane; the next day, G. created blocks of the same colour – white, red, green, yellow – and was proud of his colour selection, showed them to adults, kept and displayed them).

It has been found out, that didactic games attract children through the process of choosing the right piece, comparing and combining it with a pair (puzzles) or a similar one (dominoes). Successful completion of this task makes children happy and encourages further actions, games with the same toy. Adherence to the rules for successful and honest performance of the game task forces children to be persistent, patient, and make efforts for success. The lack of such endurance provokes violation of the rules, despite the fact that they are understandable for children of this age. Failure upsets and disappoints children, and lack of restraint and violation of rules often causes children to leave the game and do not play with the toy in the future.

In addition, at this age, some children quickly lose interest in musical toys (toy piano, telephone that plays programmed melodies, music box) and toys that suggest the logic of actions with them (houses with bushings, stacking toy with rings that differ in the shape of the holes).

Thus, the child's choice of toys changes depending on their characteristics at different stages of early childhood.

The analysis of research in the field of pedagogy, history of pedagogy, psychology, paediatrics, and ethnology allows us to single out the following areas of study of children's toys: 1) history of the toy (Arkin, 1935; Elkonin, 1999); 2) features of a toy as an object for children's play (Havrysh & Shchekhlova, 2004; Hladun, 2005; Onur Sezer & Sadioglu, 2012; Artemova, 2021); 3) role of toys in child development (Froebel, 2005; Montessori, 2014; Artemova, 2021); 4) requirements for the toy, in particular ergonomic ones (Radina & Ezykeeva, 1968; Florina, 1973; Manchuk, 2018; Dag et al., 2021); 5) folk toy in child development (Bogoraz-Tan, 1939; Fihol, 1956; Naiden, 1999); 6) choice of toys by children (Topaloğlu & Aslan Gördesli, 2012; Onur Sezer & Sadioglu, 2012; Healey et al. 2019; Clarke, 2022; Artemova et al., 2022); 7) influence of toys on the formation and development of play skills (Healey et al., 2019; Dauch et al., 2018; Koşkulu et al., 2021; Sivaraman, & Skoler, 2023); 8) toy selection based on the child's gender characteristics (Todd et al., 2016; Lam, 2023).

It has been found that although the concept of children's play has not changed over the past century, the modern toy is significantly different from the one of the previous centuries and it encourages the child to choose it. This trend is partly explained by the proliferation of electronic and sensory noise, which are characteristics of interactive toys that parents may perceive as necessary for a child's development. However, according to Healey A. et al., (2019), the main elements of such toys (e.g., lights and sounds coming from the robot) diminish the child's social participation, which could otherwise occur through facial expressions, gestures and vocalisation and is important for their social development. Instead, when developing recommendations for parents on toys for children, paediatricians (Healey et al., 2019) point out that toys should stimulate the child's imagination, encourage interaction with the toy and establish social contacts with other children or adults about the toy chosen for play.

The article has enriched the field of early childhood with scientific findings regarding the choice of different types of toys by children of different ages (0 to 12 months, 12 to 24 months, 24 to 36 months, 36 to 48 months). Also, the conducted research has contributed to distinguishing the properties of toys that influence a child's choice in a certain age and identifying among them the ones that are priority for him/her at each stage of early childhood.

The results of our research extend and clarify the information available in science on the dynamics of choices of figurative, figurative-interactive, figurative-collapsible and collapsible toys by children aged 0-48 months. The natural tendencies of children's choice of toys revealed in the study should be taken into account when parents and teachers choose an assortment of toys for children of different early ages. The facts and trends obtained and substantiated in this study are also recommended to designers and manufacturers of toys to produce them adequate to the age and functional capabilities of children of different early ages.

## Conclusions

1. The study has found that children's spontaneous interest in toys is transformed into cognitive interest, which encourages them to choose a particular toy among others. Functional actions with the chosen toy to a certain extent satisfy the child's interest and contribute to its further deepening and development. Non-functional

actions with a toy occur when the child is not yet able to use the toy according to its intended play functions. In such cases, children adapt their actions with a toy to spontaneously arising short-lived interests, random figurative or spatial coincidences, and situational choices. Both functional and non-functional actions satisfy the child's cognitive interest and justify his/her choice of toy.

2. The analysis of children's actions and games with toys has revealed that children aged 12-24 months made the largest number of choices out of the total number of all recorded choices. This can be explained by the increase in cognitive activity and the development of children's sensory and motor abilities in relation to objects and play activities with toys. In the second place according to this indicator are children aged 24-36 months. Along with the experience gained by children of the previous age group, they have significantly expanded possibilities of satisfying cognitive interests and choices in other non-game activities – painting, working with a book, etc.

The third place in the ranking of choices is occupied by children under 12 months. Their interest and choice of toys increases especially in the period of 6-12 months, but their sensory and motor abilities to act with toys are still insufficient. The last place in the ranking in terms of the number of toy choices is occupied by children aged 36-48 months. Children of this age need fewer figurative toys in their games, as they are more interested in playing a role in a role-playing game than in acting with a toy. Their interests are often focused on collapsible toys, but the analytical and cognitive capabilities of children of this age to act functionally with them are not yet sufficient. This determines the limited range of collapsible toys that children can use according to their functional characteristics.

3. The study has shown that children aged 0-48 months mostly chose figurative-interactive toys. Figurative toys were in the second place among their interests. Their choice of collapsible toys, including some with figurative features, was somewhat less frequent. The reasons for such children's uneven choice were identified. Figurative-interactive toys attracted them with interactive features: sound, movement, brightness, colour change, etc. Children successfully launched such functions of the toy from the age of 10-12 months and were satisfied with watching and listening to

them. This corresponded to the age-related psycho-physical and sensory children's abilities. With the further development of mental processes, in particular imagination, children aged 12-48 months were more interested in the image of the toy, and its interactivity was a complement and an expression of the image. Therefore, toddlers and preschoolers were more likely to choose figurative toys and use them in games. The further psycho-physical development of children encouraged them to imagine themselves in a certain image and, accordingly, to be their own performer in a certain role in a role-playing game. The above analysis allowed us to identify the approximate age parameters of children's priority choices of toys and their use in object and play activities.

4. The revealed dynamics of children's choice of collapsible toys and games with them has demonstrated progressive changes from children's actions by trial and error at the age of up to 12 months to understanding of game tasks and game rules at the age of 12-36 months, and conscious compliance or ignoring them at the age of 24-48 months. In these games, it is important to have a partnership (interaction) between an adult and children as a preparation for joint games with peers.

In the perspective of further research, it is important to study the development of object and play activities of early age children in the conditions of satisfaction of their choice of toys in the subject-toy environment and subject-subject interaction with adults and peers.

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## Effectiveness of translation transformations in different styles of the english language for teaching written translation

### Ефективність перекладацьких трансформацій у різних стилях англійської мови для навчання письмового перекладу

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#### Abstract

The issue of translation transformations for teaching written translation has been studied rarely. This study has the general purpose of urging the importance of the issue, especially in view of global digitalization, when machine translation poses a threat to flatten out the role of a human translator. A translator who does not have translation transformations skills is not in demand on the labour market. The aim of the article is to determine the effectiveness of using the method of translation transformations as a special educational technology. The method of translation transformations is tested through its application for training future foreign philologists in the written translation techniques of English texts of different styles. The final evaluation showed that on average, the respondents of the experimental group achieved the level of "Very good" (827.4 points, qualitative level – 82.8%), and the respondents of the control group – the level of "Good" (754.6 points, qualitative level – 75.5%). The data indicate the effectiveness of the method of translational transformations. However, they evidence the

#### Анотація

Перекладацькі трансформації для навчання письмового перекладу є темою, яка рідко стає предметом уваги. Представлена розвідка має загальну ціль актуалізувати тему. Надто на тлі глобальної діджиталізації, коли машинний переклад загрожує нівелювати роль перекладача-людини. Перекладач без навичок перекладацьких трансформацій в умовах сьогодення не є затребуваним на ринку праці. Мета статті - визначити ефективність застосування методу перекладацьких трансформацій як спеціальної навчальної технології. Метод перекладацьких трансформацій випробувано на прикладі його застосування для навчання майбутніх іноземних філологів техніки письмового перекладу текстів різних стилів (англійською мовою). Фінальне оцінювання показало, що респонденти експериментальної групи усереднено досягли рівня «Дуже добре» (827,4 бала, якісний рівень - 82,8%), а контрольної – рівня «Добре» (754,6 бала, якісний рівень

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difficulty of achieving more significant results within the scope of a time-limited experiment.

**Keywords:** adaptation of the translated text, foreign philologists, translation accuracy, translation reliability, translation transformations.

## Introduction

The expansion of globalization processes makes the role of translators debatable in many respects, especially with the development of automated translation systems such as Google Translate. At the same time, the method of translation with the help of computer programmes indicates the value of a high-quality written translation, which is not a literal translation of a word in its most used semantic variant. Automated translation does not ensure correspondence to the contextual meaning of tokens, does not guarantee the integrity of the translated text, and does not take into account the stylistic features of the text during translation operations, and the stylistically determined meanings of words accordingly. So, there is still the need for high-quality professional written translation of texts of different styles and purpose even despite the fact that a large volume of translation work for the average user and everyday use can be performed with the help of special software, which is also constantly being improved.

As for written translations, it is supposed that the translator is provided with a text document in the original language. The task is to convey it in another language (Lertola, 2019; Raw, 2012). The accuracy of translation depends on the field of application, while the latter necessarily means consistency with the stylistic features of the translation, which implies a proficient command of the language and high translation skill (Ducasse & Maher, 2020; Robinson, 2019). It is important to differentiate types of translation, such as translation of technical, special, artistic and other types of texts. Research projects are translated most accurately, in detail, literally. So, if computerized programmes greatly simplified the work of professional translators, they definitely did not flatten out their social function. Even if special software is used for written translation, the translator will still automatically edit the translated text accordingly to avoid translation fails, inaccuracies, and stylistic errors. This is why it is necessary to train future translators in the subtleties of translation

75,5%). Дані вказують на ефективність методу перекладацьких трансформацій. Проте свідчать про складність досягти суттєвіших результатів за умов обмеженого в часі експерименту.

**Ключові слова:** перекладацькі трансформації, адаптація перекладеного тексту, точність перекладу, достовірність перекладу, іноземні філологи.

transformations in order to perform this work, which currently cannot be performed even by artificial intelligence programmes. Translation transformations enable to correctly convey the content and the underlying meaning of the original text using the means of another language. In the given context, we must, however, mention the recent tests of the deep-learning system CUBBITT, which, although it surpasses the most modern translation programmes in many experimentally evaluated parameters, still cannot replace human translation in all quality criteria (Popel et al., 2020). At least for now.

A number of peculiarities of translation activity determined the imperative that *translation must now be recognized as a distinct and autonomous profession*. Therefore, being a future English teacher, for example, does not mean being a qualified translator at the same time, and vice versa. The range of mastering a foreign language, depending on specific professional duties, differs significantly in terms of competence. The specifics of oral or written, technical or artistic translation determine the expansion or narrowing of translation competences in a certain direction. Recognition of translation as a distinct and autonomous profession in the current Translator's Charter is an overarching thesis (IFT, 1963).

The considerations expressed in this section emphasize the relevance of the topic of the article – teaching translation transformation techniques when making written translations of different styles. In the modern digital age, it is axiomatic that a translator who does not have sufficient knowledge of translation transformation techniques cannot be considered a qualified specialist. A translator who does not have the competences of translation transformations may well be equal in quality of work to much cheaper and faster to use artificial intelligence programmes that provide the technical part of translation requests. Therefore,

the failure to be proficient in translation transformations means professional failures and the inability to build a career as a translator. On the contrary, being competent in translation transformations techniques means prospects of a successful career even despite computerization, which has largely changed the perception and procedural implementation of the translation profession in society.

Therefore, *the aim of this article* is to determine the effectiveness of using the method of translation transformations as a special educational technology. In particular, it is planned to test the method of translation transformations through its application to the translation of texts of different styles of the English language when teaching students written translation techniques. The aim involved the fulfilment of the following *research objectives*:

- 1) create and implement an algorithm for teaching written translation with the help of intensive use of the method of translation transformations, taking into account the aspects that were identified in the literature review;
- 2) develop diagnostic criteria for translation quality for texts of scientific, technical, artistic, and journalistic styles, focusing on the need to use translation transformations;
- 3) determine the features (for texts of different styles) and the effectiveness of using the method of translation transformations for building written translation skills.

### Literature Review

In the previously mentioned Translator's Charter, translation is interpreted as an intellectual activity, the object of which is the transfer of literary, scientific and technical texts from one language into another. Next, the task of the translator is clearly stated: *render exactly the idea and form of the original*. But a fundamental clarification is made, which directly determines the focus of this study: an accurate translation should not be confused with a literal translation, as the accuracy of the translation does not exclude the adaptation of the translated text in such a way that speakers of the target language feel the form, atmosphere and deeper meaning of the work (IFT, 1963). This important remark legitimizes the need for translational transformations as a necessary condition for achieving high-quality *faithful translation*. It also says that the translator must have broad general knowledge (be a person with a broad outlook, intellectually rich) and know the subject of

translation well enough. At the same time, translation ethics require the translator to refrain from performing translation in a field beyond his or her competence. This opinion can be interpreted by the authors of this article in such a way that although future translators can get an idea of translation transformations and acquire the appropriate competencies in higher education institutions (HEIs), this does not yet make graduates of higher education institutions absolutely professional translators who can competently perform translations of various texts, in particular texts of different topics and different styles (Varela-Salinas, 2019). This is achieved through a narrow specification resulting from years of experience (practice) of working with texts of a specific field and a specific style. This is the only way to avoid profanity.

So, the importance of teaching written translation in HEIs through the method of translation transformations is not undervalued even despite of what has been said about the significance of translation experience. On the contrary, it is the first important step in practicing translation skills. It is significant that this step is carried out under the professional supervision of teachers and with the possibility of involving practicing translators to work with students (many foreign language teachers also work as freelance translators outside of working hours).

The translation transformations can also be interpreted through the concept of *being a "secondary" author* (Bezerra, 2012; IFT, 1963). This is a special kind of interlanguage paraphrasing, the main goal of which is to achieve translation adequacy. In other words, the need for translational transformations is motivated by the requirement to achieve that the translated text conveys the entire range of explicit and implicit information contained in the original text as accurately as possible, which shall not be equated with literal translation. However, this should be achieved in compliance with the relevant norms of the target language. The process of transformation of the idea as a result of the transition from units of the source language to units of the target language is necessarily related to the use of translation transformations as a special type of interlingual paraphrasing. There is an interesting point that the absence of errors and inaccuracies in the translation does not mean the high quality of the translation, just as their presence does not mean that the translation is of poor quality and does not meet the current requirements. It is said that the translator should primarily focus on the power of influence inherent in the translation, on whether

the original ideological and artistic value is fully preserved (Nazrullayeva, 2022). The range of translation transformations used in this case is quite wide: from formal or structural (based on the modification of lexical and grammatical components of the source text) to semantic (semantic components of the source text).

Translational transformations are limited by the reliability of the information to be conveyed. This means that the translation transformation will be considered a translation error in case of the failure to comply with the faithfulness principle. Translational transformations are based on the logical thinking techniques, which help to reveal the semantics of a foreign language token in the context, and not detached from the discourse. Researchers also note the importance of considering the functional impact of the message contained in the text subject to translation (Su & Liao, 2020). In other words, it is important to preserve the pragmatic message of the text material, adhering to the communicative goal of the speaker. As the translation cannot be absolutely identical to the original, the translator is tasked to create a text as close as possible to the original in terms of semantics, structure and potential impact on the recipient of this translation. The main problem here is that it is not always possible to find appropriate linguistic parallels between the source and target languages at the semantic or structural levels (it is about finding the same models of sentences and phrases (free and stable, phraseological), a complete coincidence of the semantic meaning of the words used in the original and translation of tokens, etc. Translation transformations are used in such situations as the only possible solution to the problem.

The main accents in the translator's work, where the use of translation transformations is inevitable, are as follows:

- 1) do not start the written translation of the text until the students have made a preliminary translation, that is, before reading the entire text.
- 2) students should make sure that they recognize possible allusions, intertextual components contained in the original text;
- 3) students should make sure that they can generally cope with the informative side of the text;
- 4) it can be helpful to translate segments that seem to be the most important parts of the entire text;

- 5) make a plan for the implementation of the emotional aspect of the text, its implicit elements, which must be decoded by the translator, and then re-encoded using the semiotic means of the target language (this part of the work is especially relevant for artistic, journalistic, epistolary texts, texts of conversational or confessional styles, etc.; this applies the least to texts of scientific and official styles).

Textual hints – allusions – are one of the main problems that every translator faces. The title is another element of any text that requires significant attention from the translator. The title is a very significant element of the text, since its main purpose is to attract attention and inform the reader about the problem raised in the text. This is why it is recommended to first translate the text, and then think over the title, bearing in mind that all possible nuances of meaning, content, and emotional load must be taken into account in the new title in the target language. While it is important to adhere to both the original meaning and the original style, it is equally important to avoid (unless absolutely necessary) literal translation or blind reproduction of the original syntactic structure of the title.

The most common mistake is students' inability to choose the correct equivalent of a foreign word or phrase, syntactic structure during the translation of a text. Being focused on the meaning conveyed by foreign words, grammatical forms and syntactic structures, students sometimes ignore the fact that these meanings must be properly verbalized in the target language (Guerberof Arenas & Moorkens, 2019; Sherzodovich & Kizi, 2020). Therefore, it is extremely important for translators to have a high level of proficiency in both the foreign language and their native language (as a rule) or another language they translate. Therefore, the quality of translation transformations will be ambivalent. The ability to predict possible errors and minimize the probability of their occurrence is the main priority of the teacher. It is important to sometimes allow the student to make a mistake first, and then allow him or her to correct it himself or herself. Therefore, correction of mistakes (self-correction) will be an essential stage in learning translation transformations.

The involvement of computers, the Internet and information technologies is a mandatory component when teaching translation in view of digitalization. Proficiency in translation technologies has become a prerequisite for

anyone wishing to join the translation profession (Kenny, 2019; Varela-Salinas, 2019).

The review of the literature identified the current problems of teaching translation in the digitalized educational and everyday paradigm of the 21<sup>st</sup> century. Despite the pervasiveness of the problem of achieving the adequacy of a written translation, little attention is paid to the method of translation transformations as an educational tool, not as an indispensable tool for a finished translation.

## Material and Methods

### Research Design

The research was conducted in several stages. In particular, at *the first stage* (September 2020-December 2020), the authors of the article developed an algorithm for the intensive use of the method of translation transformations for teaching written translation. All materials were included in the educational and methodical documentation, which is planned to be patented and published as a separate manual. First of all, the work began with a selection of texts of various styles, which have already been translated from English into Ukrainian by professional translators. These texts were analysed during the classes in Written Translation Techniques for the purpose of identifying translation transformations of different language levels and for the purpose of assessing their appropriateness. Next, texts of scientific, technical, artistic and journalistic styles were selected to train the students' translation skills. In other words, these were training texts varying in volumes and complexity, which students had to translate on their own with due regard to the peculiarities of style and the scale of possible applied translation transformations (from scientific and technical texts, where the level of transformation is minimal, but where a clear correspondence of terminology is required, to artistic style, where

the range of transformations is much broader, however, it should also be subordinated not to the task of arbitrary interpretation, but to the translational need). Software for using machine translation techniques with subsequent editing was also selected. It should be emphasized that the translation was two-way: English-Ukrainian, Ukrainian-English.

The *second stage* (January 2021-January 2022) involved sampling of students, as well as determining the chronological framework of the experiment and the expected results. The algorithm for using the method of translation transformations has been implemented. Constant monitoring of the algorithm implementation was carried out using Google spreadsheets and Google Docs. A diagnostic model of written translation skills common to both groups of participants was developed.

The *third stage* (February 2022) provided for the final diagnosis of the competences acquired by students for the implementation of written translation of texts of various styles from English into Ukrainian and vice versa.

### Sample

A total of 118 students of Poltava V.G. Korolenko National Pedagogical University (students of the Faculty of Philology and Journalism, 2<sup>nd</sup>, 3<sup>rd</sup>, 4<sup>th</sup> years of study) were invited to participate in the experiment. Students of the participating HEI were divided into academic groups. Two academic groups were taken from each of the years of study. One randomly became experimental, and the other – control. So, the control group consisted of 52 students, and the experimental group included 66 students.

### Data Collection

The data were collected according to the diagnostic model presented below (Table 1).

**Table 1.**  
*Diagnostic model for evaluating translation skills in different language styles*

| Criterion No.                          | Criterion name  | Points         | Notes   |
|--|---|----------------|---|
| <b>I. GENERAL (BASIC) COMPETENCIES</b> |   |                |   |
| 1.                                     | General level of foreign language proficiency   | max 100 points | <p>Test methods of external independent assessment of the English language presented on the website of the Ukrainian Centre for Educational Quality Assessment (<a href="https://testportal.gov.ua/testy-mynulyh-rokiv/">https://testportal.gov.ua/testy-mynulyh-rokiv/</a>) were used to determine the level of foreign and Ukrainian language proficiency. The assignments for 2021 were used. A group of 4 experts who are English native speakers was created to determine communicative competence. Speaking and writing skills were assessed. Students were united in groups of 5-8 people and communicated with experts in a foreign language on a randomly chosen topic to determine their oral communication skills. This criterion was assessed with the involvement of teachers from the Department of English and German Philology of Poltava V.G. Korolenko National Pedagogical University. The text was given to the respondent randomly from the created bank of texts (60 texts in total) and belonged to one of the styles (technical, scientific, journalistic or artistic).</p> |
| 2.                                     | General level of native language proficiency  | max 100 points |   |
| 3.                                     | Foreign Language Communicative Competence Test  | max 100 points |   |
| 4.                                     | The speed of work on the translation, the timely delivery of completed assignments and their completeness   | max 50 points  |   |
| 5.                                     | Text editing after machine translation  | max 50 points  |   |
| <b>II. TECHNICAL TEXTS</b>             |   |                |   |
| 1.                                     | Terminological correspondence   | max 50 points  | <p>Manuals for the use of household appliances, as well as labels for cosmetic products and household chemicals were selected for translation.</p>  |
| 2.                                     | Conformity to DBN (State Building Regulations), DSTU (State Standards of Ukraine), GOST (International Technical Standards), SNiP (Building Code), ASTM, ASME, DIN, ISO | max 50 points  |   |
| 3.                                     | General consistency of style, selection of appropriate emotionally neutral tokens, and clarity of syntax  | max 50 points  |   |
| <b>III. SCIENTIFIC TEXTS</b>           |   |                |   |
| 1.                                     | Terminological correspondence (consistency of the glossary, relevance of terms).  | max 50 points  | <p>Texts from the field of philological science were used.</p>  |
| 2.                                     | Literacy of scientific translation.   | max 50 points  |   |
| 3.                                     | General consistency of style, selection of appropriate emotionally neutral tokens, and clarity of syntax  | max 50 points  |   |
| <b>IV. JOURNALISTIC TEXTS</b>          |   |                |   |
| 1.                                     | Correspondence of the denotative part   | max 50 points  | <p>The texts from BBC, Times, Washington Post were taken.</p>   |

2. Correspondence of the expressive part max 50 points

3. General conformity of style, accuracy of translation of titles, lexemes and syntax, expressive and stylistic adaptation max 50 points

#### V. ARTISTIC TEXTS

1. Preservation of the form, structure, content, mood of the original text max 50 points

2. Ability to convey artistic means: idioms, wordplay, metaphors, expressive figures, etc. max 50 points

3. Adherence to the author's style and conveying the cultural features of the era through verbal means. max 50 points

Prose texts of modern Ukrainian and Anglo-American authors were taken for translation (Lina Kostenko, Oksana Zabuzhko, Halyna Tarasiuk, Ken Kesey, Daniel Keyes, Ray Bradbury, Rachel Abbott).

Total: **maximum 1,000 points.**

Source: created by the authors

#### Data Analysis

The data about each respondent of the study was entered in Google Sheets. A data bank was created for each respondent. A general table of results of participants in the control and experimental groups was created on its basis. The

interpretation was carried out both according to each separate group of indicators (general competences and specific skills of translating texts according to language styles), and in general within the maximum 1,000 points. The table of interpretation within 1000 points is presented below (Table 2).

**Table 2.**

*Data interpretation table*

| Item No. | Range of points | Relevant quality level |
|----------|-----------------|------------------------|
| 1.       | 1-340           | Critically low level   |
| 2.       | 350-590         | Unsatisfactory         |
| 3.       | 600-630         | Sufficient             |
| 4.       | 640-740         | Satisfactory           |
| 5.       | 750-810         | Good                   |
| 6.       | 820-890         | Very good              |
| 7.       | 900-100         | Excellent              |

Source: created by the authors

The authors referred to the ECTS scale in a proportional ratio during the distribution of points by level.

#### Tools

Empirical research was conducted using general scientific and special methods. As for the latter, the method of independent expert evaluations, computer assisted testing (using tests with open-ended and closed questions, writing creative works), interviews, and mathematical and

statistical methods of processing the results were applied.

Such tool as computer testing at Formative – <https://goformative.com/> were involved (to determine the level of Ukrainian and English proficiency - tests from the Ukrainian Centre for Educational Quality Assessment were integrated into the software) was used to conduct the research. Machine translation of texts was carried out using the optional available in Google Translate. The students worked with their texts in Google Docs in the research participants'

accounts. Google Forms and Google Sheets were used to collect and record data. The statistics was processed using Microsoft Office package.

### **Ethical Criteria**

All participants of the experiment were informed about the essence, structure and content of the study. The participants of the experimental group agreed to use their classroom time and partially work outside the classroom time using the method of translation transformations. Additional weekly consultations were also held as part of the experiment, to which students agreed to come on a voluntary basis. There were

also regular meetings with professional translators. Since all this required additional time and effort, the students signed a voluntary consent to participate in the research. Students of the control group mastered translation techniques according to the usual programme of the Written Translation Techniques course.

### **Results**

The following data were obtained in the experimental group as a result of the final diagnostics according to the model developed by the authors (Table 3).

**Table 3.**

*Averaged results of the final diagnostics of written translation skills in different language styles in the experimental group*

| <b>Criterion No.</b>                            | <b>Criterion name</b>   | <b>Average number of points for the group</b>   |
|---|---|---|
| <b>I. GENERAL (BASIC) COMPETENCIES</b>          |   |   |
| 1.  | General level of foreign language proficiency   | 79.8  |
| 2.  | General level of native language proficiency  | 88.5  |
| 3.  | Foreign Language Communicative Competence Test  | 81.9  |
| 4.  | The speed of work on the translation, the timely delivery of completed assignments and their completeness               | 42.7  |
| 5.  | Text editing after machine translation  | 44.4  |
|   |   | <b>Total: 337.3</b>   |
| <b>II. TECHNICAL TEXTS</b>                      |   |   |
| 1.  | Terminological correspondence   | 39.0  |
|   |   | Conformity to DBN (State Building Regulations), DSTU (State Standards of Ukraine), GOST (International Technical Standards), SNiP (Building Code), ASTM, ASME, DIN, ISO |
| 2.  | General consistency of style, selection of appropriate emotionally neutral tokens, and clarity of syntax                | 37.2  |
| 3.  |   | 37.9  |
|   |   | <b>Total: 114.1</b>   |
| <b>III. SCIENTIFIC TEXTS</b>                    |   |   |
| 1.  | Terminological correspondence (consistency of the glossary, relevance of terms).  | 41.3  |
| 2.  | Literacy of scientific translation.   | 43.4  |
| 3.  | General consistency of style, selection of appropriate emotionally neutral tokens, and clarity of syntax                | 44.8  |
|   |   | <b>Total: 129.5</b>   |
| <b>IV. JOURNALISTIC TEXTS</b>                   |   |   |
| 1.  | Correspondence of the denotative part   | 42.3  |
| 2.  | Correspondence of the expressive part   | 39.4  |
| 3.  | General conformity of style, accuracy of translation of titles, lexemes and syntax, expressive and stylistic adaptation | 43.8  |
|   |   | <b>Total: 125.5</b>   |
| <b>V. ARTISTIC TEXTS</b>                        |   |   |
| 1.  | Preservation of the form, structure, content, mood of the original text   | 40.1  |
| 2.  | Ability to convey artistic means: idioms, wordplay, metaphors, expressive figures, etc.                                 | 38.3  |
| 3.  | Adherence to the author's style and conveying the cultural features of the era through verbal means.                    | 42.6  |
|   |   | <b>Total: 121.0</b>   |
| <b>TOTAL: 827.4 – Quality level “Very good”</b> |   |   |

Source: created by the authors

Qualitative percentage interpretation of data by general competencies and language styles gave

the following averaged results for the experimental group (Table 4).

**Table 4.**  
*Qualitative percentage interpretation of data by language styles (experimental group)*

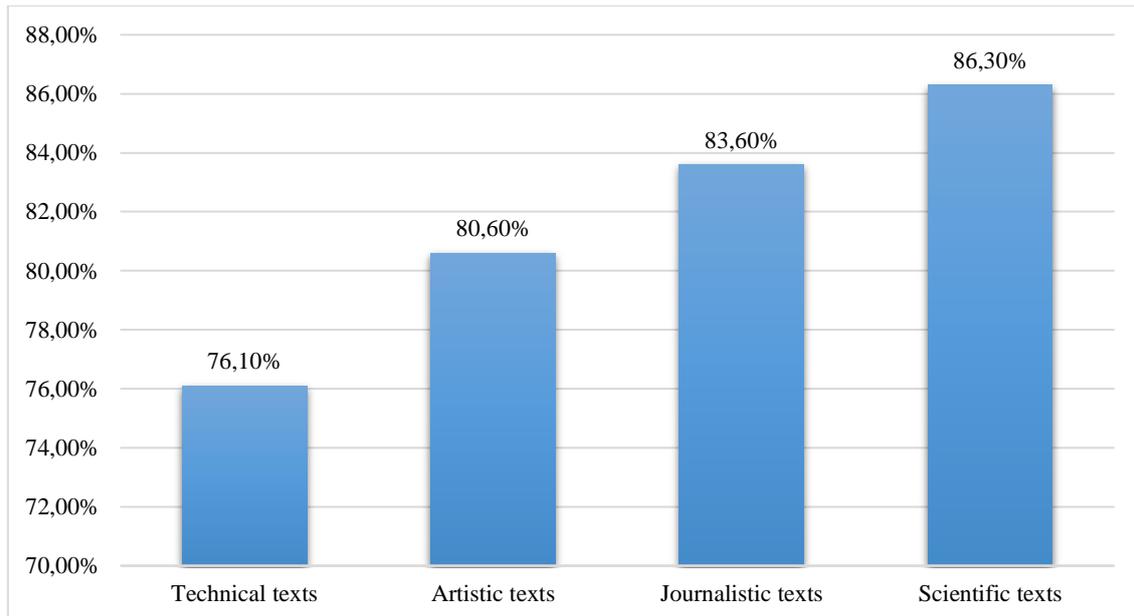
| Criterion                       | Maximum possible number of points | Actual number of points % | % of success |
|---------------------------------|-----------------------------------|---------------------------|--------------|
| I. General (basic) competencies | 400.0                             | 337.3                     | 84.3%        |
| II. Technical texts             | 150.0                             | 114.1                     | 76.1%        |
| III. Scientific texts           | 150.0                             | 129.5                     | 86.3%        |
| IV. Journalistic texts          | 150.0                             | 125.5                     | 83.6%        |
| V. Artistic texts               | 150.0                             | 121.0                     | 80.6%        |
| <b>Total:</b>                   | <b>1000.0</b>                     | <b>827.4</b>              | <b>82.7%</b> |

Source: created by the authors

We can draw a conclusion from the chart presented below about the difficulty of teaching written translation by the method of translation transformations according to language styles (Figure 1).

The high performance in the application of translation transformations for learning the written translation of scientific texts can be explained by the fact that the students were given the texts of the philological field for translation

in which they are most competent. A key objective of this study is to compare the results of the experimental and control groups. This will be the ground for further conclusions about the effectiveness of the application of translation transformations in different styles of the English language for teaching written translation. Table 5 presents the results of the final diagnostics of the written translation skills of respondents of the control group.



**Figure 1.** Performance in work on written translations in the experimental group (by language styles).  
 Source: created by the authors

**Table 5.**

*Averaged results of the final diagnostics of written translation skills in different language styles in the control group*

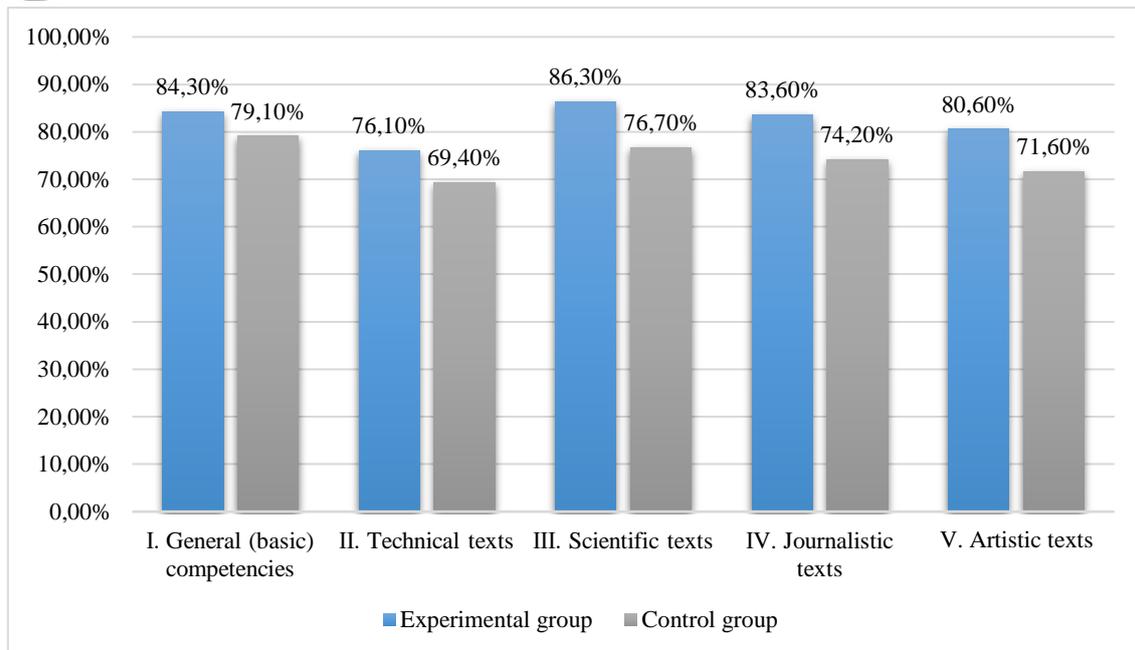
| <b>Criterion No.</b>                       | <b>Criterion name</b>   | <b>Average number of points for the group</b> |
|--|---|---|
| <b>I. GENERAL (BASIC) COMPETENCIES</b>     |   |   |
| 1.   | General level of foreign language proficiency   | 73.1  |
| 2.   | General level of native language proficiency  | 89.7  |
| 3.   | Foreign Language Communicative Competence Test  | 76.9  |
| 4.   | The speed of work on the translation, the timely delivery of completed assignments and their completeness   | 37.2  |
| 5.   | Text editing after machine translation  | 39.3  |
|  |   | <b>Total: 316.2</b>                           |
| <b>II. TECHNICAL TEXTS</b>                 |   |   |
| 1.   | Terminological correspondence   | 36.2  |
| 2.   | Conformity to DBN (State Building Regulations), DSTU (State Standards of Ukraine), GOST (International Technical Standards), SNiP (Building Code), ASTM, ASME, DIN, ISO | 32.1  |
| 3.   | General consistency of style, selection of appropriate emotionally neutral tokens, and clarity of syntax  | 35.8  |
|  |   | <b>Total: 104.1</b>                           |
| <b>III. SCIENTIFIC TEXTS</b>               |   |   |
| 1.   | Terminological correspondence (consistency of the glossary. relevance of terms)   | 37.5  |
| 2.   | Literacy of scientific translation  | 38.0  |
| 3.   | General consistency of style. selection of appropriate emotionally neutral tokens. and clarity of syntax  | 40.1  |
|  |   | <b>Total: 115.6</b>                           |
| <b>IV. JOURNALISTIC TEXTS</b>              |   |   |
| 1.   | Correspondence of the denotative part   | 35.1  |
| 2.   | Correspondence of the expressive part   | 36.3  |
| 3.   | General consistency of style. the accuracy of the title translation. lexemes and syntax. expressive and stylistic adaptation  | 39.9  |
|  |   | <b>Total: 111.3</b>                           |
| <b>V. ARTISTIC TEXTS</b>                   |   |   |
| 1.   | Preservation of the form, structure, content, mood of the original text   | 35.5  |
| 2.   | Ability to convey artistic means: idioms, wordplay, metaphors, expressive figures, etc.   | 34.7  |
| 3.   | Adherence to the author's style and conveying the cultural features of the era through verbal means   | 37.2  |
|  |   | <b>Total: 107.4</b>                           |
| <b>TOTAL: 754.6 – Quality level “Good”</b> |   |   |

Source: created by the authors

The comparison of the results of Tables 3 and 5 revealed that the difference between the control and experimental groups is not so significant at the level of general translation competences. It is only 21.1 points, which is equivalent to 2.1% in quality indicators. So, this testifies to the effectiveness of the method of intensive study of the translation transformation techniques to

improve the quality of translations of texts of the relevant styles.

The chart below shows the percentage differences between the final indicators of students of the control and experimental groups (Figure 2).



**Figure 2.** Comparison chart of the results of the final diagnostics. Source: created by the authors

So, the final diagnostics showed that the intensive application of the method of translation transformations during the classes and out of classes with the students of the experimental group helped to achieve a level of professionalism in the written translation of texts of different styles, which corresponds to the quality level of “Very good”. However, it should be noted that the overall result of 827.4 points is almost the very beginning of the “Very good” range (820-890 points) according to the data interpretation scale that we developed. At the same time, written translation in the control group was taught traditionally, not excluding the method of translation transformations, but not emphasizing it either. The result in the control group is 754.6 points, which corresponds to the quality level of “Good”. It should also be noted that this is the lower bar of the range (750-810 points) according to the gradation presented in Table 2.

### Discussion

The basis of the research idea is the thesis that all the quality criteria of the translation defined in the diagnostic model in all four language styles involved directly depend on the ability to use translation transformations. The results of the final diagnostics mostly confirm this thesis. However, the qualitative difference between the overall results of proficiency in written translation between the control and experimental groups was 7.3% in favour of the experimental group. Although this difference is not too significant, it clearly indicates the potential of

effectiveness in the further application of the method of translation transformations in different language styles when building students’ written translation skills.

It is also necessary to take into account qualitative percentage differences when evaluating proficiency in the written translation of texts of different styles. As for general (basic) competencies, the difference is 5.2%, in technical texts – 6.7%, scientific texts – 9.6%, journalistic texts – 9.4%, artistic texts – 9.0%, everywhere in favour of experimental group students. Therefore, the method of translation transformations worked most effectively for building translation competences in scientific texts. Attention should also be paid to the effectiveness of text editing techniques after machine translation (Carrasco Flores, 2021; Jia et al., 2019). The difference between the groups in this aspect was 10.2% in favour of the experimental group.

It is worth noting that future translators have different competencies for oral and written translations (Kenny, 2019; Kress, 2019). This confirms the importance of targeted teaching of written translation (Kiraly & Massey, 2019) with particular emphasis on the peculiarities of the translator’s work with texts of different styles (Baynham & Lee, 2019; Venuti, 2019). The traditional approach is to gradually teach students how to translate and interpret. First, students practice translating texts from a foreign language into their native language, then from their native language into a foreign language.

And at the generalization stage, students are taught to translate two ways (Anderson et al., 2020; Desjardins, 2021). This logic was followed when teaching the Technique of Written Translation course.

It is also worth noting that most European universities pay special attention at the first stage of translator training to general translation competences with the possibility of specialization in a certain field at subsequent stages (Darby, 2019; Zuparova et al., 2020). This means that students first acquire common competencies in order to later develop the most necessary professional skills (Solari et al., 2020; Wang et al., 2020). But translator training in Ukraine today differ significantly from the typical practice of European countries, where translators are trained immediately with a particular specialization (technical, engineering, medical, etc.) in special educational institutions and according to specifically developed educational and professional programmes. Unfortunately, this practice almost does not exist in Ukraine. HEIs of Ukraine mainly train foreign philologists with wide employment opportunities: in the field of education (teacher, lecturer in HEIs, researcher) or the translation niche (mostly this is an educational programme 035.041 Germanic Languages and Literature (translation included). We believe that the training of translators in Ukraine requires the integration of world practice. Moreover, the demand for translation activities in Ukraine will grow in the future with the expansion of the country's European integration ties. Such a reform will make it possible to pay more attention to training translation skills, in particular written translation. This will create a favourable space for wider application of the method of translation transformations.

The conducted research has significant theoretical and practical implications. The unique potential of written translation skills through the use of translation transformations was theoretically substantiated and proved. This is currently the area of translation activity that cannot be compensated even by artificial intelligence programmes at the current stage of software development. The need for special practical training of translation transformations for each language style was proved, because translation transformations have a narrow specification. The practical implications of the study give an idea of the procedure and predicted consequences of applying a similar research algorithm with the involvement of a different group of respondents (among foreign philology

students). The practical implications also involve the need to improve the developed training model to improve the translation skills of the students of the experimental groups.

## Conclusions

So, the authors of the article proved the effectiveness of translation transformations in different styles of the English language for teaching written translation in the course of thorough experimental study. This somewhat compensated for the lack of articles and empirical studies in this direction identified during the literature review on the subject. The algorithm for the integration of the method of translation transformations requires a separate printed manual, so it is briefly presented in the article. In general, the method of translation transformations requires close cooperation between students and teachers, the involvement of professional translators, high motivation of students, and high translation and pedagogical professionalism from the teaching staff.

The presented diagnostic model covers most of the important aspects when working on translations of texts of different language styles. The points of working with texts that require special attention can be focused on according to the included criteria. The general conclusion can be related to the opinion that it is impossible to become a professional translator qualified in all translation areas in a short period of study. A specification is usually required for translators, followed by the acquisition of practical experience in a certain direction of translations. However, the method of translation transformations when teaching written translation in different speech styles is valuable for understanding the translator's work in the digitalization environment. A competent translator can qualitatively correct a machine translation and be the only subject of translation activity without alternative, capable of covering all aspects of working with a text to be translated. Especially when it comes to such dissimilar languages as Ukrainian and English, and the need for cultural, grammatical, lexical, etc. adaptation of texts.

Further research on the issue may have a narrower and therefore deeper focus. For example, to refer to the method of translation transformations for learning the written translation of a particular language style.

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## Intercultural and globalization factors in the development of multilingualism

### Інтеркультурні та глобалізаційні чинники розвитку мультилінгвізму

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#### Abstract

The aim of the study was to determine multilingualism in Ukraine with the identification of intercultural and globalization factors. The study involved statistical methods and comparative analysis. It was established that the phenomenon of multilingualism is characteristic of the Ukrainian people. During the period of its establishment, Ukraine was constantly under the socio-cultural influence of neighbouring states, which showed elements of chauvinistic ascendancy. However, the typical combinations of languages that were characteristic of multilingual groups of the population of Ukraine are being transformed in accordance with the current requirements. In particular, an increased influence of the official languages of the international community is recorded. The phenomenon of multilingualism for the Ukrainian people is contradictory, as it is mostly artificial, caused by intercultural factors of foreign countries. However, technological development, globalization processes and Ukraine's Euro-Atlantic aspirations form the

#### Анотація

Метою дослідження стало визначення мультилінгвізму в Україні з виявленням інтеркультурних та глобалізаційних факторів. Під час проведення дослідження було використано статистичні методи та компаративний аналіз. За результатами дослідження встановлено, що явище мультилінгвізму є характерним для українського народу, що протягом періоду становлення постійно перебував під соціокультурним впливом сусідніх держав, які проявляли елементи шовіністичних впливів. Однак, наразі типові комбінації мов, які були характерні для багатомовних груп населення України трансформуються у відповідності до вимог сучасності, зокрема фіксується збільшення впливу офіційних мов міжнародної спільноти. Явище мультилінгвізму для українського народу має суперечливу природу, оскільки, здебільшого має штучний характер, спричинений інтеркультурними факторами сторонніх країн. Однак, технологічний розвиток, глобалізаційні процеси та

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basis for a fundamental change in attitudes towards this phenomenon and the use of multilingualism as an advantage of Ukrainian society. Further research is aimed at obtaining the concept of systemic solutions for the positive use of the multilingualism of the Ukrainian people, in particular through the implementation of language combinations using languages recognized by the international society.

**Keywords:** Language, bilingualism, dynamics, forecast, globalization processes, mindrulingism.

## Introduction

The study of multilingualism in Ukraine is extremely relevant, as the country has a multilingual context and a rich linguistic landscape (Gazdag & Barany, 2023). The main reasons why the study of multilingualism in Ukraine is relevant:

1. Linguistic diversity: The study of multilingualism can help to study and understand the relationship between different language groups, the dynamics of linguistic diversity and the impact of languages on society (Pletnyova, 2020).
2. Language policy: Research can help establish effective mechanisms for the preservation and development of different language groups, promote linguistic equality, and build an inclusive language environment (Lanvers & Lunyova, 2023).
3. Intercultural communication: The study of multilingualism can contribute to a better understanding of intercultural interactions, building a tolerant and mutually accepting society, and the development of interethnic dialogue (Ivanova, 2023).
4. Education and language policy in schools: The study of multilingualism can have practical applications in the field of education, in particular in the development of bilingual education programmes, intercultural learning and support of linguistic diversity in schools (Kolesnyk & Biseth, 2023).
5. Linguistic rights and mindrulingism: The study of multilingualism contributes to the support of language rights of citizens and the development of mindrulingism — a person's ability to speak several languages without discrimination (Klinskyi, 2022).

These factors emphasize the importance of

євроатлантичне прагнення України, формує основу для докорінної зміни ставлення до даного явища та використання багатомовності як переваги українського суспільства. Подальші дослідження спрямовані на отримання концепції системних рішень щодо позитивного використання багатомовності українського народу, зокрема за рахунок впровадження мовних комбінацій з використанням визнаних міжнародним суспільством мов.

**Ключові слова:** Мова, білінгвальність, динаміка, прогноз, глобалізаційні процеси, міндрулінгвізм.

conducting research on multilingualism in Ukraine, which will contribute to the understanding, development, and maintenance of linguistic diversity in society.

## Unexplored issues

There are several unexplored issues that demonstrate the need for research on the impact of intercultural and globalization factors on the phenomenon of multilingualism in Ukraine: the impact of intercultural ties on multilingualism, the impact of globalization on linguistic identity, the policy of linguistic equality and multilingualism.

## Aim

The aim of the study is to analyse multilingualism in Ukraine over a 10-year period with a view to the influence of intercultural and globalization factors. The research is aimed at identifying the dynamics of this phenomenon and understanding its socio-cultural aspects, in particular regarding multilingualism in Ukrainian society.

## Objectives/questions

### Research objectives:

1. Conduct an informational and analytical search using multilocal sources containing relevant information about multilingualism in Ukraine, including intercultural and globalization factors that influence this phenomenon.
2. Collect statistics on the state of the language environment of Ukraine for a ten-year period. Analyse these specialized statistics

- to identify trends and changes in a multilingual context.
3. Apply statistical forecasting, using the analysis of specialized statistics, predict the possible development of multilingualism in the future.
  4. Carry out a comparative analysis of forecast variations, comparing different scenarios of the development of multilingualism based on statistics and forecasts.

### Literature review

Multilingualism is the state or ability of a person or community to speak two or more languages. It includes the ability to understand, speak, read and write in different languages. Multilingualism can manifest itself at different levels, from a basic level of proficiency in several languages to a high level of bilingualism or multilingualism, where an individual is proficient in several languages and uses them in different contexts and situations (Titone & Tiv, 2023).

Multilingualism can derive from cultural diversity, multilingual environment, migration, bilingual education or active learning of different languages. It is not limited to the understanding and use of individual languages, but also encompasses the understanding of cultural aspects, traditions, values and ways of thinking that are associated with each language (Kabra et al., 2023).

Multilingualism is an important phenomenon in the modern world, especially in the context of globalization and growing intercultural interaction (Mim, 2023).

There are different prerequisites for the emergence and development of multilingualism underlain by the following factors:

1. Linguistic environment: one of the prerequisites of multilingualism is a multilingual environment where different languages are used in everyday communication. This may be a region where multiple languages are official or where different languages have spoken language status (Zheng et al., 2023).
2. Cultural context: cultural factors also play an important role in the development of multilingualism. In the context of cultural diversity and migration processes, people often learn multiple languages to interact with different cultures and maintain their linguistic and cultural identity (Colantonio-Yurko, et al., 2023).
3. Family factors: in the family environment, multilingualism can result from different languages spoken by parents or different branches of the family. Children can learn more than one language from birth, which stimulates their multilingual competence (Sevinç & Mirvahedi, 2023).
4. Bilingual education: educational systems that offer the teaching of different languages can contribute to the development of multilingualism. Bilingual programmes, where children receive education in two or more languages, help them become multilingual (Koelewijn et al., 2023).
5. Individual interest and effort: a person's desire to learn different languages plays an important role in the development of multilingualism. Multilingualism can be a result of personal interest in other cultures, linguistic diversity and international communication (Ilmassafa et al., 2023).

These prerequisites can interact and influence the formation of multilingualism in an individual or community.

The analysis of globalization and intercultural factors in the development of multilingualism gives grounds to distinguish the following aspects:

1. International communication: the spread of global technologies and international connections necessitates effective communication between countries and cultures. This stimulates interest in learning languages that are used internationally, such as English, French, Spanish and others (Sokolovska, 2023).
2. Economic opportunities: globalization and international trade create a need for the ability to communicate effectively with partners from different countries and cultures. Knowing different languages can be a competitive advantage in the labour market, opening up new business and career opportunities (Muindi, 2022).
3. Migration processes: the growing migration promotes intercultural interaction and creates a multicultural environment. People who move to other countries are forced to adapt to new language contexts, which stimulates them to learn languages (Stavrakaki & Manoli, 2023).
4. Tourism and cultural exchange: the growing popularity of tourism and cultural exchange promotes greater contact between people from different countries. This necessitates language competence to perceive,

communicate and understand different cultures (Chand et al., 2023).

5. Supporting linguistic diversity: global organizations and initiatives promote the preservation and development of different languages and cultures. This may include support for bilingual education, language programmes and activities aimed at supporting language diversity (Pritam & Singh, 2023).

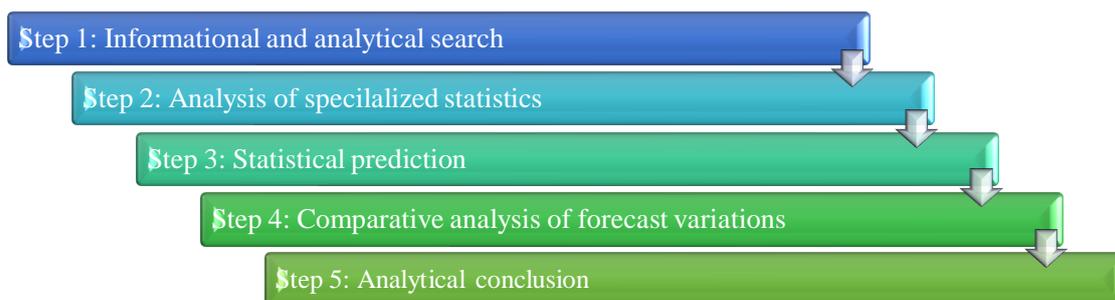
These factors enrich multilingual environments and promote the development of multilingualism in society.

So, multilingualism is a key factor in building a global language environment, promoting understanding and cooperation between cultures. Its further development requires the preservation of linguistic diversity and the development of effective policies that will facilitate the equal use of languages and ensure an inclusive linguistic environment for all.

## Methods

### Research design

The research design is illustrated in (Figure 1).



**Figure 1.** Research design.

Source: created by the author.

### Sampling

The sample for the study is formed based on the specialized statistics of the relevant institutions: CLEAR Global, EF EPI, Giessen Centre for Eastern European Studies (GIZO), State Statistics Service, Institute of the Ukrainian Language, KIIS, Razumkov Centre, Slovo i Dilo, etc.

## Methods

Research methods:

1. Analysis of specialized statistics on the state of the language environment of Ukraine in ten-year dynamics: This method includes the collection of statistics on the language environment of Ukraine during a ten-year period.
2. Statistical forecast based on the analysis of specialized statistics: this technique involves statistical methods and models to create a

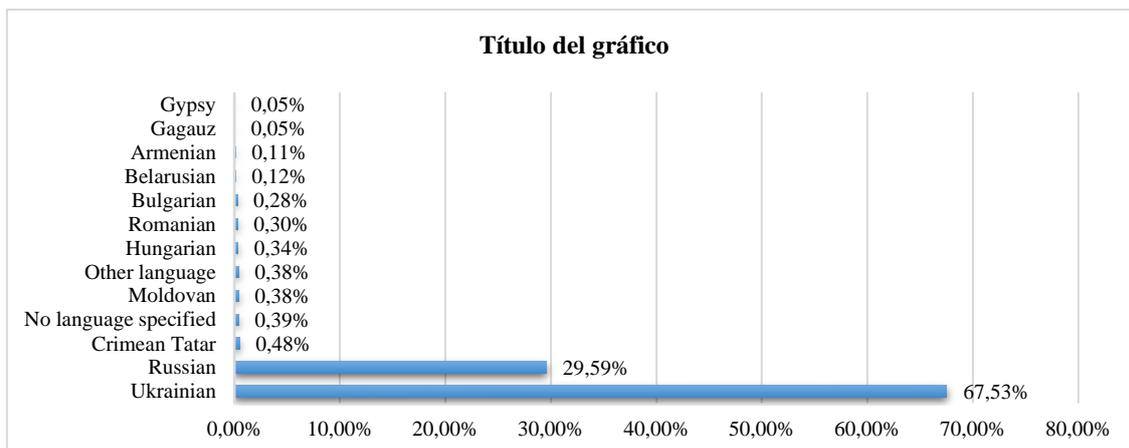
forecast of the development of multilingualism in the future.

3. Comparative analysis of predictive variations: this method involves comparing different scenarios of the development of multilingualism on the basis of predictive variations obtained through statistical forecasting.

Each of these research methods contributes to the understanding of the state and development of multilingualism in Ukraine, enabling analysis, forecasting and modelling of the impact of various factors on the language environment.

## Results

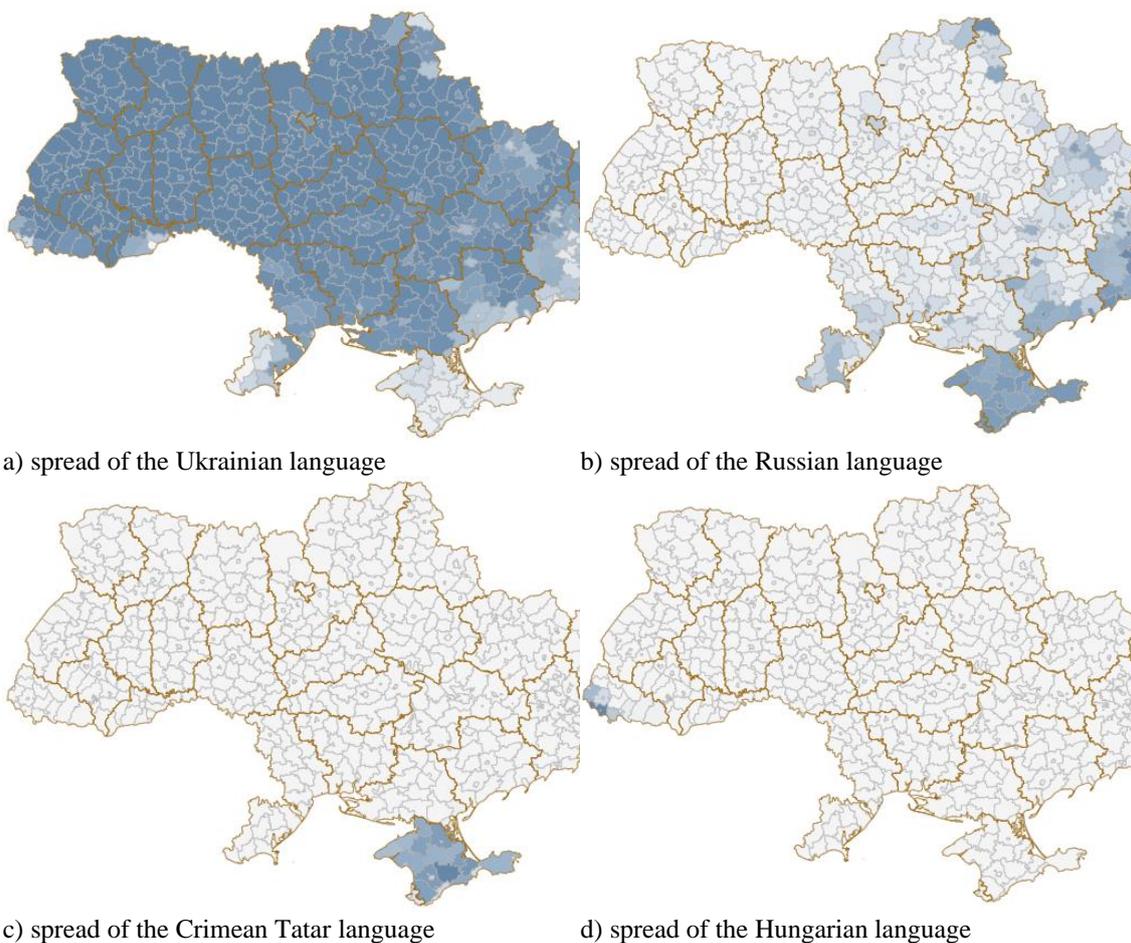
The analysis of specialized statistics involves the study of the language environment in Ukraine as a result of the establishment of Ukrainian society under the influence of intercultural factors — Figure 2.



**Figure 2.** Composition of the language space of Ukrainian society.  
Source: created by the author based on the statistics.

According to the given data (Figure 2), Ukrainian, Russian and Crimean Tatar languages prevail in the linguistic environment of Ukrainian society. This structure of the language space is determined by a system of intercultural factors: the localization of ethnic groups near foreign countries (Figure 3), the multifactorial Russian chauvinist influence, which is manifested in the results of the migration policy

of the communist ruling party of the Soviet era (the multi-stage deportation of ethnic Ukrainians from the south and east of Ukraine to Russia and settling this territory by invasive ethnic groups with Russian socio-cultural features) (Figure 3a; Figure 3b), as well as the artificial propagation of Russian education and culture mainly for the urban population of the country (Figure 3).

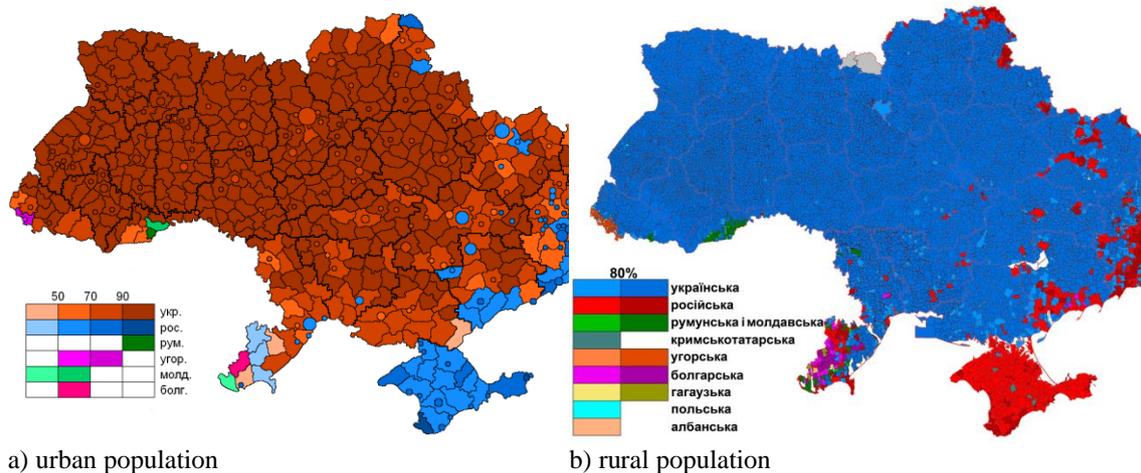




e) spread of the Romanian and Moldavian languages f) spread of the Bulgarian language

**Figure 3.** Visualization of the intercultural factor — local diffuse ethnic and cultural influence of foreign countries.

Source: created by the author based on the statistics



a) urban population

b) rural population

**Figure 4.** Visualization of the intercultural factor - artificial russification of the urban population of southern and eastern Ukraine.

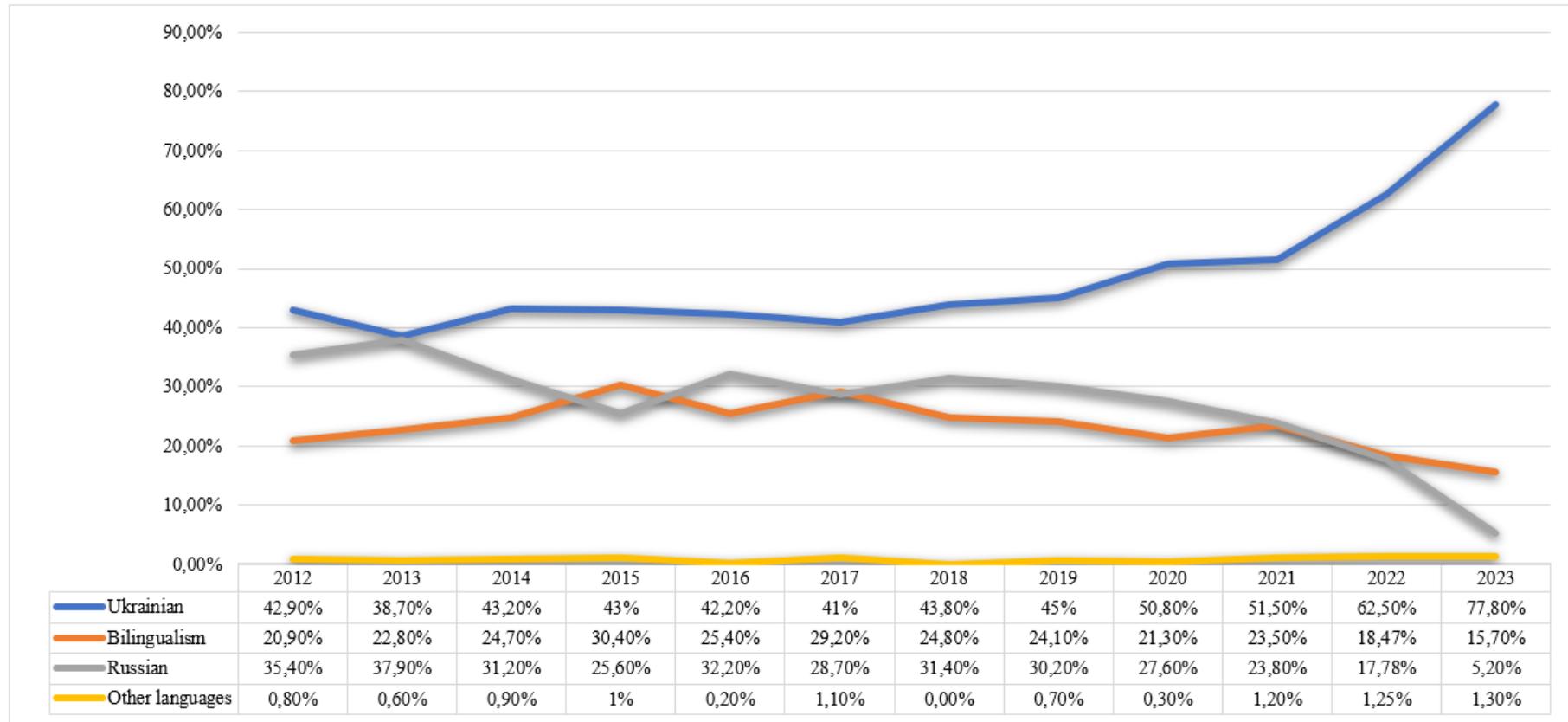
Source: created by the author based on the statistics.

The dynamics of bilingualism in Ukrainian society will be studied based on the specialized statistics using the example of the largest competing linguistic pair: Ukrainian and Russian languages - Figure 5.

The study of the bilingualism of Ukrainian society in the chronological dynamics of the last decade (Figure 5) gave grounds to conclude that the share of Ukrainians who use both Ukrainian and Russian languages in everyday life is approximately stable at 23.95%. At the same time, we observe that the situation changed radically after February 24, 2022 (in the projection for 2023) after the beginning of the large-scale unprovoked armed aggression of the

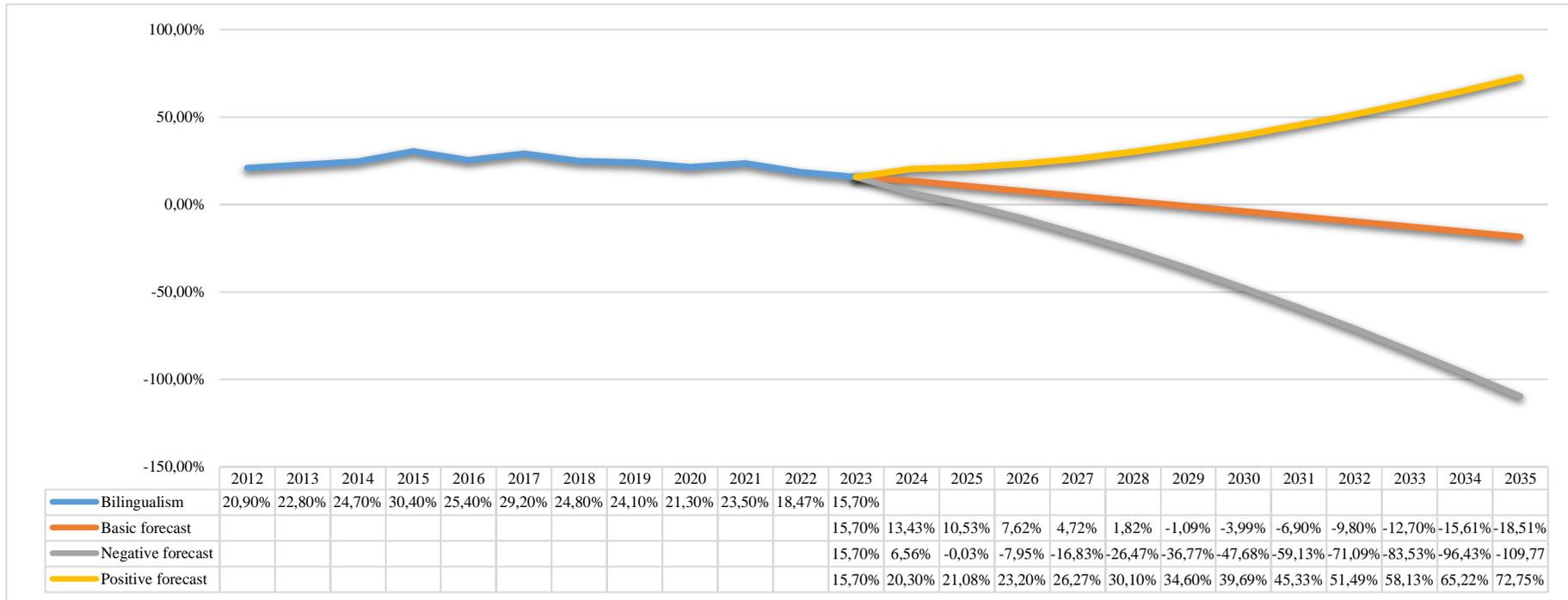
Russian Federation against Ukraine: the bilingualism of Ukrainian society decreased by 1.5 times relative to the median indicator.

The probable percentage of bilingualism in Ukrainian society in the next decade will be determined using statistical forecasting tools - Figure 6. According to the results of the statistical forecast (Figure 6), a further decrease in the typical bilingualism of Ukrainian society is expected. This is explained by the decreasing influence of artificial intercultural factors since the invasion of Russian socio-cultural aspects and the increasing level of national self-identification of Ukrainians.



**Figure 5.** Visualization of the dynamics of bilingualism in Ukraine.

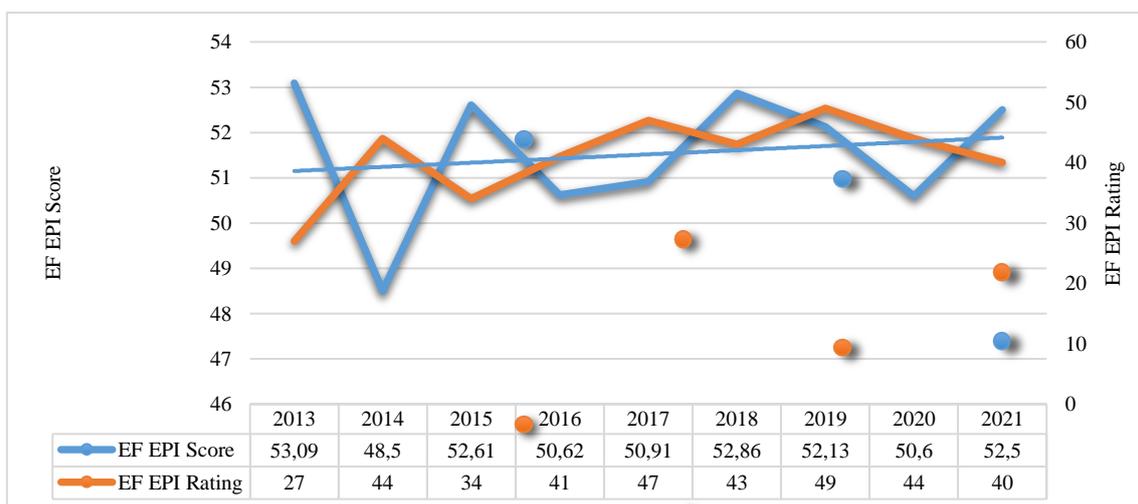
Source: created by the author based on the statistics



**Figure 6.** Statistical forecast of the development of bilingualism in Ukrainian society.  
Source: created by the author based on the statistics

It is worth noting that the phenomenon of multilingualism of the Ukrainian community is also influenced by globalization factors. In particular, the global influence of the internationally recognized language of international

communication - English - is observed. The assessment of the level of implementation of the English language by the Ukrainian society is determined by the EF English Proficiency Index (*EF EPI*) - Figure 7



**Figure 7.** Chronometric dynamics of the implementation of the English language in the Ukrainian community according to EF EPI.

Source: created by the author based on the statistics

The results of the assessment of the level of English language proficiency in the Ukrainian society (Figure 7) show a trend towards an increase in the EF EPI in the decade under research, which is due to the influence of the following globalization factors:

- social and everyday spread: the English language has taken a leading position in the global social and information space, because about 1.5 billion people communicate in English as their mother tongue or as a second language, which is 36.4% more than Chinese (Mandarin) language (1.1 billion users) and 2.5 times more than Hindi (602.2 million users);
- spread in the technical content space: according to the results of 2022, the English-speaking sector of the Internet amounted to 57.7%, almost 11 times exceeding the nearest competitor (5.3% - Russian-speaking sector);
- spread in the field of science and research: English is used by the majority of researchers and engineers;
- spread in the public sector: English has the status of a state language in 55 countries of the world (28.5% of the total);
- promising spread: the share of the English-

speaking sector of the world economic sphere will continue to occupy a leading position by 2050, and will increase to 34% of the world volume (3 times greater influence on the world economy than that of the closest competitor — Mandarin (Chinese) language (11%)), which will continue to let the English language occupy a leading position and increase the number of users to 1.65 - 2.0 million people.

The identified factors have a direct impact on the language policy of Ukraine, a country where Euro-Atlantic aspirations are enshrined in the Constitution. In particular, the “Law on the Use of the English Language in Ukraine” was developed and implemented on the initiative of the President of Ukraine. It gives the English language wider rights and state support in its implementation in the linguistic space of the Ukrainian community. That is, the state de facto shifts the contradictory vector of Ukrainian-Russian bilingualism towards the Ukrainian-English bilingualism.

Using the method of statistical forecasting, we will evaluate the likely dynamics of *EF EPI* for the Ukrainian society in the next decade - Figure 8, Figure 9.

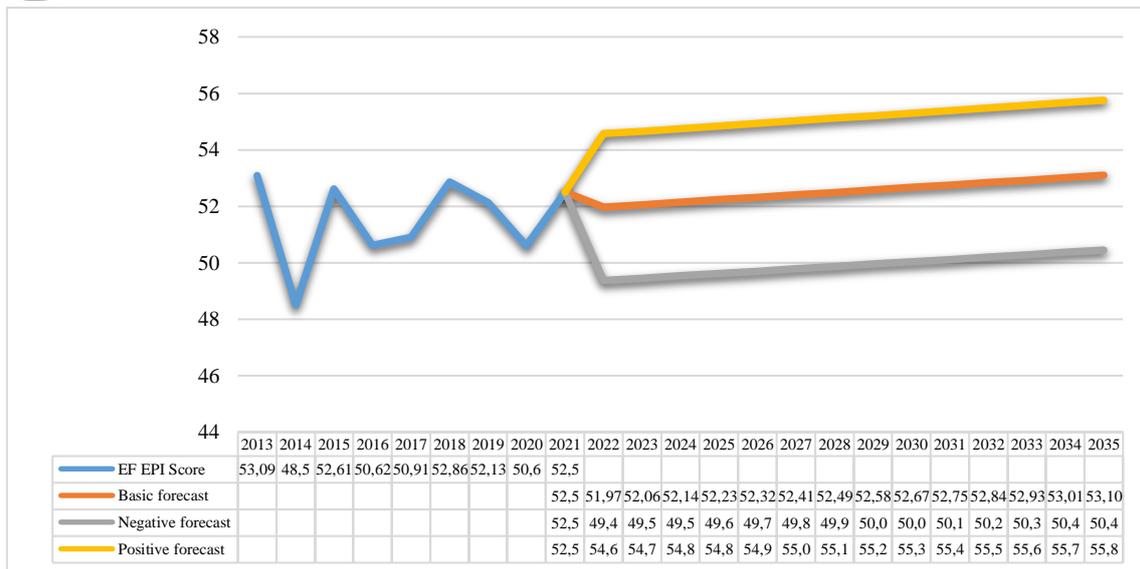


Figure 8. Statistical forecast of the EF EPI Score for Ukrainian society

Source: created by the author based on the statistics

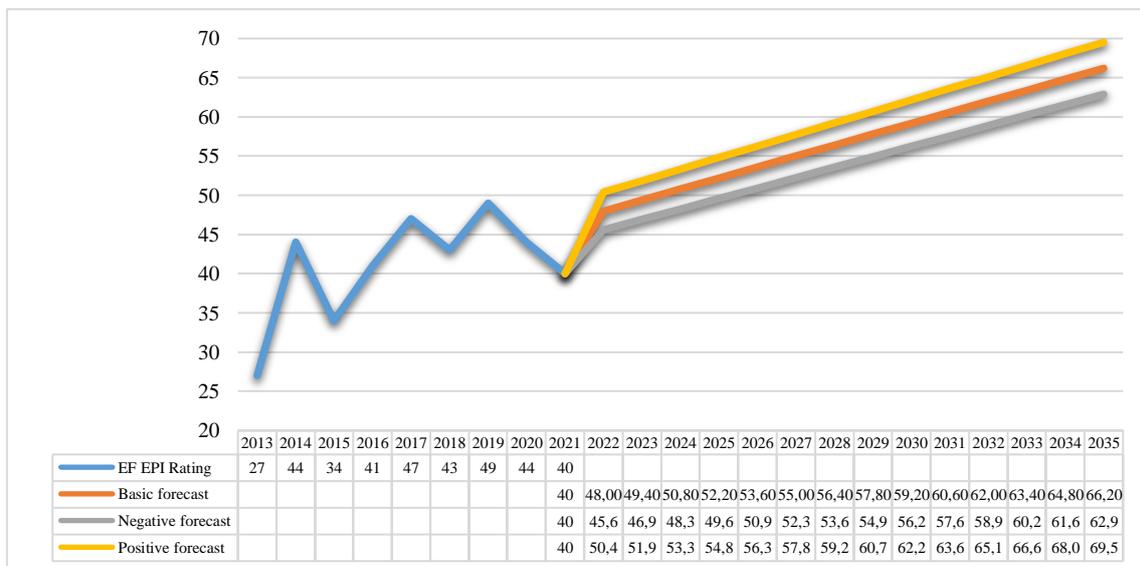


Figure 9. Statistical forecast of the EF EPI Rating for Ukrainian society

Source: created by the author based on the statistics

The obtained forecast results (Figure 8, Figure 9) show a probable increase in the level of English language proficiency in the Ukrainian society and the formation of a new type of multilingualism - Ukrainian-English bilingualism.

So, the results of the study indicate the practical prerequisites for changing the attitude of Ukrainian society to the phenomenon of multilingualism. The change of the controversial invasive artificial paradigm of Ukrainian-Russian bilingualism formed under the influence of multifaceted intercultural factors, by the modern paradigm of Ukrainian-English bilingualism, which derives from progressive

globalization processes, is recorded. Their implementation is extremely relevant for Ukraine, which is on the way to Euro-Atlantic integration.

### Discussion

The results of the study established the following key aspects:

- multilingualism of the Ukrainian community is a typical phenomenon that was formed under the influence of multifaceted intercultural factors, which correlates with the relevant findings (Wildemann et al., 2023; Averbuch, 2023);

- the most common multilingual phenomenon in Ukrainian society is Ukrainian-Russian bilingualism, which has a controversial intercultural chauvinistic artificial invasive origin. The researchers drew these conclusions in publications (Csernicskó & Máté, 2017; Hentschel & Taranenko, 2021);
- significant prerequisites were formed for replacing the toxic invasive paradigm of Ukrainian-Russian bilingualism with Ukrainian-English bilingualism, which is a response to globalization challenges for the Ukrainian community on the way to Euro-Atlantic integration. This aspect is confirmed in the studies (Dronova, 2023; Soroka et al., 2023).

The last aspect regarding the global influence of the English language is also evidenced by specialized statistics:

- According to estimates (HolonIQ, 2023) the field of international education is confirmed by certificates of the appropriate level of accreditation, which is provided during the creation and defence of attestation paper in English. The current scope of the specified educational services is estimated at 10 - 20 million students annually, and by 2030 this indicator will increase to 1 billion university graduates. This has direct economic consequences, because international education currently attracts investment of \$196 billion, and by 2030 it will amount to \$433 billion (with the projected average annual growth rate of 7.4%). So, it is necessary to have an appropriate level of English language proficiency in order to obtain a professional qualification of an internationally recognized accreditation level.
- (Adroit Market Research, 2021) estimate the current amount of investment in direct English language learning at \$12 billion and predict a further increase of the studied educational sector in 2029 to \$69.62 billion (with a forecasted average annual growth rate of 9.5%). The study Adroit Market Research (2021) notes that the following practical methods are most often used to learn English: classic based on thorough manuals, full-time course in the form of group training and online learning. According to Adroit Market Research (2021), the development of digital means of learning English is the key economic driver of the development of English language learning, but one of the restraining factors listed in this marketing research. There is a

lack of a unitary approach and an effective method of acquiring relevant skills in English;

- The analysis of the results of the marketing research Verified Market Research (2023c) gives grounds to conclude that the financial consequences of the growing influence of the English language on educational and professional activities will be manifested in the increased investment in English language proficiency tests for confirmation of one's level of qualification and accreditation. It is currently \$1.9 billion and will increase to \$6.2 billion by 2030 (with the projected average annual growth rate of 14.76%). It is noted in Verified Market Research (2023b) that The English Language Proficiency Test (ELPT) and The Test of English as a Foreign Language (TOEFL) are among the test leaders.
- However, the development of digital means forms qualitatively new approaches and changes the basic principles of the field of accreditation, which is a direct consequence of the increase in the number of specialized network educational platforms (Verified Market Research, 2023c) and the general digitalization of the English language learning. Investment in providing digital English language learning services will increase from the current \$4.13 billion to \$12.82 billion in 2028 (with a projected average annual growth rate of 15.32%) (Verified Market Research, 2023a).
- The globalization factors considered above give grounds to conclude that the identified trend towards the formation of Ukrainian-English bilingualism has relevant and essential prerequisites. This is extremely important for Ukraine, as it Euro-Atlantic aspirations are enshrined in the Constitution.

## Conclusions

### *Relevance*

The relevance of the study is determined by the need to identify potential directions of development of the linguistic environment of Ukrainian society on the way to the Euro-Atlantic integration of Ukraine. This includes, in particular, the need to replace the toxic artificially invasive paradigm of Ukrainian-Russian bilingualism with the globalization concept of Ukrainian-English multilingualism, which will contribute to the development of international communication, the attraction of foreign investment, increasing the country's competitiveness and increasing cultural

exchange.

### Research findings

The results of the study confirm the following key aspects:

- Multilingualism is widespread in Ukrainian society, which is formed under the influence of various intercultural factors. This is consistent with previous studies that confirm this trend.
- The most common form of multilingualism in Ukraine is Ukrainian-Russian bilingualism, which has a complex intercultural nature caused by artificial and invasive factors. This is confirmed by relevant studies on this issue.
- There are prerequisites for replacing toxic Ukrainian-Russian bilingualism with Ukrainian-English bilingualism, which is a response to global challenges for the Ukrainian community on the way to Euro-Atlantic integration. This aspect is confirmed by the results of studies that emphasize the need to change language priorities.

Considering these findings, it is important to elaborate a language policy that will promote the development of the Ukrainian language, maintain interest in learning English, and also provide access to quality education in both languages. Achieving these goals can contribute to better understanding and communication in the international context and promote the Euro-Atlantic integration of Ukraine.

### Applications

These conclusions can be applied in different areas to promote the development of the language environment and language policy in Ukraine. We will provide several possible areas of application: language policy, education, cultural exchange, international relations.

### Prospects for further development

Further studies can expand our understanding of multilingualism in Ukrainian society and explore new aspects of this phenomenon. Some possible prospects for further research are outlined below:

1. Expanding the scope of the study: further studies can cover a wider geographical area of Ukraine and different social groups, which will provide a more complete picture of the distribution and dynamics of

multilingualism.

2. Examining language practices: further research could better examine language practices and the use of different languages in different areas of life, including education, work environment, mass communication, and social networks.
3. Analysis of the impact of the linguistic environment: the studies can focus on the impact of a multilingual environment on individual and group identity, cultural practices, and relationships between different language groups.
4. Study of the language policy: further research may assess the effectiveness and outcomes of language policy in Ukraine, including measures to support the Ukrainian language, encourage English language learning, and regulate the use of other languages.
5. Impact of globalization: further research may explore the impact of globalization processes on multilingualism in Ukraine, including the spread of English, the growth of cultural pluralism, and changes in language practices.
6. Comparative studies: further studies can be conducted in comparison with other countries where there is a similar multilingual context, which will allow to understand the unique aspects of Ukrainian multilingualism and compare it with other contexts.

These areas of research can help expand our knowledge of multilingualism in Ukraine, develop more effective language policies, and contribute to the development of a language environment that meets the needs of modern society.

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## Structure and semantics of verbal means of expressing states of emotional tension in english publicistic texts

### Структура і семантика вербальних засобів вираження станів емоційного напруження в англійських публіцистичних текстах

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#### Abstract

*The aim* of the research is to contribute to a deeper understanding of the role and functioning of verbal means of expressing emotional tension in journalistic texts. *Methods.* The research involves such methods as comparative analysis, transformational analysis, contextual analysis, pragma-semantic analysis. Statistical processing and validation of the obtained data was carried out using Cronbach's alpha and mean square. *Results.* The results of the study helped to identify the linguistic features of expressing states of emotional tension. A total of 272 interjections that reflect emotional stress were found in the studied corpus. In general, 589 contexts of the use of modal words, which have the colouring of emotional tension, were also analysed. *Conclusions.* The study found that emotional stress in journalistic texts is strongly dependent on the context in which it is used. Understanding emotional expressions requires

#### Анотація

*Мета.* Дослідження має на меті допомогти більш глибокому розумінню ролі та функціонування вербальних засобів у вираженні емоційного напруження в публіцистичних текстах. *Методи.* В роботі використано такі методи, як компаративний аналіз, трансформаційний аналіз, контекстуальний аналіз, прагмасемантичний аналіз. Статистична обробка і валідація отриманих даних проводилася за допомогою альфа Кронбаха та середнього квадратичного значення. *Результати.* Результати дослідження допомогли виявити мовні особливості вираження станів емоційної напруженості. Так, у корпусі, що досліджувався виявлено 272 вигуки, які відображають емоційне напруження. Також проаналізовано 589 контекстів вживання модальних слів, що мають забарвлення емоційної напруженості. *Висновки.* Дослідження виявило, що емоційне напруження в публіцистичних текстах має сильну залежність від контексту, у якому воно використовується. Розуміння

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taking into account the sociocultural context, the goals of communication, and the relationship between communicators. *Prospects*. Further research can expand the scope and diversity of the corpus of journalistic texts, which will enable obtaining more representative results. Adding different genres, time periods, and authors will give a more complete picture of the verbal means of expressing emotional tension.

**Keywords:** emotivity, linguistics, communication, journalistic discourse, text corpus.

## Introduction

The research is aimed at analysing emotional expressions from the perspective of linguistics and communication, with the aim of clarifying the specifics and features of their expressiveness, which reflect states of emotional stress. This study is intended to aid in the understanding of the emotional dimension of speech acts and contribute to the further development of linguistics, communication sciences, and related fields (Ozel, 2023; Predelli, 2020).

There are different ways of expressing emotions in writing, determined by national, cultural, historical, and linguistic characteristics. Despite these differences, the verbal expression of emotions in different languages has a number of similar features, as a result of which emotivity can be considered a universal category of language (Stepanchenko, 2020).

Speakers of all languages experience such emotions as joy, happiness, hatred, sorrow, disappointment, anger. These emotions are universal for most languages. However, these emotions can manifest themselves more or less intensely depending on the specifics of the culture (Song, 2019).

Emotivity, in contrast to emotionality that occurs at the psychological level, is a linguistic category. Emotionality in this case reflects the mental state of a person, and emotivity is the expression of the speaker's emotions at the language level (Balakleiets, 2021).

The need to define the category of emotivity in language was determined by the growing interest of researchers in this language category and the development of the linguistics of emotions (Aytug et al., 2018). There is no unity of opinion regarding its definition among linguists who study emotivity as one of the linguistic categories. Choosing such a definition that could

емоційних висловлювань вимагає урахування соціокультурного контексту, цілей комунікації та відносин між комунікантами. *Перспективи*. Майбутні дослідження можуть розширити обсяг і різноманітність корпусу публіцистичних текстів, що дозволить отримати більш репрезентативні результати. Додавання різних жанрів, періодів часу та авторів дозволить отримати більш повне уявлення про вербальні засоби вираження емоційного напруження.

**Ключові слова:** емотивність, лінгвістика, комунікація, публіцистичний дискурс, корпус текстів.

cover all the features of the category of emotionality and express the essence of this concept is a rather difficult linguistic task, because the term itself contains many aspects (Vent, 2022).

Each language has special groups of words to express the emotional state of a person. Emotivity, like many other linguistic categories, is subject to sociocultural influence and reflects the individual traits of individual peoples. At the same time, there are a number of common features that are inherent in the verbal way of expressing emotions in different languages (Ozel, 2023; Palacios-Martínez, 2020).

Emotionally coloured vocabulary is a constituent part of the vocabulary of the language represented by lexemes that describe emotional states and processes. At the lexical level, emotions can be expressed using the following parts of speech: affective nouns, verbs, adjectives, modal particles, adverbs, caressing and swearing words (Voina et al., 2020).

## Aim

The aim of the study is to determine the features of the use of the structure and semantics of verbal means that express emotional tension in journalistic discourse.

## Objectives

1. Select the corpus of journalistic texts.
2. Identify markers of verbal means of expressing states of emotional tension.
3. Analyse the frequency of using specified markers in the selected corpus.

## Literature Review

Tomenchuk and Kotlyarova (2022) determined different ways of verbalizing positive emotions in speech. The authors studied and covered the means that people use to express their positive emotions, in particular, in conversational speech. The study focused on the analysis of linguistic characteristics accompanying positive emotional states of a person.

Akkurt et al., (2021) identified the peculiarities of the use of persuasive prosody in the prosecutor's speech, in particular in Ukrainian and English. The researchers analysed the prosodic characteristics used to achieve persuasiveness in speech. This study gives grounds for an idea about the specifics of the persuasion prosody and its influence on communicative effectiveness.

Khudoyberdievna (2021) studied the language that expresses the psycho-emotional state of a person. The author considered the linguistic means used to express psycho-emotional states in speech. The study focused on the role of language in the expression and communication of human psycho-emotional states. The author analysed various linguistic features, such as the use of specific lexical units, means of expression, syntactic constructions and other elements of language that help to express psycho-emotional states.

Kostusiak et al., (2022) considered the concept of crisis in the modern media and information field. The researchers analysed the ways of using and perceiving the concept of crisis in media texts, in particular in connection with military invasion.

Koch and Kaleniuk (2021) investigated the psycholinguistic possibilities of political concepts in the election campaign using the example of the slogan "Army. Language. Faith". The research analyses the influence of political concepts on the perception and conviction of voters. This article reveals the psycholinguistic aspects of political discourse and their role in the formation of emotional attitudes to political concepts in the election campaign.

Golovnia (2020) analysed lexical and stylistic means of emotional impact on readers of perfume industry texts. She covered lexical and stylistic means used to create an emotional impact on the audience.

Majid (2012) reviews current perspectives on emotions in linguistics. The researcher analysed

various aspects of emotions, including their effects on speech, language perception, and communication. This expanded the understanding of the role of emotions in speech and revealed their influence on human communication.

Bezrukov and Bohovyk (2021) studied communicative space and textual reality through the use of emotogenic means. The researchers identify the role of emotions in creating a language atmosphere and emotional mood. This article reveals the importance of emotional means in forming an aesthetic impression and perception of a work.

Struhanets et al., (2021) examined the expressive nature of national television broadcasting as a means of psychologically influencing society. Specific linguistic characteristics and language tools used in television broadcasting to enhance the emotional impact on the audience were analysed. The study identifies the role of expressiveness of speech in the media and its influence on public perception and behaviour.

Tomenchuk and Kotlyarova (2022) focused on ways of verbalizing positive human emotions in speech. The authors considered various linguistic means used to express positive emotions in speech.

Depraetere (2019) provides critical assessments of the principles of categorization of modal meanings. The author considers various approaches to the classification of modal meanings and their influence on the semantics and pragmatics of the English language. The article contains a critical analysis of the existing approaches to the categorization of modal meanings, their advantages and disadvantages.

Despite the considerable number of studies in the field of emotions in linguistics, there are some questions that remain open. The influence of different cultural contexts on the perception and expression of emotions in speech has not been sufficiently studied. Research into cross-cultural differences in the expression of emotions can help to better understand the role of cultural factors in communication (Panassenko et al., 2020).

Given the growing popularity of social media, it is important to examine how emotions are expressed and perceived in this context. The study of language and emotional expressions in social media can reveal the characteristics of

interaction and communication in the digital environment.

Some emotions, which may be multifaceted or complex, may require more detailed investigations. For example, research into ways of expressing conflicting or ambivalent emotions can lead to new insights into language strategies and tools used in such situations.

## Methods

### Design

The first stage of the research involved two methods — component analysis and transformational method — to identify lexical and syntactic markers of emotionality in text fragments. Lexical markers of emotionality are formal signals of emotions in the text.

The second stage provided for a linguistic analysis of the texts using the following methods. *Transformational analysis* was applied to identify the syntactic characteristics of emotional expressions, which distinguish them from other communicative and pragmatic language units. This analysis established syntactic similarities and differences between emotive expressions, which served as the basis for their structural classification. *Contextual analysis* was used to identify the specifics of emotional experience, which is reflected in emotive expressions. *Pragma-semantic analysis* revealed the place of emotional expressions in the system of speech acts.

### Participants

The authors of the study followed the rules for selecting the text corpus to ensure the reliability of the obtained results. The methods of mathematical statistics were used for this purpose. The text corpus was selected in accordance with the rules of forming a representative sample, and the obtained results of the analysis of the texts were subject to statistical verification.

The composition of the sample was determined using the probability sampling in order to ensure the representativeness of the sample from the entire collection of journalistic texts (Washington Post, 2022; USA Today, 2022; New York Times, 2022). This method involved a random and equally probable selection of texts from all units of the general population. This approach helps to reduce systemic errors, because random selection minimizes the

differences between the characteristics of the sample and the general population.

Sampling based on the random selection principles is a common approach in mass research in mathematical linguistics. This approach makes it possible to obtain reliable results and ensure the objectivity of text analysis.

### Instruments

The data were entered and processed was carried out using Microsoft Excel and SPSS Statistics 18.0. All data are given in relative (% of the number of respondents) values.

### Data Collection

1. *Comparative analysis* is a method used for the comparative study of two or more objects, phenomena, qualities or parameters in order to identify their differences and similar features. It helped to identify negative and positive emotion markers and revealed a quantitative preference for emotional statements that express emotional evaluation.
2. *Transformational analysis* was used to identify emotional markers in the text. Transformational analysis involved a systemic study of text fragments in order to identify lexical and syntactic features indicating emotional expressions. These were certain words, phrases, constructions or changes in the structure of emotionally coloured sentences.
3. *Contextual analysis*. This method was aimed at revealing the specifics of emotional experience, which is manifested in emotional expressions.

Contextual analysis involved a detailed study of the contexts in which emotional expressions occurred. Such factors as the situational context, the role of the interlocutors, the atmosphere and other factors affecting the perception and expression of emotions were considered. In the process of contextual analysis, a detailed classification and categorization of emotional expressions was carried out depending on their contextual meaning.

4. *Pragma-semantic analysis* involved studying the interaction between the speaker and the addressee, as well as their contextual environment. The study was conducted to find out how emotional expressions affect the communicative processes between people. The role of emotions in the

performance of various speech acts, such as persuasion, warning, wish, etc., was studied. Pragma-semantic analysis helped to consider emotional expressions as an important aspect of speech communication. It revealed how emotions affect the perception and interpretation of language messages, as well as how they are formed and transmitted within the communication process.

### Analysis of Data

1. *Statistical mean* of the frequency of use.
2. *The Cronbach's alpha reliability coefficient* indicates the internal consistency of the test assignments. The Cronbach's alpha is calculated according to the formula 1:

$$\frac{N}{N-1} \left( \frac{\sigma_x^2 - \sum_{i=1}^N \sigma_{Y_i}^2}{\sigma_x^2} \right) \quad (1)$$

Where  $\sigma_x^2$  – total test score variance;  
 $\sigma_{Y_i}^2$  – variance of  $i$  element. Values in the range of 0.7 - 0.8 are considered satisfactory.

### Ethical criteria

Data collection from journalistic texts complied with anonymity of sources and confidentiality rules. The authors determined that the data of the texts will be used for scientific purposes only and will not be disclosed in order to violate privacy or influence the authors of the texts. The study was conducted in accordance with ethical standards that require careful and objective use

of data. The authors sought to avoid any form of data manipulation or distortion of results in order to obtain the desired conclusion. The authors respected copyright when using journalistic texts. Citation and appropriate recognition of authorship contributed to the protection of intellectual property and ensured academic integrity. Inviolability and immutability of the sources of the texts were maintained during the analysis of the texts.

### Results

Interjections occupy a special place in the language not only because of their syntactic properties, but also because of their semantic and functional characteristics. Interjections have been found to lack a subject-logical meaning and a nominative function. At the general level, three groups of units are distinguished depending on their main functional and semantic level: 1) emotions and emotional assessment (the widest group of interjections); 2) manifestation of will; 3) etiquette. This semantic classification gives reason to propose the nuclear status of interjections with the meaning of emotions and emotional assessment within the field of expressiveness that we constructed.

A complete selection of one-word interjections from modern journalistic texts is presented. Vocables with the grammatical marks “interjection” (interj) / “exclamation” in the definition of which contained the signs emotivity and emotional tension were subject to removal. The analysis of dictionary entries was the basis for making a list of units uniquely identified as “exclamation” (Table 1).

**Table 1.**

*A dictionary selection of interjections with the meaning of emotions and emotional tension.*

|          |                    |          |               |           |
|----------|--------------------|----------|---------------|-----------|
| 1. aargh | 10.gee             | 18.humph | 28.phew       | 38.whee   |
| 2. ah    | 11.ha              | 19.o     | 29.phooy      | 39.whew   |
| 3. aha   | 12.heh             | 20.oh    | 30.phwoar     | 40.wow    |
| 4. bah   | 13.hey             | 21.oho   | 31.poooh      | 41.yay    |
| 5. eek   | 14.hm              | 22.ooh   | 32.tut (-tut) | 42.yikes  |
| 6. eh    | 15.ho-hum          | 23.oops  | 33.ugh        | 43.yippee |
| 7. eww   | 16.hooray / hurrah | 24.ouch  | 34.uh-oh      | 44.yoi    |
| 8. faugh | 17.huh             | 25.ow    | 35.um         | 45.yuk    |
| 9. fie   |                    | 26.pah   | 36.umph       | 46.yum    |
|          |                    | 27.pfui  | 37.urgh       |           |

*Source:* created by the authors of the research

Contextual analysis of expressions of emotions and emotional assessment reveals a wide range

of emotive meanings realized in utterances. We systematize the results of the analysis in Table 2.

**Table 2.**  
*The results of the statistical analysis of interjections with the meaning of emotions and emotional tension.*

| New York Times (2022) | USA Today (2022) | Washington Post (2022) | Statistics        | Contextual meaning  |
|-----------------------|------------------|------------------------|-------------------|---|
| aargh – 18            | aargh – 15       | aargh – 5              | 38                | anger<br>irritation<br>panic<br>confusion<br>despair<br>fright<br>anxiety<br>panic<br>embarrassment |
| ah – 22               | ah – 28          | ah – 20                | 70                | surprise<br>mockery<br>inspiration<br>sympathy<br>pleasure  |
| eek – 2               | eek – 1          | eek – 2                | 5                 | fear<br>fright  |
| ha – 0                | ha – 9           | ha – 2                 | 11                | mockery<br>irony<br>disapproval<br>annoyance  |
| humph – 22            | humph – 14       | humph – 12             | 50                | disappointment<br>neglect<br>doubt  |
| pah – 10              | pah - 7          | pah – 8                | 25                | distrust  |
| ugh – 20              | ugh – 26         | ugh – 24               | 70                | neglect<br>irritability<br>disgust  |
|                       |                  |                        | <b>Total: 272</b> |   |

Source: created by the authors of the research

Interjections of the English language express different clusters of emotions and feelings, which are interpreted as varieties of emotional meanings in terms of linguistic realization. The fusion of the formal side of the linguistic sign and the emotional experience conveyed in speech is a characteristic feature of the realization of emotivity. Interjections manifest themselves both as a verbal emotional tool and as a direct realization of emotion. In the analysed contexts emotivity is revealed more fully with interjections than in case of other expressive grammatical means. The emotive meanings of expectation and forecast — excitement, anxiety, fear, despair — are found.

Lexico-grammatical means of expressing subjective modality, which form a zone of interaction between the fields of modality and expressiveness, deserve special attention. An independent lexico-grammatical group of units is often singled out, which is called “modal words”.

As there is a lack of unambiguous means of identifying modal words in English explanatory dictionaries, the circle of these units was determined and clarified with the help of grammatical sources and a sample of literary texts. This was followed by the analysis of their semantics and functioning. We systematize the statistics obtained as a result of the analysis in the form of a table (Table 3).

**Table 3.**  
*Statistical interpretation of modal words in journalistic texts.*

|               | New York Times (2022) | USA Today (2022) | Washington Post (2022) |
|---------------|-----------------------|------------------|------------------------|
| Actually      | 45                    | 65               | 37                     |
| Apparently    | 32                    | 35               | 21                     |
| Astonishingly | 2                     | 0                | 1                      |
| Certainly     | 8                     | 17               | 24                     |
| Clearly       | 0                     | 3                | 0                      |
| Definitely    | 2                     | 0                | 0                      |
| Fortunately   | 0                     | 4                | 3                      |
| Frankly       | 4                     | 1                | 2                      |
| Honestly      | 6                     | 8                | 8                      |
| In fact       | 22                    | 54               | 34                     |
| Ironically    | 4                     | 6                | 3                      |
| No doubt      | 0                     | 3                | 6                      |
| Obviously     | 16                    | 9                | 2                      |
| Perhaps       | 23                    | 43               | 45                     |
| Sum:          | 164                   | 248              | 186                    |
| <b>Total</b>  | <b>598</b>            |                  |                        |

*Source:* created by the authors of the research

A total of 598 contexts of the use of modal words were analysed. Apparently, the large corpus of units that researchers recognize as modal words was not involved. Functional and stylistic marking in these units may be one of the reasons for uneven statistics.

Besides, the frequency of use of modal words in the analysed texts is influenced by the author's preference factor: the choice of lexicogrammatical units with the meaning of modality is determined to some extent by artistic tasks. The analysis of the speech realization of the selected units shows the diversity of their functional semantics.

Modal words are non-specific (non-special) expressive means, as they do not clearly express the semantic dominants "emotivity" / "intensity", they combine several semantic functions. Considering this, they occupy a peripheral position in the model being built, and formally represent the intersection of the fields of expressiveness and subjective modality.

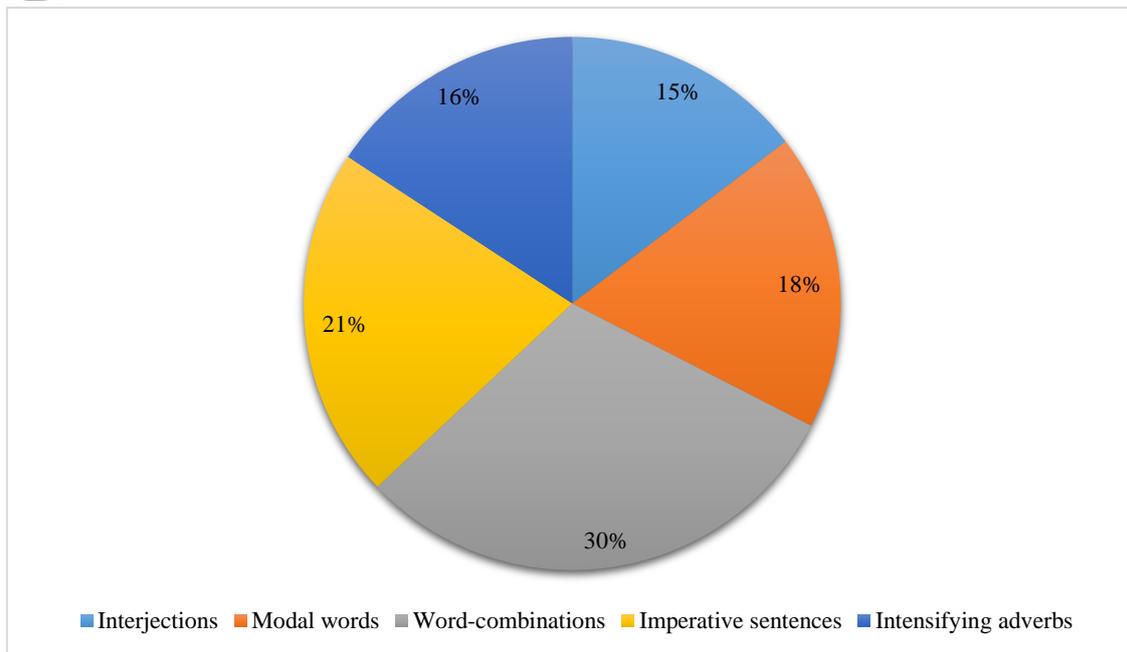
The category of expressiveness is revealed in the communicative act at the sentence level. In syntactic theory, repeated attempts were made to build a classification of sentences based on the principle of emotional and expressive certainty.

The sentence itself is the sphere of functional realization of units of lower linguistic levels and

concentrates their emotional "charge". Despite the fact that the sentence shows the accumulation of the values of its components, the expressiveness of this syntactic unit is not reduced to the sum of "non-neutral" actualizations of linguistic means. The sources and mechanisms of expressiveness of a sentence as an independent speech unit were identified through the analysis of the structural and semantic characteristics and functioning of traditionally distinguished communicative types of sentences in terms of emotional impact.

The functional semantic analysis of expressive grammatical means of the English language reveals groups of objects for which the expression of the dominant values of "emotivity" and "tension" is a linguistic, primarily, semantic function. It is a combination of paradigmatic and syntagmatic units (morphological, lexicogrammatical and syntactic), forming two centres of the field model of the category of expressiveness.

In conclusion, we note the productivity of the analysis of expressive grammatical means of the English language. The study confirmed the functional activity and significance of grammatical units and tools during the objectification of the emotional and sensory sphere of a person in speech communication (Figure 1).



**Figure 1.** Functional activity and significance of grammatical units and means of expressing emotional tension

Source: created by the authors of the research

The “emotionality” centre is represented by lexico-grammatical (interjections) and syntactic units (exclamatory sentences) that express the emotional experiences of the subject of speech, thereby affecting the addressee. These means do not enter into a relationship of synonymy with neutral linguistic units and in speech actualization represent an expressive version of the linguistic norm.

### Discussion

Structuring of the category of emotional intensity of verbal means of the English language made it possible to consolidate different language units and speech means of emotional influence: morphological, lexico-grammatical, and syntactic. As part of the study, the mechanisms and methods of explication of the main and secondary meanings of the category of emotional tension by grammatical means of the English language during their use in speech were determined. Aytug et al., (2018) and Bezrukov (2020) conducted similar studies. As in this study, the above-mentioned authors determined the frequency of using features of emotional vocabulary in journalistic English-language discourse. The research resulted in a broader understanding of the lexical and grammatical means of expression of journalistic texts.

The morphological, lexico-grammatical, and syntactic systems of the English language have specific units at their disposal, the semantic

functions of which are reduced to the category of expressiveness. This is also stated in the studies of Kots (2021) and Kuang et al., (2019). The authors call this type of units system-linguistic expressive grammatical units of the English language. Predelli (2020) and Shestakova (2023) clarified expressive means and came to the conclusion that this issue is insufficiently studied in the context of journalistic and scientific discourses.

English language systems also include semi-functional units. Their expressive function is secondary or acquired: ungrammatical intensifier adverbs, modal words, word combinations, imperative clause. This can be confirmed in the works of such authors as Slavova et al., (2021) and Song (2019). The authors define lexico-grammatical units (grammaticalized adverbs of measure and degree of feature), which can be recognized as occasionally expressive, acquiring an expressive function in contexts with emotional and evaluative vocabulary.

The functional semantic field of expressiveness is structured by outlined paradigmatic and syntagmatic units and speech means. Zabolotna (2023), Kopera and Rudina (2021) confirmed that it has a polycentric structure with a distinct core. According to the authors, this is caused by two types of semantic functions within the general category of expressiveness — emotivity and intensity.

The theoretical results of the study reveal the main structural features and semantic characteristics of verbal means of expressing states of emotional tension. The study revealed that journalistic texts use a variety of lexical, grammatical and stylistic means to convey emotional tension. For example, intensive adjectives, verbs, adverbs, as well as idioms, metaphors and irony may be used.

The practical results of the research are important for journalistic practice. Knowledge of the structure and semantics of verbal means of expressing states of emotional stress allows journalists, writers and other authors to effectively convey their emotions and create an emotional sound of texts. The use of appropriate lexical and grammatical constructions can increase the intensity of the impression, which contributes to effective communication with readers or listeners.

Besides, the study emphasizes the importance of context in understanding verbal means of expressing states of emotional tension. The understanding of semantic nuance and emotional stress can change depending on the context, so authors need to take into account contextual features and adapt their choice of verbal means of expressing states of emotional tension to a specific text.

So, the theoretical results of the study reveal the structure and semantics of verbal means of expressing states of emotional tension in English journalistic texts, and the practical results provide useful instructions and recommendations for writers, journalists and other authors on the effective expression of their emotions and the creation of emotional colouring in texts.

The study may be limited by the scope and diversity of the sample of journalistic texts, which may affect the generalization of the results to a wider corpus of texts. Research can be limited to a specific time period, specific authors or genres of journalism. The definition and categorization of states of emotional tension can be subjective, as they are based on the researcher's perception. Different researchers may have different ideas about emotional states, which can affect the objectivity of the results. The research concerns the verbal means of expressing states of emotional tension in English journalistic texts, which may create limitations in the translation of the results into other languages. Linguistic features, such as grammatical structures, lexical nuances and phraseology, can vary in different languages and affect the

expressiveness and effectiveness of expressing emotional tension.

## Conclusions

*The relevance* of this study is determined, on the one hand, by the active research interest in the human factor in language in general. On the other hand, it is determined by insufficiently studied functional semantic specifics of the category of emotional tension, lack of a systematic analysis of expressive grammatical means of the English language. *Research findings.* The study confirms the assumptions of linguists regarding the superiority of the linguistic expression of the semantics of "deviation from the norm". It is proven that English journalistic texts use a wide range of verbal means to express states of emotional tension. This includes expressive vocabulary, intensive adjectives and verbs, metaphors, rhetorical devices and other linguistic tools. It was also confirmed that the structure of verbal expressions interacts with their semantics in expressing states of emotional tension. Phrasal structure features, syntactic structures, and semantic connections between words affect the emotional impact of the text on the audience. *Applications.* The results of the study can contribute to the expansion of the theoretical understanding of the semantics and structure of verbal expressions of emotional stress. They can also serve as a basis for further linguistic research in the field of emotional linguistics and journalism. Understanding the verbal means of expressing emotional tension can be useful for communication and media professionals. They can use this knowledge to create effective journalistic texts that can convey intense emotional states and influence the audience. *Prospects for further research.* Further research may examine the effects of different contexts on the expression of the states of emotional tension. Understanding of the effect of different situations, topics, and audiences on the use of specific verbal tools can reveal new aspects of communication and emotional impact.

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## Mykola Rudenko's poetry and prose as a platform for popularizing the author's alternative hypothesis of the Universe

### Поезія та проза Миколи Руденка як платформа для популяризації авторської альтернативної гіпотези світобудови

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#### Abstract

The results of literary research of members of Sumy Branch of Scientific Society named after Serhiy Podolyns'kyu are presented, which reveal the uniqueness of literary output of outstanding Ukrainian writer Mykola Rudenko. His literary legacy is unique because the writer used it as a popularization platform of his scientific hypotheses, and ideas; it saturates textual essence of his works with scientific terminology, formulas, mathematical, physical calculations; forms reader's scientific worldview and allows wide readership to participate in writer's scientific discoveries. The purpose of study is to show how scientific hypothesis of Mykola Rudenko's Monadic world structure was formed and how it was reflected in his works.

Research used general scientific (analysis, synthesis, comparison) and literary methods (systemic approach, hermeneutic, etc.).

The works of I. Voloshyn, H. Vivat, P. Grigorenko, B. Pastukh, T. Trofymenko, O. Nezhiviy, V. Shevchuk allow to comprehensively comprehend the legacy of Mykola Rudenko.

A detailed analysis of works of M. Rudenko allows us to conclude: 1) writer used his literary works as a platform to popularize his scientific research;

#### Анотація

Представлено результати літературознавчого дослідження членів Сумського осередку Наукового товариства імені Сергія Подолинського, що розкривають унікальність художнього доробку видатного українського письменника Миколи Руденка. Художній спадок митця є унікальним тим, що письменник його використовував як платформу для популяризації своїх наукових гіпотез, ідей і припущень; це насичує текстову тканину творів науковою термінологією, формулами, математичними й фізичними розрахунками, формує у читача науковий світогляд і дозволяє долучитися до наукових відкриттів письменника широкій читачській аудиторії. Мета дослідження – показати, як формувалася наукова гіпотеза монадної світобудови Миколи Руденка і як це відбивалося у його поезії та прозі.

У дослідженні використано загальнонаукові (аналіз, синтез і порівняння) та літературознавчі методи (системний підхід, герменевтичний та ін.). Всебічно осягнути спадок Миколи Руденка, дозволяють розвідки І. Волошина, Г. Віват, П. Григоренка, Б. Пастуха, Т. Трофименко, О. Неживого, В. Шевчука.

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2) M. Rudenko managed to create whole layer of "scientific" poetry and prose; 3) one should not consider his poetry and prose as an appendix to "Energy of Progress" – they are autonomous works, especially lyrics.

**Keywords:** the Universe, Mykola Rudenko, the Monad, poetry, prose.

## Introduction

The strategic direction of science development, which was settled in recent years, showed that it did not bring mankind closer to the solution of global world problems, but, on the contrary, exacerbated them and distanced a man from the Nature and the Cosmos. The task of the third millennium, with its innovations, powerful scientific and technical development on the one hand, and military confrontations and aggravation of global problems on the other, should be the defining aspiration of humanity to build a civilization on the planet based on humane, valuable foundations. Humanity cannot achieve the set goal without understanding the fundamentals. Ukrainian writer, researcher, public figure Mykola Rudenko understood this more than forty-five years ago and it was this recognition that prompted him to search for the answer to the questions how the Universe is arranged and what is the meaning of Human's life. The researcher published the results of his research in work "Gnosis and Modernity (Architecture of the Universe)" and popularized it in poetry and prose, which made his literary output unique.

The subject of our research is Mykola Rudenko's scientific work "Gnosis and Modernity (Architecture of the Universe)", his poetry and prose, which reflect the writer's alternative hypothesis. It should be noted that poetry and prose are not an addition to scientific research or an illustration of writer's scientific and philosophical thoughts, they are completely autonomous and self-sufficient literary texts, especially lyrics.

## Theoretical Framework

Since Mykola Rudenko is the author of more than 25 poetry collections, different genres of prose works and scientific works in the field of

Детальний аналіз поезії і прози М. Руденка дозволяє зробити ряд висновків: 1) письменник використовував художній доробок як платформу для популяризації своїх наукових пошуків; 2) М. Руденкові вдалося створити цілий пласт «наукових» поезій та прози, що є унікальним для української літератури; 3) незважаючи на те, що впродовж його романи розкривають здобутки письменника у царині космології та фізичної економії, не варто розглядати його поезію та прозу як додаток до «Енергії прогресу» – це автономні твори, особливо лірика.

**Ключові слова:** Всесвіт, Микола Руденко, монада, поезія, проза.

cosmology and physical economy, the directions of research of his legacy were divided into two vectors – the study of literary works, biography of writer and the study of his scientific works. Therefore, a wide circle of researchers are interested in M. Rudenko's creative heritage.

Many literary experts were interested in life path of the writer. You can learn about his life and activity from P. Hryhorenko's work "Mykola Rudenko – Poet, Philosopher, Fighter", which contains many memories of rebellious general (Hryhorenko, 1978).

M. Slaboshpyts'kyi in the article "But there is still God... And there is still Ukraine..." emphasized that the reality, when the aspiring poet M. Rudenko appeared on the literary scene, was "much scarier than in Orwell's Utopia "1984"" (Slaboshpyts'kyi, 1990, p. 68) and analyzed the terms of M. Rudenko's formation as a poet.

V. Shevchuk studied the economic model of management according to M. Rudenko and the works of representatives of Ukrainian scientific school of physical economy; he mentioned that "...the physical economy paradigm revived by M. Rudenko is an example of the beginning of unity of that segment of knowledge that outlines economic aspect of social and general civilizational existence" (Shevchuk, 2009).

O. Nezhyvvy confidently stated that "...his firm and unyielding civil position as a human rights defender is admirable, and his philosophical poetry has become one of the best treasures of Ukrainian literature" (Nezhyvvy, 2010).

I. Voloshyn claimed that "... on the basis of the energy approach, M. Rudenko developed a theoretical model of a closed economy that

operates under conditions of simple reproduction and consists of agrarian, industrial and state sectors" (Voloshyn, 2018, p. 50).

Researcher H. Vivat focused on the analysis of M. Rudenko's poetry. H. Vivat noted the analysis of M. Rudenko's poetry, defining scientificity as a characteristic feature of poet's lyrics and its type as "poesia doctus" (Vivat, 2008, p. 4). On occasion, we ventured to disagree with H. Vivat's opinion in those places where the researcher reflects on the Matter, the Substance and the Man. The author insists that a person belongs to material world, but we, in agreement with M. Rudenko, hold the opinion that a man is a part of material world, which cannot be equated with the concepts of "The Substance" and "The Matter".

O. Brovko focused on the study of dynamics of M. Rudenko's poetics, which manifested at genre level, highlighted the stages of poet's creative development (Brovko, (2003).

B. Pastukh studied the phenomenon of ecocriticism in M. Rudenko's novel "Eagle Beam". The researcher proves that the writer showed industrialization from a different perspective than the socialist realist writers, which indicates the movement of writer's creativity "against the thematic rules of socialist realism" (Pastukh, 2014, p. 348).

T. Trofymenko in her work "Tragedy in Three Acts. Holodomor in Ukrainian Literature" made an attempt to determine who was the first among Ukrainian post-Soviet writers to boldly discuss the subject of Holodomor, which was forbidden by the official censorship. In two sentences, she mentioned M. Rudenko's poem "The Cross", written in 1976, without resorting to deep analysis (Trofymenko, 2011, p. 156-159).

I. Renchka found out that the writer paid great attention to the coverage of the processes of russification and denationalization in Ukraine during 1930-1980, and proved that the language issue occupies one of the central places in thoughts of the writer-philosopher and human rights defender Mykola Rudenko (Renchka, 2019, p. 347-352).

Nevertheless, despite the considerable number of works devoted to M. Rudenko's literary heritage study, they are not exhaustive, because the researchers focus on separate aspects of creativity. We insist that the legacy of M. Rudenko must be studied comprehensively with a multi-perspective approach, because it allows

us to reveal the multi-vector nature of interests of Ukrainian writer, to research the cultural, political, economic and scientific discourse of the 20th century, of which M. Rudenko was a part, and his impact on the development of literature and science of Ukraine in the 21st century.

### Methodology

Working on the study of literary and intellectual heritage of M. Rudenko, we discovered that in modern Ukraine, with its changes and reforms, there has been a significant interest in rereading the works of the writer. Of special interest today are the works of M. Rudenko in the field of physical economy, his views on the economic, ecological, and humanitarian problems of mankind. Literary experts, researching the works of M. Rudenko, studying the literary features of his work, emphasize the acuteness of the issues raised by the author, which are still relevant to this day.

To achieve the goal of our work, combination of general and special research methods was used. General scientific methods (analysis, synthesis, comparison) made it possible to find out that until now there have been no attempts to study the prose and poetry of M. Rudenko as a platform for the implementation and popularization of his scientific research. First of all, a systematic approach was applied to study writer's literary and intellectual heritage. A detailed study of reflection of Monadic hypothesis of writer's world structure in his poetry and prose would be impossible without the use of special literary methods and techniques. The hermeneutic method was applied to understand and interpret the scientific and artistic texts of M. Rudenko and was used for comprehensive interpretation of author's presentation of hypotheses and ideas in literary works. The historical-functional method allowed studying and predicting the place and the role of writer's legacy in modern historical-literary discourse. A historical-genetic research method was used to study the genesis of M. Rudenko's works of art, the prerequisites of their ideas and radical changes in perception and interpretation of writer's creative heritage as a result of changes in public consciousness and the study of place of his works in Ukrainian literary process.

### Results and Discussion

In order to understand M. Rudenko's hypothesis about the world structure and the reasons that forced him to carry out a parallel presentation of scientific research in literary works, one should

at least cursory look at circumstances in which his alternative hypothesis was born and formed. M. Rudenko set out his view on the structure of the Universe in a separate chapter entitled "Gnosis and Modernity (Architecture of the Universe)" of fundamental work "Energy of Progress", in which, in addition to the hypothesis about the Monadic world structure, which is the subject of research of our work, the writer spoke about the Ukrainian scientific school of physical economy, among the prominent representatives of which are the names of S. Podolyns'kyi and V. Vernads'kyi.

"Gnosis and Modernity (Architecture of the Universe)" is dated April-May 1976. It was later confiscated by the KGB and was hidden in the archives of the Committee for more than two decades. The writer returned to it in January 1999: rewrote the fifth chapter, expanded the tenth, and carefully edited the entire text. In May 2000, M. Rudenko added an appendix entitled "From the author's diary". The scientific work, to which Ukrainian thinker dedicated the biggest part of his life, is a synthesis of knowledge in mathematics, physics, astronomy, philosophy, ethics, economy, economics, and religion, which mankind has accumulated over thousands of years. M. Rudenko developed the science of Monads in it. The Monad Doctrine is the most complex, the most controversial in writer's intellectual legacy. The Monad is the basis of a unique alternative model of the Universe – from the electron and the Man to the World Monad, which is at the center of the Universe. And although Monadology is not a new science, because it was started by the ancient Gnostics, the founder is considered to be the German philosopher G. Leibniz (Leibniz, 1982), but only Ukrainian writer managed to impose the geocentric standards of modern physics on concepts that had long been attributed to metaphysics and to expand the science of Monads, confirming his philosophical searches with mathematical and physical calculations.

The hypothesis about the Monadic architecture of the Universe arose from the writer's desire to understand the fundamentals of Genesis: "The 20th century left rather strange idea of World Structure to posterity. Let's start with so-called isotropic nature of the Universe. It is about the fact that the Universe is the same in all directions <...> It is hard to believe in such a chaos at the very top of the Universe – where the Lord was supposed to live" (Rudenko, 2008, p. 496).

The scientific research begins with the chapter "Physical and Metaphysical", in which the author

combined physical and metaphysical as necessary and sufficient requirement for the search for fundamentals and philosophical considerations, from where humanity originates and what is the purpose of its development. In the same chapter, M. Rudenko explained how he understands the Matter, the Substance and gave his interpretation of fundamental categories that contradicted K. Marx. M. Rudenko insisted on the falsity of Marxist ideology in terms of dialectical materialism, and he considered the attempts of Marxist ideologues to reduce world's processes to simple physical and chemical reactions a gross mistake. The writer categorically rejected K. Marx's statement that human life and nature are continuous chemical processes, appealing to the works of Feuerbach, Lenin and others. M. Rudenko included in his hypothesis the ideas of ancient Greek philosophers, as he was deeply convinced that ancient scientists and their followers laid a solid foundation of the Knowledge, in which one can find answers to almost all philosophical questions.

The Quantum of Space, according to M. Rudenko, is the boundary of the transition between physics and metaphysics. So, the unit of measurement of material world was used by M. Rudenko for the analysis of the Matter and the transformation of elementary particles allowed the writer to interpret the Matter as the Material of the World, living flesh that is capable of creating the material world due to vibration and oscillation: "<...> light (not only a corpuscle) is a substantial process, but not the Substance itself! The Substance (that is, the Matter) is a spatial field (vacuum) that can only vibrate, oscillate" (Rudenko, 2008, p. 549). So, the material world is a reflection of ideas, images of the World Space, that is, the Matter. The researcher interpreted the Matter as it was understood by Bruno, Spinoza, and Feuerbach, but introduced a new characteristic of it – M. Rudenko spoke about the polarity of the Matter that builds up the Universe. The Monad creates energy spheres for life, and the Man is the image, idea and witness of the existence of the sphere: "<...> the sphere is not just an insensible geometry, but also the Subject. And although we are given to see only our own sphere, we, people, must believe Pythagoras, Dante, and Skovoroda: they knew" (Rudenko, 2008, p. 589). Working on his hypothesis, the researcher proved the dependence between the speed and location of galactic mergers, expanded the boundaries of the Universe to  $10^{49}$  cm, determined trajectory of the Milky Way Galaxy relative to the surface of the World Monad ( $10^{35}$  cm) and revealed the nature



of origin of quasars, confirming his opinion with mathematical calculations.

The search for structure of the Universe was laid out by M. Rudenko in the work "Gnosis and Modernity (Architecture of the Universe)", in poetry and prose.

The embodiment of writer's scientific research began to be clearly traced in his poems after 1963. Before that time the poet wrote texts in a socialist realist style. The first note of transition to a new worldview (different from the so-called creative method of socialist realism imposed by the state) is Poet's search for his purpose in the world: "Something will be <...> / Something must be. / Someone will not pass a difficult exam. / Someone is looking for desolation / for redemption, / And it is nowhere to be found. // Where to find the ends? / To eat and to drink <...> / And to give birth to children <...> / Even sparrows can do that" (1965) (Rudenko, 2004, p. 111) (*translation here and further is made by the authors of the article*). This theme was continued in many poems of this period: "And what is a person? / Who is related to a titan, a dwarf?" (1967) (Rudenko, 2004, p. 152); "And the chill scrapes behind the skin: / Who are we – only teenagers or sages? / Have you come to know that universal measure, / Where we are creations – not creators?" (1968) (Rudenko, 2004, p. 193). Therefore, the leading motive of the poetry of this period is the search for the meaning and purpose of human's life.

Gradually, M. Rudenko discovered the Universe for himself and shared the Knowledge with the reader. For instance, in poem "Aliens" (2002), he denies Darwin's theory of evolution and develops Skovoroda's ideas: "It is not our nature to die – / We are inscribed in the exchange movement. / Man is not a body, brother: / Man is soul and Spirit" (Rudenko, 2004, p. 615-616).

The Man, created by the Lord, is endowed with a divine part, in addition to a physical shell. This share imposes a huge responsibility on a person. Therefore, a person is responsible for the entire organic world on the planet, for life in the nearest Universe, which in turn is thought of anthropomorphically – as a living spiritualized organism: "It is as if this world has settled in a grain, / Its lifeblood is irradiated in your brain. / In the heart of the Galaxy, in blue horizon / You must grow bravely with your soul. // <...> And responsibility before the Universe / Will suddenly fall on your soul" (1973) (Rudenko, 2004, p. 317).

In poems from 1977 and texts of later period, we realize that poet urges the reader not to confuse the fundamental philosophical categories of "The Matter" and "The Substance": "I can easily imagine the other world: / There, worlds are woven from the rays. // And, perhaps, that is our great honour – / The cosmic goal, the worldly thirst! – / That rough and faceless materiality / It comes to life in our suffering" (1977) (Rudenko, 2004, p. 417). If the material world is a reflection of the ideas, images of the Matter, then everything that the person sees, feels, and he himself is a reflection of ideas of the Matter as the Subject: "So, believe me: we don't have a body – / There is only a soul and a condensed ray. And space is the Matter itself, / This is the magic of possibility and skill." (1981) (Rudenko, 2004, p. 538). It is impossible to see the Matter itself, one can only accept its existence and strive to unite with it: "So I flew somewhere. Flew idly / And felt that the Cosmos is life. / I was only a soul that wanted / To merge with the world essence" (2001) (Rudenko, 2004, p. 595).

The vocation of the Monad is to choose a space for the Light, where the Darkness will not have access. As a result of this struggle, the Life was born: "The eternal circle / Wise people have long understood: / Life is Light. / Darkness is death <...> / And so everywhere in the worlds, / Everywhere!.." (1972) (Rudenko, 2004, p. 285). The law of unity and struggle of opposites gives hope that the Light will never be overcome by the Darkness, and life in the Universe will last forever: "Life is not a dream, / But eternal action" (1973) (Rudenko, 2004, p. 305).

In the poems of relatively late period of M. Rudenko's creativity, the model of the world structure set forth in the work "Gnosis and Modernity (Architecture of the Universe)" is fully reflected: "<...> In the center He <...> / Who filled this carousel with the Spirit. / He reproduces himself in people. // For him, joy consists in / So that where there are the galaxies – everywhere / The same as Him, beings – just people – / Lived with the senses of Father's Home" (2002) (Rudenko, 2004, p. 627).

The poet presented his complex hypothesis of the structure of the Universe and place of the Man in it in poetic form in the widest way possible in "Metaphysical Poem", written in exile in Mordovia between May 28th and June 4th, 1978. The poet synthesized his ideas scattered in poems of various creative periods in it. The work consists of five small sections. In the first and fourth, respectively titled "Nirvana" and "Exit out of Nirvana", the poet resorts to introspection

to understand what caused his imprisonment. When the hero's consciousness was ready to open new, still unexplored horizons, he felt a union with the Universe: "Six fiery wings caught the soul / And carried it into the heavenly fullness" (Rudenko, 2008, p. 662). The lines of the poem closely echo the lines of poem "The Prisoner's Dream". The poet described the moment of the meeting with the Lord simply and casually: "It turns out, I with my astral body / Flew away outside the biosphere" (Rudenko, 2008, p. 672). To make it easier for the reader to perceive the scene of meeting and communication with the Creator, the poet departed from the traditional image of the Lord and personified Him in the image of ancient Greek thinker Pythagoras. In the third section of the poem entitled "The Monad", M. Rudenko laid out the core of his hypothesis about the structure of the world in the form of lyrical hero's dialogue with Pythagoras.

A characteristic feature of poem is the presentation of text essence in prose and poetic stanzas and introduction of formulas into the text:

1)  $F_{\text{mon}} = \frac{c^2}{G}$  (Rudenko, 2008, p. 675) (note that in the work "Gnosis and Modernity (Architecture of the Universe)" the researcher uses  $c^4$  in formula for determining force of The Monos (in poem "The Monad"); 2)  $F_{\text{mon}} \cdot R_{\text{mon}} = Mc^2$  (Rudenko,

2008, p. 677); 3)  $F = \frac{F_0 r_1 r_2}{R^2}$  (Rudenko, 2008,

p. 678); 4)  $P_{\odot} = \frac{GM_{\odot}^2 V_{\odot}}{R_{\odot} R_{\text{ca.}}}$  (Rudenko, 2008,

p. 679). The force of the Monad can be determined by the first formula; according to the second – the energy of the Monad is determined; the third is Newton's rewritten law of universal gravitation (the poet rejected masses and based his formula on forces and radii in it); the fourth formula reveals the views of M. Rudenko on the glow of the Sun. After learning how the Universe is arranged, the poet did not find an answer to only one question: "how to explain the Monad itself so that people could finally believe in it?" (Rudenko, 2008, p. 679).

So, we can draw an intermediate conclusion: the poet presented his alternative hypothesis of the Universe in his poems gradually – he presented his discoveries in a spiral way, so that it was easier for the reader to perceive and understand the author's ideas. On the other hand, the analysis of M. Rudenko's poems allows us to see how his model of the Universe was gradually built up.

M. Rudenko's prose also contains the presentation of his alternative searches – from minor details to whole novels dedicated to author's position highlighting. The first novel that partially contains the ideas set forth in the work "Gnosis and Modernity (Architecture of the Universe)" is the science fiction novel (according to the author – cosmological extravaganza) "Magic Boomerang". The plot of the novel is quite simple: the main character throws a magic boomerang and finds himself on the planet Phaeton, whose population has outpaced earthlings in their development (Rudenko, 1966). The introduction of interpolated episodes in the form of transcripts of meetings of cosmohistorical students group into the text gave the writer opportunity to include in the text of novel everything that aroused his keen interest at the time of writing the work: the age of human civilization, the probability of paleocontact, quotations from Plato, Solon, the myth of Phaethon, studies by J. Kepler, Titius, Bode, Olbers, V. Fesenkov, I. Putilin and other material about the Cosmos and the Earth available at the time of novel writing. In this novel, writer closely approached definition of the Monad – he introduced the concept of One Immaterial Substance, drew attention to the need to understand fundamental philosophical categories: "Materiality is that infinite depth that leads our cognition from the surface of an object to its Substance. And the Substance is not an electron or a particle. This is infinity, which leads our thought into its own depth" (Rudenko, 2002, p. 119).

The theme of reflections on the Material and the Substance, the nature of the Universe, was continued by M. Rudenko in the novel "Eagle Beam", for which the author was awarded the Shevchenko Prize. The novel has several storylines united around the artist Volodymyr Taran. The reader gets to know the main character at a turning point in artist's life, when he seriously thought about the meaning of human's life. In search of answers to eternal philosophical questions, Volodymyr studied the works of Pythagoras, Plato, Aristotle, gnostics, physiocrats, and "our Podolyns'kyi" (Rudenko, 2002, p. 188-189). He managed to create his own model of the world, which was different from the worldview of the Soviet man: "The Lord. Volodymyr did not reject this word, just as Spinoza and Skovoroda did not deny it. <...> And the Lord manifested himself most fully in man. <...> Spirit comes from within the Matter. The Matter <...> converts into an insect, a tree, a flower. And finally – becomes a man. The primacy of Matter does not prevent the Spirit

from being the Creator" (Rudenko, 2013, p. 55). The ending of the novel is quite predictable for an unengaged artist in a totalitarian society: "If you are a metaphysician, the Volodymyr prison awaits you" (Rudenko, 2008, p. 518).

Among the science fiction novels, M. Rudenko most fully set forth his alternative hypothesis of the world structure in the futuristic novel "The Ark of the Universe" (written in Jersey City in 1990, published in Ukraine by the publishing house "Rainbow" in 1995), aimed at children's audience. The writer sought to influence the restructuring of the worldview of younger generation – from subordinate (hierarchical) ideas to ideas about the polyphony of life, because humanity must make the transition from the strategy of subjugation to the strategy of partnership.

The writer brought the reader to the story about the Galactic Monad gradually – first he introduced the thoughts of academician Mirek Lyatoshynskyy, who chose economics and biology as his specialty. Mr. Mirek's thoughts are set out in second chapter of the work entitled "Insomnia". The academician was kept awake by the complex problems of human civilization, which humanity has made global today: the depletion of the Earth's resources, the introduction of the labour theory of value in understanding of K. Marx and A. Smith, the wrong understanding of capital, the creation of greenhouse effect, the collapse of states, migration processes.

Only after the exposition of main fundamental concepts, the writer introduced new heroes of the novel – academician Li Chun' and his student Prokip. During five hundred years of space travel, the academician chose his only student and taught the young man what he had discovered during his extremely long life. We can see that the writer constructed the plot line related to the presentation of his alternative hypothesis of the Universe in such a way that the reader acts as a student and an attentive listener, joining Li Chun's discoveries together with the inquisitive young man. It becomes known about the World Monad from the dialogues of these two researchers. Li Chun' gradually revealed a new understanding of the Universe to the student: "The highest form of life should be considered the World Monad. But it is beyond our reach. It can be only grasped with the mind. It is, if you like, the Lord-Father." (Rudenko, 1995, p. 61-62). Step by step, Li Chun' introduced young man to the main ideas set forth in work "Gnosis and Modernity (Architecture of the

Universe)": the absence of "black holes" in the centre of galaxies, a mistaken understanding of the Sun's glow cause, a false interpretation of the vacuum, an error in Einstein's theory of relativity, incorrectness of Schwarzschild's postulate about gravitational acceleration, etc. The novel repeats the basic provisions of the work almost verbatim. The writer even introduced three formulas from "Gnosis" into the text of the novel: the formula  $F_0=C^4/G$ , by which the force of Monos is determined (in the novel it appears under the name "the force of the Monad as a world constant" (Rudenko, 1995, p. 92), and formulas determining the physical qualities of the Monad (in the text of "Thinking Plasmas"):  $R_0=M_0G/C^2$  та  $E=F_0 \cdot R_0$ .

If in the novel "The Ark of the Universe" Myron Gryva appears as the author of an alternative hypothesis of the Universe, the discovery of which is remembered only by academician Li Chun', then in the novel "The Force of Monos" (1984-1985), he is given the role of the main character. The path of the novel "The Force of Monos" was not easy to get to the reader: in Miami, during the KGB search, the manuscript was confiscated along with other texts. As a sign of protest, the writer was forced to announce a hunger strike. Academician A. Sakharov informed the public about it, after 21 days of hunger strike and publicity, confiscated property was returned to M. Rudenko. In the memoirs "The Greatest Miracle is Life", the writer called his work a scientific novel (Rudenko, 2008, p. 674), and M. Kuryk called the novel "unusual" (Rudenko, 2008, p. 502). We are convinced: the reason for this assessment is the significant difference between the text of work and the array of texts of this genre.

The novel takes place at the beginning of the 60s of the 20th century – the time of so-called Khrushchev "thaw". The main character Myron Hryva is a promising scientist, candidate of philosophical sciences, the Head of the Department of the Institute of Philosophy, member of the party committee, married to the beautiful Myroslava Yakivna, who was invariably elected the Head of the District Capital Court. Myron's life was known in advance: the defence of his doctoral thesis, promotion and a cottage next door to the Master himself. In the process of working on his doctoral thesis on the topic "Philosophical problems of physical singularity", Myron discovered a new Knowledge that was radically different from what he presented in his doctoral research. The scientist faced a choice: to keep silent about his discovery and live on, or to make public the

results of his discovery and wait for the inevitable consequences (it was unacceptable for scientists of the USSR to have an opinion that differed from the official ideology).

While researching the singularity, Myron Hryva rejected the hypothesis of the emergence of life from random chemical compounds and theory of panspermia – this is how the Soviet scientist-atheist Hryva came to understanding that "before the epistemological subject had to appear (the subject of Knowledge – that is, a person), an ontological Subject had to exist inevitably – that is, the Subject of Creation. What we call this Subject (the Lord, the Nature, the Matter) is a secondary matter" (Rudenko, 2007, p. 175). Gradually, Myron realized that it was necessary to conduct a thorough study with mathematical and physical calculations, which would allow determining the physical constant, "which contains the causes of all causes, because precisely inside of it all the elements of Universal Being are concentrated without exception. This constant is the Force of Monos!.." (Rudenko, 2007, p. 181). Hryva calculated the force of Monos using the formula:  $E = F_0 \cdot R_0$ , where E is energy ( $Mc^2$ ),  $F_0$  is the force of Monos, and  $R_0$  is the radius of living flesh (Rudenko, 2007, p. 182-183).

In schematic form, the model of the Universe, in understanding of Myron Hryva, is reduced to the following: 1) dead flesh is space (the vacuum) as the Matter; 2) the living flesh of Monos is the central sphere of the heavenly body, which with its power is able to tear apart the flesh that is "out of Motion, out of Spirit, out of Being"; 3) the shadow of living flesh – the spheres of heavenly bodies and material objects visible to us, which are only a spatial and dynamic reflection of living flesh" (Rudenko, 2007, p. 185).

Hryva avoided forced treatment in a mental hospital (one of the most common methods of combating dissent in the USSR), bought a ticket to Barnaul and got a job as a ferryman on Katun. But he did not abandon his philosophical pursuits. In his free time he wrote notes in a thick notebook, on the title page of which was painstakingly written: "M. Hryva. About physical and metaphysical".

A detailed analysis of the novels "The Magic Boomerang" (Rudenko, 1966), "The Eagle Beam" (Rudenko, 2002), "The Ark of the Universe" (Rudenko, 1995), "The Force of Monos" (Rudenko, 2007) in order to study the presentation of author's model of the world structure in M. Rudenko's artistic texts allows us

to draw intermediate conclusions: the prose gave the writer more scope for the presentation of his alternative hypothesis of the structure of the Universe.

Starting from 1966, the writer includes the results of his searches in the plots of his novels, initially presenting them in small blocks from simple to complex. In novels aimed at children's audience ("The Ark of the Universe" (Rudenko, 1995) and "The Magic Boomerang" (Rudenko, 1966)), author's hypothesis of the Universe is presented in form of introducing the student to the world knowledge during learning process. When M. Rudenko already had considerable material for discussions and debates, he created the novel "The Force of Monos" (Rudenko, 2007), completely devoted to the elucidation of his hypothesis of the world structure, which affected the artistic value of novel (a simple plot, moreover, mathematical formulas and philosophical digressions significantly complicate text reading). Popularizing the results of his research in prose, the writer hoped: "<...> a living soul will be found for whom my feelings will be not only understandable, but also spiritually close" (Rudenko, 2008, p. 509).

## Conclusions

Popularizing the results of his research in poetry and prose, M. Rudenko sincerely believed that his works could find supporters who would not only accept his postulates, but also go further in search of truth. Since the ideas of the writer ran counter to the official ideology of the USSR (namely, his life and work fell on this period), they were hidden from general public for more than 30 years. Today in Ukraine there is an interest in literary and intellectual heritage of researcher, writer and public figure M. Rudenko. As a result, in some model programs of educational subjects/integrated courses of linguistic and literary field in 5th grade of general secondary educational establishments, according to the State Standard of Basic Secondary Education, in terms of implementation of the Concept of the "New Ukrainian School", the author's collectives included the works of M. Rudenko. And thus the works of unique Ukrainian writer gradually return to the reader.

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## Methodological principles of research in the field of ensuring evidence collection (on the example of cybercrimes): criminal-legal, criminal-procedural, and forensic aspects

Методологічні засади досліджень в сфері забезпечення збирання доказів (на прикладі кіберзлочинів): кримінально-правовий, кримінально-процесуальний та криміналістичний аспекти

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### Abstract

The complexity, multifacetedness, and interdisciplinary status of ensuring the collection of evidence leads to the need to study it in the coordinate system set by different levels of scientific methodology. With this in mind, we consider it necessary to analyze the current issues of study methodology in ensuring evidence collection on the basis of cybercrimes. The purpose of the work is studying the criminal-legal, criminal-procedural, and forensic aspects of the methodological foundations of research in securing evidence on the example of cybercrimes. The research methodology includes such methods as the general system-structural method, the dialectical method, the historical method, the system method, the comparative-legal method, logical methods (deduction, induction, analogy, analysis, synthesis), the structural-logical method, and the modeling method. As a conclusion of the conducted research, the regulatory and legal factors that constitute the legal basis of the organizational and technical principles of the investigation of crimes in the field

### Анотація

Складність, багатогранність і міждисциплінарний статус забезпечення збирання доказів приводить до необхідності її вивчення у системі координат, що задається різними рівнями методології науки. З огляду на це, вважаємо за необхідне проаналізувати актуальні питання методології досліджень у сфері забезпечення збирання доказів на базі кіберзлочинів. Метою роботи є дослідження кримінально-правового, кримінально-процесуального та криміналістичного аспектів методологічних засад досліджень в сфері забезпечення доказів на прикладі кіберзлочинів. Методологією дослідження є такі методи як загальний системно-структурний метод, діалектичний метод, історичний метод, системний метод, порівняльно-правовий метод, логічні методи (дедукція, індукція, аналогія, аналіз, синтез), структурно-логічний метод та метод моделювання. Як висновок проведеного

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of cybercrime were considered, and the problematic issues of the research methodology were identified. It was concluded that the methodological support of the research of evidence collection is a complex, multifaceted task of scientific research, it can be solved only on the basis of a systematic approach to this problem.

**Keywords:** methodological principles, provision of evidence collection, criminal-legal aspect of research, criminal-procedural aspect of research, forensic aspect of research.

## Introduction

In conditions of the rapid growth of scientific and scientific-technical information, rapid changes, and updating of the system of scientific knowledge, there is a need for qualitatively new approaches to the theoretical understanding of science-intensive technologies and adaptation to the conditions of market relations.

Knowledge of methodology, theory, technique, methods, and organization of scientific research activity helps to get involved in professional activities, to translate scientific knowledge into a practical plane, and promotes the development of rational and creative thinking.

Currently, criminal law science faces a number of challenges due to both new types of crimes and the lack of a developed research methodology.

New challenges caused by the spread of the fields of application of special knowledge during the detection and investigation of crimes in the field of computer information and high technologies generate new risks associated with the possibility of cross-border circulation of information, which is increasingly used with criminal geopolitical, military-political, terrorist, with an extremist and other illegal purpose to the detriment of international security and strategic stability. An equally significant role was played by the expansion of the use of information and psychological influence technologies by the special services of individual states to destabilize the domestic political and social situation in certain regions, which threatens the sovereignty and territorial integrity of states. Strengthening the influence of terrorist and extremist organizations, which in their practices actively

дослідження розглянуто нормативно-правові чинники, які становлять правову основу організаційно-технічних принципів дослідження злочинів у сфері кіберзлочинності, ідентифіковано проблематичні питання методології досліджень. Зроблено висновок, що методологічне забезпечення дослідження збирання доказів - складне, багатоаспектне завдання наукового пошуку, його можна розв'язати лише на засадах системного підходу до цієї проблем.

**Ключові слова:** методологічні засади, забезпечення збирання доказів, кримінально-правовий аспект дослідження, кримінально-процесуальний аспект дослідження, криміналістичний аспект дослідження.

use mechanisms of informational influence on individual and public consciousness, actively recruit supporters and sympathizers through social networks to incite hatred on religious, racial, and ethnic grounds. The emergence of new and improvement of existing computer crimes, especially in the economic and financial sphere. An increase in the number of computer attacks on critical infrastructure and air transport. The lack of scientific research aimed at creating promising high technologies, the low level of introduction of domestic developments in the field of information security (Filipenko, Snigerev & Bublikov, 2020)

Therefore, we consider it necessary to analyze the criminal-legal, criminal-procedural, and forensic aspects of the methodological foundations of research in the field of ensuring the collection of evidence on the example of cybercrimes.

To achieve this goal, the following tasks have been set:

- determine the legal nature of cybercrimes;
- to investigate the methodological foundations of research in the field of ensuring the collection of evidence;
- to characterize the research methods in the field of ensuring the collection of evidence on the example of cybercrimes;
- to reveal and specify the experience of international legal provision of research on gathering evidence on the example of cybercrimes. and;
- to find out the specifics and trends in the development of the methodology of

criminal-legal, criminal-procedural, and forensic research in modern conditions.

The object of the study is the research methodology for ensuring the collection of evidence on the example of cybercrimes through the prism of criminal, criminal procedural, and forensic science. The subject of research is social relations that arise, change, and cease during the application of various research methods in the field of evidence collection.

### **Theoretical Framework or Literature Review**

Forensic tactics and methods of investigation of certain types of crimes are considered in the book of Bilenchuk (2007). The work examines the latest trends in scientific research in the field of forensic strategy, tactics, and prevention, the art of investigative activity, diagnosis, research, and prediction of human behavior during pre-trial investigation, the use of social and communication technologies, methods and means of information security and methods of investigation of certain types of crimes. The authors proposed modern forensic methods, taking into account the peculiarities of the investigation of crimes in the field of high technologies and violations of the rules for handling radioactive materials, combating the laundering of financial resources, as well as transnational, economic crimes, crimes of terrorist orientation.

Moreover, Bogomaz (2019) considered methodological guidelines for the study of social communications in the conditions of the information society.

Further, Dobronravova, Rudenko, and Sydorenko (2018) considered the role of science and scientific research in the modern world and the issue of the technology of conducting scientific research by students and young scientists. The problems related to the methodology and organization of scientific research activity are described in detail: definition of the object and subject, research methodology and methods, ways of collecting information, and processing the results of scientific research.

Features of cyberspace as a new dimension of geopolitical rivalry were analyzed by Dubov (2014).

The object of Kovalchuk's (2017) research is the methodology of study about the material evidence in criminal proceedings. As a result of

the conducted research, the author concluded that the methodology of study about the material evidence as an independent criminal procedural branch is a complex dynamic system. As a complex system, the methodology of the study of material evidence not only includes various approaches, principles, methods, and techniques of scientific knowledge and the methodology of their use but also has inherent integrative laws that determine the relationship and interaction of its structural elements in the process of scientific research. As a dynamic system, the methodology of the study about material evidence, being in a constant search for new approaches, principles, methods, and techniques of scientific knowledge and the development of methods of their use, is being improved and diversified.

Also, Moroz and Kobzar (2016) analyzed the specifics of the use in criminal proceedings of information obtained by confidants and full-time undercover employees during criminal intelligence.

Besides, Panasyuk (2019) considered cyber security as a law-making factor. In turn, Oleksyuk (2020) prepared a detailed report on cyber security management using the example of Ukraine and foreign countries.

What is more, Rabinovych's (2014) study is devoted to the methodology of the domestic general theory of the rule of law. In particular, the article examines and critically analyzes the main trends in the transformation of methodological approaches and research methods of legal and state phenomena in domestic general theoretical jurisprudence and identifies the factors that deeply determine the relevant transformations of the mentioned methodology.

Ryzhiy (2021) analyzed the philosophical and methodological principles of the study of the assessment of testimony of participants in criminal proceedings in the court of first instance. The author concluded that the research methodology for evaluating the testimony of participants in criminal proceedings in the court of first instance is a complex combination of philosophical and general scientific methods (dialectical method of cognition, induction and deduction, analysis and synthesis, abstraction, observation) aimed at revealing the specifics of the specified activity. It is important to use historical-legal, systemic-structural, formal-dogmatic, comparative-legal, hermeneutic, synergistic, sociological, and prognostic methods. The specifics of the researched subject, as well as the set of cognitive tasks that are

diverse in their content and nature, make it necessary to use the entire complex of the above-mentioned methods, which enrich each other, and in their totality give a holistic perception of the assessment of the testimony of the participants in the criminal proceedings in the court of first instance, contribute to ensuring the validity of the conclusions obtained and recommendations.

Additionally, Rudyk, Senyk, Rudyk, and Senyk (2018) studied in detail the organizational, legal, forensic, and technical aspects of countering cybercrime in Ukraine. Moreover, Savchenko (2012) considered the question of the qualification of cybercrimes.

The detection and investigation of cybercrimes are analyzed in the work of Samoilenko (2020). In particular, the author's work includes the theoretical and methodological provisions of the investigation of cybercrimes and forensic tactics and methods of investigating cybercrimes of certain types, developed on the basis of general theoretical provisions of criminology.

Filipenko, Snigerev, and Bublikov (2020) investigated the application of special knowledge during the detection, prevention, and investigation of crimes in the field of computer information and high technologies. In order to increase the effectiveness of combating computer crime, in parallel with the development of methodological support for expert research and the improvement of the qualifications of forensic experts, in particular, their acquisition of the latest special knowledge, it is necessary to regularly hold international meetings of representatives of forensic expert institutions, law enforcement bodies, specialists, knowledgeable persons. Further, Fors (2016) also considered the legal regulation of combating cybercrime.

Chornous (2012) analyzed the theory and practice of forensic support for pre-trial investigation in cases of crimes of an international nature. The theoretical and methodological model of criminology and its new directions are studied in the work of Shepitko (2021). Shulgin (2019) drew attention in his work to the sufficiency of evidence as a basis for making procedural decisions by investigators and prosecutors. Tropina (2012) researched the issue of cyber security and the specifics of its provision.

Marín González, and García Sánchez (2015) researched the problems facing digital proof in

the United States of America. Cardona, and López, (2014) studied the documentary evidence in the accusatory criminal system, compilation and presentation at trial. In their research Más, & Rosado (2011) analyzed the technical and scientific process to collect and analyze digital evidence from computer or electronic devices in order to present them at Court. Buñay Guisñan, Mazón Fierro, Narváez Vilema, and Paguay Soxo (2021) researched different issues of use of the web system for the collection of evidence generated by university professors.

### Methodology

The scientific research is based on the application of the general system-structural method, the main elements of which ensured a high effect of building models for solving the given problems. Thus, the methodological foundations of research in the field of ensuring evidence collection on the example of cybercrimes were investigated comprehensively, taking into account their features and functional purpose.

Also, the basis of the methodology system of scientific analysis of the genesis and development trends and the mechanism of legal regulation of evidence collection in the investigation of cybercrimes from the point of view of criminal law, criminal procedural and forensic aspects are such methods as: dialectical method - made it possible to explore the inner essence of things in the process of their development, as well as internal and external contradictions, in particular, with the help of this method, the genesis of the development and improvement of the methodological foundations of the research of evidence collection was analyzed; the historical method - contributed to the understanding of the genesis of the legal regulation of the fight against cybercrime and its proof; systematic method - made it possible to carry out a complete and objective study of the corresponding specifically outlined subject, in particular, it made it possible to investigate the peculiarities of the methodological foundations of research in the field of ensuring the collection of evidence on the example of cybercrimes, as well as to clarify the specifics of international and national experience in this topic; comparative legal method – used to analyze the peculiarities of methodological foundations in foreign countries.

During the research, logical methods and techniques were used - deduction, induction, analogy, analysis, and synthesis. Thus, their use is traced throughout the events of all scientific

analysis. The method of analysis made it possible to analyze the researched object in detail. With the help of synthesis, the acquired knowledge was combined into a whole. The use of the method of analogy, the essence of which is that certain properties and features are transferred from one subject of research to another, and in the same way the relations and connections between one and another set of subjects are transferred, helped to understand the methodological principles of research in the field of ensuring the collection of evidence from the point of view of criminal law, criminal procedural and forensic aspect. The use of induction and deduction are interrelated in this study: deduction helped to draw conclusions from theoretical ideas, laws, and principles, as it is related to the construction of an idealized object, and induction made it possible to generalize empirical regularities.

The use of the structural-logical method and modeling made it possible to highlight the perspectives and trends in the development of methodological foundations of research in the field of ensuring the collection of evidence in the investigation of cybercrimes.

## Results and Discussion

The research objectives are to determine the role of the methodology in ensuring the collection of evidence; to find out what factors influence the development of the methodology, its state, and dynamics; to establish the features of the research methodology for ensuring the collection of evidence in the investigation of cybercrimes.

**Table 1.**

*Characteristics of the criminal-legal, criminal-procedural, and forensic aspects of the phenomenon under study.*

| <b>Criminal law</b>  | <b>Criminal procedural</b>  | <b>Forensic</b>   |
|--|---|---|
| It is designed to ensure the correct qualification of the act committed by the suspect and to create the necessary prerequisites for the individualization of criminal responsibility. | Presupposes the use of appropriate means of proof in the proper procedural order. | It involves the study of the identity of the criminal and the circumstances of his commission of the crime. |

Data provided by National Institute of Strategic Studies (2022).

Therefore, conducting a study of the methodological foundations of the study of ensuring the collection of evidence on the example of cybercrimes through the prism of the specified aspects aims to conduct a comprehensive study (Raconteur, 2019).

In general, it is difficult to overestimate the importance of methodology, since no science can

A specific toolkit is necessary for the study of any object of scientific knowledge. Such a toolkit is the research methodology. The development of methodological issues is primarily aimed at practical goals: to arm the researcher with means that ensure the most efficient and rapid achievement of the scientific result. Therefore, the correctly chosen research methodology depends not only on determining the main directions of scientific research but also on obtaining reliable scientific knowledge about the object of knowledge.

In historical retrospect, many studies have been devoted to the concept of methodology. Thus, for a long time, the methodology was considered a structured system of approaches, principles, and methods of scientific knowledge. Later on, there was an expansion of the understanding of the methodology due to its coverage of not only the system of means of scientific knowledge but also the study about their use for the knowledge of this or that object of knowledge. In this regard, at the current stage of the development of science, the methodology should be understood as an integration phenomenon, which is both a system of interrelated elements of scientific knowledge (approaches, principles, methods, and techniques) and the study of their use (Rabinovych, 2014).

But before analyzing the methodological foundations of research on ensuring the collection of evidence on the example of cybercrimes, let's consider the essence of the criminal-legal, criminal-procedural, and forensic aspects of the investigation of the phenomenon under investigation (Table 1).

exist without it, including the science of criminal law, criminal procedural law, and criminology.

We believe that in order for science to move from commenting on the Criminal Procedure Code of Ukraine (Law No. 4651-17, 2012) and the Criminal Code of Ukraine (Law No. 2341-14, 2001) to the development of science itself, it is necessary to develop the following components:

- 1) philosophy of branch science;
- 2) theory;
- 3) methodology;
- 4) history;
- 5) comparative studies.

The general trend in the development of the methodology of modern general theoretical jurisprudence led to an active transition at the current stage of the development of the theory of criminal procedural evidence from monism to pluralism of its methodology.

The doctrine of proof as an independent criminal procedural doctrine has its own methodology, which allows for scientific knowledge of the set of elements covered by its subject. At the same time, the specifics of ensuring the collection of evidence on the example of cybercrimes are determined by its specifics.

The methodological principles of research in the field of evidence collection are a system of interconnected approaches, principles, methods, and techniques of empirical and theoretical knowledge of reality, which are aimed at systematizing of existing and obtaining new knowledge covered by the subject of this study, and a system of scientific provisions on their use to solve the tasks set before him (Ryzhiy, 2021).

Thus, when studying such an element of the evidence process as evidence collection, attention should be focused on the need to use methods and techniques of information collection, to process it in its totality and in all its multifacetedness, complexity, and contradictions, based on a set of positive and negative moments, identifying trends and patterns of such activity in criminal proceedings at the stage of trial (Samoilenko, 2020).

For example, the process of defining concepts cannot take place without the application of the technique of abstraction, therefore, this technique must be used in order to learn the specifics of evidence collection when de-icing cybercrimes, it is important to abstract from other elements of the evidence process, to concentrate your attention on collecting information about the crime. At the same time, the process of abstraction is inextricably linked with such research methods as analysis and synthesis, which form the basis of the formal-logical approach, the unity of opposites and, accordingly, are used to divide the subject of research into constituent parts and combine individual parts of the subject into a single whole. The formulation of conclusions and concepts, the

identification of criteria for evaluating the testimony of participants in criminal proceedings, the definition of the content of the judge's activity and the limits of his activity during the trial, the clarification of the peculiarities of the use of the testimony of the witness, the victim, the accused, written and material evidence – all this helps to clarify the specified methods.

It is worth pointing out the importance of using general scientific methods, which are general methods and ways of researching processes and phenomena and determining the trends of their changes, which are used in various fields of scientific knowledge. In particular, the application of deductive and inductive methods consists of the use of general scientific provisions of systems theory. Emphasis should be placed on the importance of applying systemic analysis, which makes it possible to determine the essence of testimony as a source of evidence in the criminal process, to analyze the relevant powers of the participants in the criminal proceedings, to investigate the relationships arising in connection with this.

An active approach makes it possible to conduct a versatile analysis of the structure of the phenomenon in dynamics. The use of this method when clarifying the specifics of evidence collection can be extremely effective because an important component of the subject of research in the science of the criminal process is the clarification of the powers of the court to collect evidence in criminal proceedings. The method of analogy, when, on the basis of the similarity of objects in some features, a conclusion is drawn about their similarity in other features, is useful when studying the peculiarities of the implementation of procedural powers to collect evidence in the Anglo-Saxon and Romano-Germanic legal systems.

The basis of the system-structural method is the study of a certain object as a complete system that has an internal structure and is divided into constituent elements. The task of the researcher is to determine their number, order of organization, connections, and interaction between them. Only after that can you get to know the relevant object comprehensively and perfectly. With the help of the system-structural method, it is possible to reveal the system of interconnection of the subjects of criminal proceedings during the evidence collection. In addition, the application of the specified method allows for the identification of gaps and contradictions in normative legal acts and to

formulate proposals for improving the current legislation.

With the help of the formal-dogmatic method, which reflects the content of the researched object in the form of a rational construction, it is possible to clarify the conceptual apparatus during the analysis of the current legislation on the procedure for collecting two pieces of evidence, as well as the practice of applying the provisions of the Criminal Procedure Code.

Implementation of effective legal reforms is impossible based only on national experience or simply familiarization with the legislation of certain countries, it requires systematized scientific knowledge of global and regional trends in legal development, which is accumulated primarily by comparative jurisprudence. The prognostic method makes it possible to determine, first of all, the identification of the main directions of the development of domestic legislation regarding the activity of the court on the assessment of testimony during the trial, guaranteeing the rights of participants in criminal proceedings, the peculiarities of their formation based on world experience, it makes it possible to predict the likely consequences of changes to the criminal procedural legislation in terms of collection, verification, and evaluation of evidence, in particular the testimony of the accused, the victim, witnesses.

Therefore, taking into account the multifacetedness of even the considered methods and approaches, we can state that modern criminal procedural, criminal law and forensic science are based on a systematically updated methodology, which, among other things, is aimed at theoretically solving the problems of everyday practice.

In general, in the structure of the research methodology in the field of ensuring the collection of evidence in the investigation of cybercrimes, it is advisable to highlight the following specific scientific methods:

1) the formal-legal method, which is often defined by scientists as a dogmatic or legal-technical method, allows to determine the formal content of the norms of the criminal procedural law, which define the concept of evidence and regulate the order of their formation and use, terms, order and conditions of storage of physical evidence and methods and the procedure for deciding their fate during criminal proceedings,

contributes to the disclosure of a crime in the field of cyber security and contributes to obtaining proper, admissible, sufficient and reliable evidence;

- 2) the comparative legal method involves the implementation of diachronic and synchronous structuring: a diachronic comparison allows you to compare evidence as a legal phenomenon that existed in the domestic criminal process, law, and criminology during different historical periods, and to identify patterns of development of this legal phenomenon, while a synchronous comparison involves comparing collection of evidence as a legal phenomenon that exists in various legal systems during a specific historical period, and to determine the expediency of taking into account the foreign experience of the normative definition of the concept of evidence and the order of their formation and use in criminal proceedings and the doctrinal approaches and practices formed in foreign countries on these issues;
- 3) the sociological-legal method involves the use of such tools as the analysis of statistical data and various legal documents, a socio-legal experiment, surveys, interviews on legal issues, and allows to establish the effectiveness of the normative definition of evidence collection in criminal proceedings, to identify the shortcomings of investigative and judicial practices regarding the formation and use of material evidence in criminal proceedings, including taking into account the legal standards of criminal procedural evidence formed in the practice of the ECtHR;
- 4) the method of theoretical and legal modeling allows you to substantiate the conceptual model of the doctrine of evidence collection and to determine its object, subject, purpose, tasks, functions, and system;
- 5) the method of theoretical and legal forecasting allows for determining the prospects for the development of domestic criminal procedural legislation in the part of defining the concept of evidence collection, terms, order, and conditions of storage of material evidence, and methods and procedure for deciding their fate during criminal proceedings (Kovalchuk, 2017).

Each of the above general scientific and specific scientific methods has its own cognitive capabilities in revealing the collection of evidence as an object of scientific knowledge, determined by the scope of their use, features of displaying the obtained scientific results, and

their evaluation. At the same time, all of the above methods are closely related and should be applied in combination (simultaneously or in stages) in order to comprehensively understand the collection of evidence as a legal phenomenon, especially in relation to the investigation of cybercrimes.

## Conclusions

As a result of the research, the following conclusions were made:

- 1) When solving any scientific problem, the issue of methodological support is necessary and of primary importance for theoretical understanding in any subject area, and the methodology contributes to the search for optimal ways of learning the phenomena and processes that are the subject of study, their adequate reflection in the system of scientific knowledge.
- 2) From the above, a number of factors influence the development of the methodology, its state, and dynamics, including:
  - the needs of investigative and judicial practice regarding the collection of evidence to prove the commission of cybercrimes are put before the doctrine of the criminal process;
  - conditioned by the needs of law enforcement practice, changes in the object and subject of both the theory of criminal procedural evidence and the doctrine of material evidence in the criminal process;
  - development of the science of criminal, criminal procedural law, and criminology, the developments of which can be used to improve their methodological arsenal.

These factors determine the use of not only well-established but also the newest approaches, principles, methods, and techniques of knowledge used in modern science in the collection of evidence in the investigation of cybercrimes.

- 3) The research methodology for ensuring the collection of evidence in the investigation of cybercrimes is a complex combination of philosophical and general scientific methods (dialectical method of cognition, induction and deduction, analysis and synthesis, abstraction, and observation) aimed at revealing the specifics of the specified activity. The specificity of the researched subject, as well as the set of cognitive tasks

that are diverse in their content and nature, make it necessary to use the entire complex of the above-mentioned methods, which enrich each other and contribute to ensuring the validity of the conclusions and recommendations obtained.

Therefore, the goal and task of the conducted research has been fully achieved.

Regarding further scientific research, we consider it necessary to investigate the actual issues of the research methodology of evidence collection.

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## Current issues of the application of ECtHR decisions and its implementation in the field of children's rights protection

### Актуальні питання застосування практики рішень ЄСПЛ та їх виконання в сфері захисту прав дитини

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#### Abstract

The main jurisdictional body in the field of human rights protection is the European Court of Human Rights (ECtHR). The activities of the ECtHR, among other things, are of key importance for ensuring the effective functioning and continuous improvement of the international system for the protection of children's rights. Thus, the study of the ECtHR's practice in the field of protection of children's rights is relevant in view of the importance of applying appropriate approaches to resolving disputes at the national level, as well as from the point of view of improving national and international legislation in the field of protection of children's rights. Therefore, the purpose of the work is the analysis of the practice of the ECtHR in the field of the protection of children's rights, as well as the study of the peculiarities of the implementation of relevant decisions of the ECtHR at the national level. Research methods used in writing the article include analysis, synthesis, formal-logical and comparative-legal methods. As a result of the research, the authors of the article analyzed the specific decisions of the ECtHR in the field of protection of children's rights, summarized the main approaches, standards, and principles used by the ECtHR in solving relevant cases, as well as making

#### Анотація

Головним юрисдикційним органом у сфері захисту прав людини є Європейський суд з прав людини (ЄСПЛ). Діяльність ЄСПЛ, серед іншого, має ключове значення для забезпечення ефективного функціонування та постійного удосконалення міжнародної системи захисту прав дітей. Таким чином дослідження практики ЄСПЛ у сфері захисту прав дітей є актуальним з огляду на важливість застосування відповідних підходів до вирішення спорів на національному рівні, а також з точки зору удосконалення національного і міжнародного законодавства у сфері захисту прав дитини. Отже, метою роботи є аналіз практики ЄСПЛ у сфері захисту прав дитини, а також дослідження особливостей виконання відповідних рішень ЄСПЛ на національному рівні. Методи дослідження, що були використані при написанні статті, включають аналіз, синтез, формально-логічний і порівняльно-правовий метод. У результаті проведеного дослідження автори статті проаналізували конкретні рішення ЄСПЛ у сфері захисту прав дітей, узагальнили головні підходи, стандарти і

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their own proposals for improving the current legislation of Ukraine aimed at protecting children's rights.

**Keywords:** human rights, protection of children's rights, law enforcement, court decision, international legislation.

## Introduction

According to Art. 1 of the Council of Europe Strategy for the Rights of the Child 2022-2027: «Child Rights in Practice: From Sustainable Implementation to Shared Innovation» (Council of Europe Portal, 2022) child rights protection is a key element of the Council of Europe's mission to protect human rights, sustain democracy and preserve the rule of law. The Council of Europe takes care of the defense of the rights of the child in its member states with the help of multi-year strategies implemented by setting standards, monitoring compliance with regulatory requirements, and supporting implementation in the form of cooperation projects. In the member states of the Council of Europe, children have the right to enjoy all human rights protected by the European Convention on Human Rights (ECHR) (Council of Europe, 1950), the United Nations Convention on the Rights of the Child (UNCRC) (United Nations, 1989), and other international and European normative documents on human rights. Such rights include civil, political, economic, social, and cultural rights.

According to Art. 32 of the Convention on the Protection of Human Rights and Fundamental Freedoms (ECHR) The European Court of Human Rights is a jurisdictional body in the field of human rights protection (Article 32 of the ECHR).

When examining the validity of interference with human rights, the European Court of Human Rights (hereinafter referred to as the ECtHR) pays special attention to the protection of children's rights. The ECtHR has repeatedly drawn attention to the fact that there is a broad consensus – including in international law – in support of the idea that in all decisions concerning children, their interests should be paramount.

Therefore, the proper protection of children's rights on the European continent and in the world, in general, is of key importance for the normal functioning and development of modern society. The ECtHR itself plays a leading role in

принципи, які використовує ЄСПЛ при вирішенні відповідних справ, а також зробили власні пропозиції з удосконалення чинного законодавства України, спрямованого на захист прав дітей.

**Ключові слова:** права людини, захист прав дітей, правозастосування, судові рішення, міжнародне законодавство.

the aspect of restoration and protection of violated children's rights. Qualified decisions of the ECtHR make it possible to resolve individual disputes arising from the protection of children's rights in countries participating in the Convention, as well as to harmonize the legislation of participating countries and other countries of the world with modern approaches to the protection of children's rights.

Based on the above, it is possible to formulate the main tasks of this study.

1. To analyze the practice of the ECtHR in the field of protection of children's rights and make generalizations about the main approaches, standards, and principles of solving relevant cases.
2. Development of general recommendations on improving the current legislation of Ukraine in the field of protection of children's rights, taking into account the practice of the ECtHR in resolving specific disputes.
3. Analysis of the peculiarities of the implementation of ECtHR decisions in the field of protection of children's rights in different countries in order to ensure the fastest and most complete restoration of violated children's rights at the national level.

## Theoretical Framework or Literature Review

Liliya Radchenko (2019) in her article «Modernization of the Protection of Human Rights in the Field of family relations through the Prism of the Practice of the ECtHR» examines the category «best interests of the child». In general, her article is devoted to the consideration of the comparative legal principles of the protection of human rights in the field of family relations through the prism of researching the practice of the European Court of Human Rights (ECtHR). Among other things, the author emphasizes that the category "best interests of the child" is a basic principle in the field of

protection of the rights of the child as relevant to ECtHR decision-making. The determination of what is in the best interests of the child is fundamental and determined on a case-by-case basis. Depending on their nature and seriousness, the interests of the child may outweigh the interests of the parents.

Moreover, Taisia Tomlyak (2022) in her article "The principle of ensuring the best interests of the child in the practice of the European Court of Human Rights concludes that in the European legal tradition, the principle of ensuring the best interests of the child is widely applied in cases involving children... The European Court connects ensuring the best interests of the child with the observance by national judicial bodies of a fair balance that must be achieved between the relevant competing interests: the interests of the child, two parents, and public order, with the priority of the best interests of the child.

Besides, Louise Forde (2022) in her article "The Role of the Courts in protecting children's Rights in the Context of police questioning in Ireland and New Zealand » explores the role the courts have played in upholding children's rights in the police questioning process in Ireland and in New Zealand. The author claims that ensuring safeguards are in place from the earliest stages of criminal investigation is essential to ensure that children's rights in the youth justice system are adequately protected. The rights of children in conflict with the law are protected under the UN Convention on the Rights of the Child (UNCRC), and in situations where these rights are violated, children must have access to an effective remedy. National courts have a role to play in ensuring that children's rights are protected and in providing necessary remedies.

Additionally, Deborah Lawson, Helen Stalford, and Sarah Woodhouse (2023) made a report, which examines the nature, scope, and effects of Third-Party Interventions (TPIs) in advancing children's rights in cases that come before the European Court of Human Rights (ECtHR or 'Court'). It presents the findings of a review of existing European Convention on Human Rights (ECHR) decisions (by the Chamber and Grand Chamber) concerning children.

Also, Vibeke Blaker Strand (2019) in her article «Interpreting the ECHR in its Normative Environment: Interaction Between the ECHR, the UN Convention on the Elimination of All Forms of Discrimination Against Women and the UN Convention on the Rights of the Child» offers insight into a selection of ECHR cases that

are characterized by the existence of a normative overlap between the ECHR, the CEDAW, and the CRC; and by the fact that interaction between these legal sources actually takes place in the interpretation carried out by the Court. Interaction is discussed through two topics: the issue of state obligations in relation to domestic violence, and the issue of state obligations in relation to expulsion of immigrants with children. The article demonstrates that systemic integration may result in a strengthening of the protection of human rights under the ECHR through what is termed 'interpretive widening and thickening.

The article of Mariëlle R. Bruning & Jaap E. Doek (2021) called «Characteristics of an Effective Child Protection System in the European and International Contexts» aims to explicate core elements of an effective child protection system within a child's rights framework. This aim is accomplished by highlighting and providing analysis of the principles set forth in the CRC and further elaborated in General Comment No. 13 (2011) and by the UN Children's Fund (UNICEF), the main components of policies and other relevant documents of the European Union (EU) and the Council of Europe (CoE), and caselaw from the European Court of Human Rights (ECtHR) and then presenting recommendations for an effective State-run child protection system.

Trond Helland & Ragnhild Hollekim (2023) in their article «The Convention on the Rights of the Child's Imprint on Judgments from the European Court of Human Rights: A Negligible Footprint? » aim to examine the CRC's footing in the ECtHR. Leaning on concepts of legal mobilization, lawfare, and availability heuristics, the authors argue that there has been a clear development in how the CRC is used in and by the ECtHR, indicating that the CRC has an increasingly stronger footing within the Court, especially in the past decade. Additionally, they argue that this development has strengthened children's rights and that the CRC, at least indirectly, has had and still has a vital role in developing children's rights within the ECtHR. Prof. K. Sandberg (2021) in his article «Grandparents' and grandchildren's right to contact under the European Convention on Human Rights» claims that there may be such a right, but it depends entirely on the circumstances. A family life exists between grandparents and grandchildren if there are sufficiently close ties between them. However, the relationship between grandparents and grandchildren is seen as different in nature and

degree from that of parents and children and calls for a lesser degree of protection.

Tina Gerdts-Andresen & Heidi Aarum Hansen (2021) in their article «How the child's views is weighted in care order proceedings» address how the Norwegian County Social Welfare Board weights the child's view when regulating visitation rights between parents and children, when a care order is issued. Overall findings argue that the child's view is generally not given weight in the written decisions. As the care orders are presented in this study, findings suggest that the Board's practice may be in contradiction to children's conventional rights, and by this also in contradiction to the Norwegian law.

Valeska Marcela David Contreras (2017) in their research «Caring, rescuing or punishing? Rewriting *RMS v Spain* (ECtHR) from an integrated approach to the rights of women and children in poverty» analyses and rewrites the ECHR judgment in *RMS* by integrating the perspective of the rights of women and children living in poverty. First, the chapter problematizes the allocation of children's care and well-being to the 'private' realm of families, and questions the way the Court addressed the impermissibility of family separation on the ground of poverty. Second, attention is drawn to compounded stereotypes and dominant notions on valued families underlying the decisions of the Spanish authorities and which the ECHR failed to uncover. Third, the chapter revisits the ECHR scrutiny of the domestic judicial control and decision-making process over the girl's removal and placement.

Paula Távora Vítor (2023) in her article «Banning Children's Image Online – a Portuguese Perspective» points towards a more active intervention by public entities (courts and public prosecutors offices) when the protection of children (and the promotion of their autonomy) is at stake. Fundamental rights – and (fundamental) personality rights included – were first conceived as a shield of individuals against the state. At the present, it seems that the state is using this shield to protect individuals against other individuals within one of their most private spheres – family – based on the recognition that these are especially valuable and especially vulnerable individuals. Hence, there is tension between public and private, and protection and autonomy, that must be addressed.

Therefore, as a result of the review of the works of modern researchers, it is worth concluding that

the system of protection of children's rights is quite effective, however, with the help of the practice of the ECtHR, the specified system is constantly being improved. This is explained by trends in the development of modern European civilization, based on the principles of humanism, as well as defects in the legislation and law enforcement activities of individual European countries, which must be eliminated.

### Methodology

With the help of a set of methods that were used to carry out this research, the authors of the article achieved the research objectives. In particular, the methods of analysis and synthesis, as two complementary methods of knowing the objective reality, helped to analyze the practice of the ECtHR in the field of protection of children's rights and to make generalizations about the main approaches, standards, and principles of solving relevant cases. In addition, the specified methods allowed the authors of the article to investigate the peculiarities of the implementation of ECtHR decisions in the field of protection of children's rights in different countries in order to ensure the fastest and most complete restoration of violated children's rights at the national level. In turn, the comparative legal method helped to formulate general recommendations for improving the current legislation of Ukraine in the field of protection of children's rights, taking into account the practice of the ECtHR in resolving specific disputes.

### Results and Discussion

The ECtHR examines all issues regarding the interpretation and application of the Convention and its protocols, as well as examines individual disputes related to human rights violations. Any person who believes that his rights have been violated and the opportunity to restore them at the national level has been exhausted can submit an individual complaint directly to the ECHR. In order to file an individual complaint about the violation of human rights and freedoms, the consent of the state is not required, and the ECtHR itself is not bound by the decisions of national courts. The ECtHR ascertains whether a person's right has been violated from the point of view of higher standards than national ones. At the same time, decisions of the ECtHR regarding individual disputes are binding for the ECtHR member state, and in case of non-compliance certain sanctions may be applied by the Committee of Ministers of the Council of Europe.

Along with solving the merits of an individual dispute, the ECHR in its decision also develops the very provisions of the Convention, which must be interpreted in the same way by all ECHR member states. It is this feature of the «obligation of uniform interpretation» that allows national courts to refer to ECtHR decisions in individual disputes that have been decided against other states.

From the analysis of the provisions of the Convention, it follows that the mention of children is contained in the following articles:

In Article 5 (the right to liberty and personal integrity), in which paragraph "d" of paragraph 1, as a basis for deprivation of liberty, provides for taking under the custody of a minor on the basis of a legal decision for the purpose of applying supervisory measures of an educational nature or legal detention of a minor for the purpose of bringing him to the competent authority;  
Paragraph 1 of Article 6 (the right to a fair trial) provides that the judgment shall be announced in public, but the press and the public may be excluded from the proceedings during all or part of the proceedings when the interests of minors so require, establishing the possibility of limiting the publicity of court proceedings in cases involving children;  
Article 5 of Protocol No. 7 (equality of spouses) mentions that a man and a woman have equal rights and bear equal civil legal responsibility in relation to each other and with their children in relation to entering into marriage, staying in the marriage, and regarding its rupture. This article does not prevent States from requiring the adoption of such measures as are necessary for the best interests of children.

Although the Convention on the Protection of Human Rights and Fundamental Freedoms practically does not contain articles (except for Articles 5 and 6 of the Convention and Article 5 of Protocol No. 7 to it) that directly regulate or protect the rights of children, its provisions are applicable to children on an equal basis with others participants of the international legal relationship.

The European Court of Human Rights protects the rights enshrined in the Convention on the Protection of Human Rights and Fundamental Freedoms. Thus, the Convention and its Protocols determine the boundaries of the protection of rights in the ECHR. Along with this, over time, the norms enshrined in the Convention develop and expand their boundaries in the decisions of the ECHR.

A complaint to the ECHR can be filed by the state, any individual, any group of persons, or any non-governmental organization (Articles 33, 34 of the Convention). Thus, any person can apply to the court, regardless of their legal capacity (including mentally ill and minors) and citizenship. A complaint cannot be filed against a state that is not participating in the Convention and its Protocols. The European Court may establish the fact of violation of the Convention and also award the applicant appropriate compensation and reimbursement of expenses.

Taking into account the fact that a child cannot independently "exhaust intrastate means of protection", and the legal representatives of the child are sometimes recognized as violators of his rights, the issue of protecting children's rights in the practice of the European Court of Human Rights appears to be especially relevant.

Application of the provisions of the Convention on the Protection of Human Rights and Fundamental Freedoms to Children. The following articles of the European Convention appear most often in cases on the protection of children in the ECHR:

- a) Article 3. Prohibition of torture and inhumane degrading treatment or punishment (in particular, in cases of corporal punishment applied to children at school, by parents, or by court decision);
- b) Article 6. The right to a fair trial (establishes special procedural rules for the trial of minors accused of committing a crime);
- c) Article 8. The right to respect for family life (within the framework of which the court interprets the concept of family; the status of illegitimate children; defines the concept of actions in the interests of the child (choice of religion, name, etc.); transfer to the state of the right to custody of the child; cases of parental separation and children due to the deportation of their parents);
- d) Article 10 (part 2). Restriction of freedom of expression of opinion, obtaining and distributing information for the purpose of protecting health and morality;
- e) Article 14. Protection against discrimination;
- f) Article 2 of Protocol 1. The right to education (for example, education in private schools; respect for the philosophical beliefs of parents).

On the basis of these articles, the court developed certain legal standards regulating the legal position of children in international law. In

addition, when justifying the violation of a child's rights, references to other international legal acts that enshrine the rights of the child, in particular, to the UN Convention on the Rights of the Child of 1989, are permissible and even encouraged.

Based on the practice of the European Court of Human Rights, when protecting the rights of children, one of the frequently applicable provisions of the Convention is Art. 3, prohibiting torture or inhuman and degrading treatment or punishment. The European Court notes that in violation of Art. 3 is the bad treatment of a child, which has reached the minimum level of cruelty, the assessment of which, in turn, depends on a number of certain factors of a specific case (duration, gender, age, state of health of the child, impact on psychological or physical state). The cruelty of treatment distinguishes three elements: torture, inhumane treatment or punishment, and humiliating treatment or punishment.

As a precedent for the ECtHR's consideration of the case of humiliating punishment of a child, the case «Tyrer v. United Kingdom» European Court of Human Rights, 1978, can be considered. For the «illegal attack that caused bodily harm to the senior student of his school», a 15-year-old student in accordance with local law was sentenced to three strokes of the racket. It follows from the circumstances of the case that Anthony Tyrer did not suffer serious physical injuries.

Despite this, the ECtHR established that, given the child's age, he was humiliated during the execution of the punishment both in his own eyes and in the eyes of other people present there. Although the punishment was legally binding at the time of the case, the ECtHR determined that it was an attack on the honor, dignity, and physical integrity of the child. The court also noted that the execution of punishment by people completely unknown to the child could lead to negative psychological consequences. Thus, based on the totality of the circumstances, the court concluded that this punishment of the child can be considered as a punishment in which the humiliation reached the level implied by the concept of «degrading punishment», and found a violation of Art. 3 of the Convention. The ECtHR noted the responsibility of the state and the English legal system, in particular, for degrading treatment, subsequently, in accordance with the decision of the ECtHR, the legislation was changed.

As for the relationship between the Convention and other international norms in the field of child

rights protection, it should be taken into account that the Convention must be applied in accordance with the principles of international law, in particular those related to the international protection of human rights. The Court considers that Article 8 of the Convention, which concerns the Contracting States in the case of the reunification of parents with or their children, must be interpreted taking into account the Hague Convention (1980), and the Convention on the Rights of the Child.

This approach includes the combined and harmonious application of international documents, in particular in this case the Convention and the Hague Convention, taking into account its purpose and consequences for the protection of the rights of children and parents. Such consideration of international legal provisions should not lead to conflict or opposition to various international treaties, provided that the Court can fulfill its task in full, namely «to ensure compliance with the obligations assumed by the High Contracting Parties» of the Convention, by means of interpretation and application of the provisions of the Convention in a way that makes its guarantees practical and effective.

Therefore, the ECtHR examines complaints related to the violation of rights guaranteed by the Convention, which «should not be interpreted in a vacuum» and should «combine the harmonious application of international documents». The Convention must be interpreted in accordance with the general principles of international law (Parkhomenko, 2022).

The practice of the ECtHR has developed a number of principles related to the protection of children's rights:

- I. The principle of «ensuring the best interests of the child». The ECtHR in its precedent practice developed two conditions that must be taken into account when determining the main interests of the child in each specific case:
  1. First, it will be in the best interests of the child to maintain its ties with the family, except in cases where the family is particularly unsuitable or clearly dysfunctional;
  2. Secondly, it will be in the best interests of the child to ensure its development in a safe, calm, and stable environment that is not unfavorable (Mamchur v. Ukraine, 2009).

According to paragraph 1 of Article 3 of the Convention on the Rights of the Child, a child is given the right to have his or her best interests assessed and taken into account as a primary consideration when taking any actions or decisions regarding him or her in both the public and private spheres.

In General Comments No. 14 (Committee on the Rights of the Children, 2013) on the right of the child to pay primary attention to the best possible protection of his interests (paragraph 1 of Article 3), the UN Committee on the Rights of the Child formulated the following approaches:

- «Best interests of the child» is a right, principle, and rule of procedure based on the assessment of all elements reflecting the interests of the child or children in specific circumstances;
- When assessing and determining the best interests of the child in order to make a decision on the application of one or another specific measure, the following procedure should be followed:
  - firstly, taking into account the specific circumstances of the case, it is necessary to determine what the relevant elements of the assessment of the best interests are, fill them with specific content, and determine the significance of each of them in relation to others;
  - secondly, for this purpose, it is necessary to follow the rules that ensure legal guarantees and proper implementation of this right (paragraph 46).

When evaluating and determining the best interests of the child, the following elements must be taken into account:

- Child's views;
- The individuality of the child;
- Preservation of the family environment and maintenance of relations;
- Care, protection, and safety of the child;
- Vulnerable position;
- The child's right to health;
- The child's right to education.

- II. The principle of «balancing the interests of the child and parents». In particular, the ECtHR has noted in its practice that there must be a fair balance between the interests of the child and the interests of the parents, and, while maintaining such a balance, special attention must be paid to the most important interests of the child, which by their nature and importance should prevail

over the interests of the parents (paragraph 54 «Hunt against Ukraine») (Resolution CM/ResDH (2008)64, 2007). X. and Y. v. the Netherlands, Application No. 6753/74 (1974), is interesting in this respect, according to the factual circumstances of which the applicant, who was only 14 years old at the time, left home, as her parents were against her boyfriend. She hid with him for several days and fearing police persecution, both young people turned themselves into the police and were taken to their parents. Being with your boyfriend for a few days can be personal. As a result of the case consideration, the ECtHR formulated the following key positions:

- Any intervention for reasons of forced return of the applicant to her parents, as provided for by the relevant legislation of the Netherlands and in accordance with the requirements of the authorities, was a manifestation of respect for the life of her family, as well as necessary to protect her health and morals within the meaning of Art. 8 of the Convention.
- The obligation of children to live with their parents, and to be otherwise subject to some control, is necessary to protect the health and morals of children, although this may, from a certain point of view of the child, constitute an interference with his own private life.

- III. The principle of «finding out the child's opinion». «Paragraph 59 of the case «Saviny v. Ukraine», European Court of Human Rights, 2008, stipulates the following:

- «Article 12 of the Convention on the Rights of the Child – States Parties shall ensure that a child who is capable of formulating his or her own views has the right to express those views freely on all matters affecting the child, and the views of the child shall be given due consideration in accordance with his or her age and maturity»;
- «In General Comments No. 12 (2009), «The right of the child to be heard», of July 20, 2009, the Committee noted that the right of all children to be heard and taken seriously is one of the fundamental principles of the Convention».

The Committee emphasizes that Article 12 does not establish any age limit on the right of the child to express his views and does not encourage States parties to introduce age limits in law or in practice that would infringe on the child's right to

be heard on all matters that concern her interests (paragraph 21).

- IV. The principle of «the child's right to be heard». In the *Saviny v. Ukraine* case the Court notes that at no stage of the proceedings in the case did the judges listen to the children (including O.S., who in December 2004, when the proceedings were ongoing the case in the court of first instance was thirteen years old), and that as a result of the execution of the decision on the removal of children from their parents, they were not only separated from their families but also placed in various institutions. Two of them are raised in another city, far from Romain, where their parents, and siblings live, and this makes it difficult to maintain a regular relationship.

Defendant states, when implementing decisions of the European Court in cases on the protection of children's rights, take a variety of individual and general measures. So, for example, in Great Britain, after the case «*Campbell and Cozens v. Great Britain*» in 1987, the Education Act came into force, abolishing corporal punishment in state schools, as well as in state-funded schools (*Campbell and Cosans v. The United Kingdom*, 1987). After the case «*Johnston and others against Ireland*» in Ireland in 1988 the Law on the Legal Status of Children entered into force, equalizing the rights of «legitimate» and illegitimate children, Application 9697/82, 1986. After the case «*Bouamar v. Belgium*» Application 9106/80, 1995, a law came into force in Belgium in 1994, prohibiting the juvenile court from detaining children more than once for one trial, which determined the maximum term of detention to be no more than 15 days. Also, the state created separate premises for teenagers in relevant institutions.

### Conclusions

Thus, we can draw the following conclusions:

1. Analysis of the application of the Convention and the Protocols in the context of the protection of children's rights shows that the Convention on the Protection of Human Rights and Fundamental Freedoms, together with the relevant Protocols, does not directly contain provisions that directly regulate and protect the rights of children. However, even in the absence of special articles, children's rights can be protected on the basis of the general norms and principles of the Convention.

2. Applying the norms of the Convention, the ECtHR developed a system of principles and standards regulating the legal status of children in international law. The specified principles and standards should be taken into account when considering cases, in particular, at the national level. They are binding on states that have ratified the Convention.
3. When implementing the decisions of the European Court in cases on the protection of the rights of children, the defendant states take a variety of individual and general measures that allow to improve the system of protection of children's rights at the national level.

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## Practices of psychological and pedagogical support of future teachers' personal and professional development in the conditions of distance learning

### Практики психолого-педагогічного супроводу особистісного та професійного розвитку майбутніх педагогів в умовах дистанційного навчання

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#### Abstract

The article highlights the intermediate results of the research "Psychological and pedagogical support of future teachers' personal and professional development in the conditions of new educational standards' implementation in Ukraine". Various theoretical aspects as well as adapted and original practices are characterized. The experience of the authors regarding the implementation of the components - value-worldview, process-activity, emotional-resource during the motivational-cognitive, constructive-active, reflective-prognostic, value-identification stages is highlighted. Effective author's practices are presented - adaptation trainings, portfolio of personal and professional growth in the context of performance of work functions; formation of end-to-end skills of future teachers by means of digital technologies and tools (GDocs, GMeet, Zoom, Canva, MindMeister, Mentimeter, digital boards); adaptation of active learning technologies in the

#### Анотація

У статті висвітлено проміжні результати дослідження колективної наукової теми "Психолого-педагогічний супровід особистісного та професійного розвитку майбутніх педагогів в умовах реалізації нових освітніх стандартів в Україні". Подано різні аспекти актуалізації українськими і зарубіжними вченими, заявленої міждисциплінарної науково-практичної проблеми. Охарактеризовано адаптовані та авторські практики психолого-педагогічного супроводу особистісного та професійного розвитку майбутніх педагогів в умовах дистанційного навчання. Висвітлено досвід авторів статті щодо реалізації виокремлених компонентів – ціннісно-світоглядного, процесуально-діяльнісного, емоційно-ресурсного впродовж мотиваційно-пізнавального, конструктивно-діяльнісного, рефлексивно-прогностичного, ціннісно-ідентифікаційного етапів. Подано дієві авторські розробки та освітні практики – адаптаційні тренінги, портфоліо особистісного та професійного зростання (майбутніх педагогів) на

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distance learning format (case-technologies, game, project technologies, SWOT analysis). A complex of technologies (role-playing games, training technologies, art-therapy) is presented, which contribute to the development of the emotional intelligence of future teachers in the context of the formation of professional competencies - psychological, emotional-ethical, reflective, psycho-emotional. The research was carried out in an interdisciplinary scientific field, which requires next stages of the scientific search for correction, generalization of the results of psychological and pedagogical support of future teachers' personal and professional development.

**Keywords:** psychological and pedagogical support, components, personal and professional development, digital tools, educational practices.

## Introduction

Against the background of profound social, cultural, and economic transformations caused by the Russian-Ukrainian war, education in Ukraine is centered on democratic values and performs the function of reproducing losses and resource potential of the state. The task is to overcome those educational losses caused by depriving students of higher education of access to high-quality face-to-face classroom training. Taking into account the best experience of Ukrainian institutions of higher education and world heritage, the Borys Grinchenko Kyiv University operates a digital environment. The use of digital resources makes it possible to overcome educational losses. Distance learning of future teachers is carried out on the Moodle platform. The use of digital tools (Google Meet, Zoom, Canva, MindMeister, Mentimeter, digital boards, etc.) makes it possible to carry out comprehensive and systematic psychological and pedagogical support of future teachers' personal and professional development. The essence of the concept of "psychological-pedagogical support of future teachers' personal and professional development" is the expedient organization of ensuring the subjectivity of students of higher education, their personal and professional development in the context of the future teachers' performance of labor functions based on general (civic, cultural, leadership, social, communicative) and professional competencies for work (psychological,

різних етапах психолого-педагогічного супроводу особистісного та професійного розвитку майбутніх педагогів у контексті виконання трудових функцій; формування наскрізних умінь майбутніх педагогів засобами цифрових технологій та інструментів (Google-документи, Google Meet, Zoom, Canva, MindMeister, Mentimeter, цифрові дошки); адаптації активних технологій навчання в дистанційному форматі навчання (кейс-технології, ігрові, проєктні технології, SWOT-аналіз). Представлено комплекс технологій (рольові ігри, тренінгові технології, арт-терапевтичні психотехніки), що сприяють розвитку емоційного інтелекту майбутніх педагогів в контексті становлення професійних компетентностей – психологічної, емоційно-етичної, рефлексивної, психоемоційної. Дослідження проведено в міждисциплінарному науковому полі, що зумовлює проведення на наступних етапах наукового пошуку корекції, узагальнення результатів психолого-педагогічного супроводу особистісного та професійного розвитку майбутніх педагогів.

**Ключові слова:** психолого-педагогічний супровід, компоненти, особистісно-професійний розвиток, цифрові інструменти, освітні практики.

emotional-ethical, partnership, training throughout life, reflective, psycho-emotional).

The article highlights the materials that contain the intermediate results (theoretical-modeling stage) of a collective study on the topic "Psychological-pedagogical support of the future teachers' personal and professional development in the conditions of the implementation of new educational standards". The presented educational practices of psychological and pedagogical support of future teachers' personal and professional development have been tested for effectiveness in the conditions of the distance learning. Our efforts were aimed at identifying and implementing an interdisciplinary resource of psychological and pedagogical support of future teachers' personal and professional development under the educational and professional program "Preschool education", "Primary education" in the process of teaching integrated educational courses: "Humanities", "Psychology", "Pedagogy". In accordance with the objectives of the research, the components of psychological-pedagogical support of future teachers' personal and professional development were clarified and substantiated: value-worldview, procedural-activity, emotional-resource. The value-worldview component forms the basis of knowledge about a person and his values (ethnocultural, socio-civic, personal and professional) and the formation of a humanistic worldview of future teachers. In the context of the research topic, the humanistic

worldview serves as a factor in the personal and professional development of future teachers. Since the subjectivity of future teachers and their professional development can occur exclusively in activities, priority is given to the introduction of technologies of future teachers' active learning into the educational process and the development of their comprehensive skills in accordance with the requirements of new educational standards. Effective practices of the implementation of the procedural and activity component in the conditions of distance learning are disclosed in the "Results and Discussion" section of the article.

We consider the emotional resource component in the context of future teachers' personal and professional development in the conditions of social upheavals and challenges of wartime in Ukraine. Training practices for the development of emotional intelligence of future teachers are highlighted. A new vision of the content of the emotional resource component is presented in the academic disciplines: "Humanities", "Psychology". The essence is 1) in the development of content modules: techniques for overcoming the anxiety of teachers and students during air raids, techniques for the formation of stress resistance of the individual in difficult life conditions and during military operations; 2) ensuring the subjectivity of future teachers in the educational process.

The practices of psychological-pedagogical support of future teachers' personal and professional development are highlighted in accordance with the stages determined at the first (analytical-statistical) stage of research, namely: motivational-cognitive, constructive-active, reflective-prognostic, value-identifying.

The article presents the experience of solving a complex interdisciplinary scientific problem, which was responsibly developed by the authors of the study in the changing and often unpredictable conditions of wartime. The educational practices of psychological and pedagogical support of future teachers' personal and professional development highlighted in the article are effective in the conditions of distance learning.

### Literature Review

The solution of the scientific problem was carried out taking into account the analyzed scientific achievements of Ukrainian and foreign scientists who research various aspects of distance learning and its varieties in the conditions of the Russian-

Ukrainian war, innovative practices and technologies of psychological and pedagogical support for the training of teachers and their personal and professional development.

In the context of the issues of the article, the ideas regarding the modernization of the education system in Ukraine based on democratic values and digitalization serve as the basis for its integration into the European educational space (Kuzmenko, Matvienko, Kanova, Burenko, & Bukliv, 2022).

We support the scientific position regarding the relevance of the functioning of the open digital educational environment in universities of Ukraine and foreign countries and the compliance of ICT content with modern requirements, which is highlighted by the authors – Melnyk, N., Pukhovska, L., Kovtun, O., Biletska, I., & Ladohubets, N. in the article "Current trends of teacher education in the Ukraine and EU countries under conditions of postpandemia and russian invasion" (2022) (Melnyk, Pukhovska, Kovtun, Biletska, & Ladohubets, 2022).

The severity of the study of the practices of psychological and pedagogical support of future teachers' personal and professional development is determined by the work of the authors' group in previous years. Separate results of the authors' work on the problem of using digital tools in the conditions of mixed and distance learning of students are highlighted by Ivaniuk, H., Kuzemko, L., Venhlovska, O., Vovchok, Y., & Antypin, Y. in the article "The use of digital tools in interdisciplinary projects of students' personal and professional self-development" (2022). The authors revealed the experience of using digital tools in interdisciplinary projects of personal and professional self-development of students of pedagogical specialties in the conditions of mixed and distance learning. However, the article lacks an analysis of the psychological and pedagogical support of the process of future teachers' personal and professional development, which led to further research and coverage of its results in the future (Ivaniuk, Kuzemko, Venhlovska, Vovchok, & Antypin, 2022).

In the article Mukoviz, O.P., Kolos, K. R., & Kolomiets, N. A. "Distance learning of future primary school teachers as a prerequisite of their professional development throughout life" (2018) the authors reveal the essential features of distance learning as a prerequisite for the professional development of future primary

school teachers throughout life. Practices of using digital devices, information and communication technologies with indirect interaction – synchronous with the participants of the educational process are presented. The essence of the concept “readiness of the future primary school teacher for distance learning” is revealed. Note that the content of the article reveals the professional component of teacher training in the conditions of distance learning. It would be worthwhile to reveal the personal component of teacher training in the context of the problem of the article (Mukoviz, Kolos, & Kolomiets, 2018).

The collective scientific product of the study on the problem of evaluating the readiness of future teachers for online education (Tkachenko, V., Chychuk, V., Zakharevich, M., & Nenko, Y.) is covered in the article “An evaluation of Ukrainian future teachers’ of humanities readiness for e-education” (2021). The authors cite the proven fact of updating the training of future teachers for distance learning during training, the introduction of adequate technologies that will contribute to the effectiveness of this process. Despite the interesting content of the article on the current topic, the extensive layer of psychological and pedagogical support of future teachers’ personal and professional development in the conditions of distance learning remained unnoticed by researchers (Tkachenko, Chychuk, Zakharevich, & Nenko, 2021).

The article by the group of authors (Meniailo, V., Shapran, Y., Shapran, O., Serhiichuk, O., Bahno, Y., & Kanibolotska, O.) “Innovative Training of Future Teachers of Higher Education Institutions in the Conditions of Distance Learning” (2021) presents the features of the implementation of distance learning in higher education institutions of Ukraine against the background of changes in the attitude of students and teachers to this problem after learning the “Modern Distance Education” course. The authors’ approach to using the electronic resources and the development of future teachers’ personal educational trajectory is presented. In our opinion, the content of the article presents interesting forms of independent work of students, techniques and trainings, which we consider hypothetically as means of personal development and self-development of students (Meniailo, Shapran, Shapran, Serhiichuk, Bahno, & Kanibolotska, 2021).

The author Kotkova V. in the article “Blended learning course for future primary school

teacher’s implementation” (2017) highlights the essential features of the organization of blended learning based on the results of researching the problem at the theoretical and practical levels. The achievement of the researcher is the described practice of designing a blended learning course according to the target, motivational, content, activity and diagnostic components (Kotkova, 2017).

In the context of the issues of our article, the work of the author team (Terenko, O., & Ogienko, O.) which is covered in the article “How to Teach Pedagogy Courses Online at University in COVID-19 Pandemic: Search for Answers”, is of practical interest. The authors provide sufficient proof of the effectiveness of the integrated use of digital online platforms Moodle and Prometheus, software for conducting Zoom webinars, web servers, which are considered in the context of didactic training tools for students of higher education (Terenko, & Ogienko, 2020).

In the direction of updated issues of psychological-pedagogical support of future teachers’ personal and professional development, the article by A. V. Trotsko, L. S. Rybalko, O. G. Kirilenko, & G. O. Trush “Teachers’ professional self-improvement in the conditions of distance learning implementation in higher education institutions” (2019) is of interest. The article focuses on clarifying the specifics of the implementation of effective distance learning for higher education students, the subjectivity of higher education students and teachers in this process, and the requirements for systematic self-improvement of teachers are proven. The presentation of the material at the theoretical level is confirmed by the work program from the interdisciplinary course “Introduction of educational distance technologies into the educational process of higher education”, which is recommended for teachers of various training specialties, pedagogical and non-pedagogical education and didactic materials on information and communication technologies (Trotsko, Rybalko, Kirilenko, & Trush, 2019).

The article of Tsuniak, O., Myhovych, I., Khomych, L., Noskova, M., & Kopchuk-Kashetska, M. “Using Distance Learning in the Process of Professional Training in the Context of the COVID-19 Pandemic” is consistent with the issue of distance learning organization and implementation. In the content of this work, the author’s interpretation of the category “distance learning” is presented and the importance of organizing distance learning for

students of higher education, in particular pedagogical specialties and providing conditions for the development of competencies of future specialists in general, is updated (Tsiuniak, Myhovich, Khomych, Noskova & Kopchuk-Kashetska, 2021).

To substantiate the essential features of psychological and pedagogical support for the personal and professional development of future teachers, the monograph of the modern Ukrainian researcher Kucheriavyi V. G. "Professional and personal development of a modern teacher" (2021) is of scientific interest. In the monograph, the author reveals the solution to the scientific problem of the integrity of the acmeological development of the teacher on the basis of a complex of positions – axio-acmeological, synergistic, axio-cultural, holistic-systemic, personal-activity and competence. What is valuable in the presented work is that the author holistically and systematically substantiated the personal, professional, and professional-cultural components of the development of teachers (especially future ones) as an important determinant of their career growth (Kucheriavyi, 2021).

According to the study of the scientific problem of psychological and pedagogical support of future teachers' personal and professional development in the conditions of distance learning and educational changes during the war in Ukraine, the scientific and practical value is the ideas substantiated by modern Ukrainian scientists – Chymak, M., Khomych, L., Nakonechna, L., Kopchuk-Kashetska, M., & Zadoya, S. in the article "Individual Educational Trajectory as a Way to Reveal the Potential of a Future Teacher" (2021). Among others, the most important achievements are: first of all, an emphasized opinion about the connections and interdependence of personal and professional components in the training of future teachers in the educational process of a higher education institution. The second is the idea of taking into account the needs of society for the education of a person of digital civilization and supporting the personal and professional trajectory of acquiring competences; functional modeling (IDEEO) of the studied process (Chymak, Khomych, Nakonechna, Kopchuk-Kashetska, & Zadoya, 2021).

Some aspects consistent with the topic stated by us in the article are highlighted by the authors – Halian, I., Popovych, I., Nesin, Y., Zavatskyi, Y., Vashchenko, I., Muliar, O., & Marchenko, A in the scientific work "Experimental Research of

the Sense-Value Regulation of Future Teachers in Academic and Professional Activity" (2021), in particular: support of the value-meaning sphere, sense-value regulation of educational and professional activities of future teachers. This reasoning is relevant and has the right to further development in the scientific and practical field (Halian, Popovych, Nesin, Zavatskyi, Vashchenko, Muliar, & Marchenko, 2021).

In the context of the purpose of the article, we focused on some aspects of the scientific report prepared by a group of authors, namely: Marize Lyra Silva Passos, Isaura Alcina Martins Nobre, & Jaqueline Maissiat – "Active learning in teacher professional development: experiential reports". In view of the research problem, the experience presented in the document on the implementation of student-centered education in the Republic of Finland, based on active learning and cooperation of teachers and students, is of interest (Passos, Nobre, & Maissiat, 2018).

In the direction of the scientific problem of psychological-pedagogical support of future teachers' personal and professional development, in particular, the implementation of the emotional-resource component of the formation of the emotional intelligence of future teachers, the article of the author's team (Carmona, SP, Duenas, CP, Fernandez, PC, & Salas, BL.) of scientific interest is "Competencias emocionales de las futuras personas docentes: un estudio sobre los niveles de inteligencia emocional y empatía" (2020). The article presents an idea regarding the development of social-emotional competencies in future teachers as a factor in the growth of their professional career and endurance in stressful conditions. Based on the results of the study, the authors offer a number of recommendations for improving the content of educational and professional programs (Carmona, Duenas, Fernandez, & Salas, 2020).

According to the issues of the article, ideas about the primacy of the influence of socio-cultural dominants on the value intentions of future teachers are useful. The authors summarize the results of the research on the development of value intentions in future teachers, confirmed by statistical data of the positive dynamics of the studied phenomenon and the correlation between the motivation of future teachers for value-based activities and the perceived constant value, extrapolated to future pedagogical activities (Ivaniuk, Oleksiuk & Vyshnevetska, 2021).

The analyzed theoretical sources based on the issues of the article proved the interest of Ukrainian and foreign scientists in various aspects that are the subject of interdisciplinary research. A wide range of studies highlight various issues of the organization and practices of future teachers' distance education, which are current in Ukrainian and global realities. Despite the numerous studies of Ukrainian and foreign scientists on the problem-directed implementation of psychological-pedagogical support of future teachers' personal and professional development, the mentioned topic has not been comprehensively covered. The relevance of the topic is determined by the social needs for solving a set of tasks regarding the modernization of the practices of psychological-pedagogical support of future teachers personal and professional development in the conditions of overcoming and preventing educational losses in the conditions of distance learning of higher education applicant's education.

**The purpose of the article:** to highlight effective practices of psychological and pedagogical support of future teachers' personal and professional development in the conditions of distance learning.

### Methodology

The specificity of the presented interdisciplinary research includes the demand for a wide range of methodological approaches, in accordance with the scientific field of research into psychological and pedagogical support of future teachers' personal and professional development. We have chosen a complex of methodological approaches that make it possible to investigate the outlined scientific problem holistically and systematically. Among others, we single out the synergistic approach, the name comes from the word "synergos" (one that acts together). In the context of the research issues, we singled out the following feature: systems of different levels are balanced by connections; common to all systems is manifested in spontaneous formations at the macro level and the emergence of new qualities at the stage of self-organization (Kremen, 2014). Competency approach (Rogers & Freiberg, 1994) makes it possible to consider and evaluate the components of psychological-pedagogical support of future teachers' personal and professional development in the context of their preparation for the performance of work functions, formation of general and professional competencies by work action. The axiological approach made it possible to investigate and group values that express the subjectivity of

future teachers in the search for ways for personal and professional development, development and selection of adequate educational goals (Ivaniuk, 2023). The anthropological approach is based on the recognition of the value of a person as a representative of a biological species and the right to its development and self-development in the system of life-creating values (Anosov, 2005).

To solve the goal and tasks of the scientific problem, a set of interrelated research methods was used: theoretical analysis, synthesis, systematization – with the aim of clarifying the state of research of the problem in modern scientific discourse and clarifying the concepts; constructive-genetic – to clarify the methodological concepts of the research of a scientific problem; generalization, comparison, classification – for substantiation of components, grouping of educational practices and technologies of psychological and pedagogical support of future teachers' personal and professional development; empirical – pedagogical observations, online surveys (using the Google digital tools), questionnaires, interviews in order to identify the state of the problem in the practice of higher education in Ukraine; methods of mathematical statistics – for identifying and interpreting quantitative and qualitative research indicators. An online survey of higher education applicants of educational and professional programs Preschool Education and Primary Education from three universities and two postgraduate pedagogical institutes was conducted. The statistical sample consisted of 674 persons, of whom 76.7% were future teachers; 23.3% are students of professional development courses, which made it possible to establish proportionality regarding the impact of psychological and pedagogical support on the personal and professional development of teachers in the context of their professional functions. An online survey, pedagogical observation, comparative analysis made it possible to find out the quantitative indicators that formed the basis for the interpretation and selection of educational practices of psychological and pedagogical support of future teachers' personal and professional development in the conditions of distance learning.

### Results and Discussion

The new vision of psychological-pedagogical support of future teachers' personal and professional development is determined by social needs for solving a number of tasks: 1) changing

educational determinants in the course of implementing Professional Standards for the professions “Teacher of primary classes of a general secondary education institution”, “Teacher of a general secondary education institution”, “Primary education teacher (with a junior specialist diploma)” (Order No. 2736-20 dated 12/23/2020, 2020), “Teacher of a preschool education institution” (Order No. 755-21 dated October 19, 2021, 2021); 2) development of a flexible model of the organization of the educational process using digital technologies, in order to overcome the educational losses that occur during military operations in Ukraine; 3) provision of conditions for equal access of applicants to quality education.

It is time to create and operate a digital educational environment in a higher education institution to provide technical, communication, information and didactic conditions for distance and combined learning of higher education students. In particular, at Borys Grinchenko Kyiv University, the conditions listed above for distance learning of higher education applicants have been created on the Moodle platform. Modern technical support that ensures the functioning of the university's digital hub and the digital environment are decisive for distance learning of higher education applicants in accordance with the best global models. The provision of didactic conditions consists in the development by teachers of training e-courses (certified in accordance with the current Regulation on the procedure for creating training e-courses, their certification and use in the e-learning system of Borys Grinchenko Kyiv University (<https://kubg.edu.ua>). Training e-courses, posted on the Moodle platform, contain working curricula of courses in accordance with educational and professional programs, in particular those presented above in the text; goals

and tasks, learning outcomes (general, professional competences), content of lectures and reflective tasks for them, tasks and methodological recommendations for seminar, practical and laboratory classes, current and final assessment criteria. Such a structure of training e-courses enables the educational process to be carried out holistically and systematically using e-services – Google Meet, Webex Meet, Zoom (according to the schedule of the educational process and the schedule, which are publicly available in the digital environment).

According to the results of a survey of Preschool education and Primary education students of the Faculty of Pedagogical Education Borys Grinchenko Kyiv University (443 students of the first (bachelor) level, 1 year of the second (master) level of higher education) it was found that 91.2% of respondents prefer distance learning, and 8.8% expressed regarding the advantages of classroom and mixed forms of education (this group of respondents includes mostly first (bachelor) level higher education graduates) who do not have a sufficient level of digital competence. In order to clarify and select the practices of psychological and pedagogical support of future teachers' personal and professional development in the conditions of distance learning and overcoming educational losses caused by the war in Ukraine, an online survey of higher education applicants was conducted regarding the use of online platforms and services during education. The results of the survey prove that future teachers: 1) exercise the right of their own choice regarding online platforms for obtaining information and performing independent research work; 2) mostly use online platforms and applications for communication; 3) use the latest digital tools and programs for information search – Chat GPT (the results are presented in Table 1).

**Table 1.**

*Online platforms and services used by future teachers during distance learning (according to survey results, presented in %)*

| Platforms for distance learning | Online services for video communication | Applications for communication | Online platforms        | Applications  |
|---------------------------------|---|--------------------------------|-------------------------|---------------|
| Moodle – 93,3%                  | Google Meet – 53,4%                     | E-Mail – 86,7%                 | YouTube – 45,4%         | ChatGPT – 22% |
|                                 | Zoom – 30,9%                            | Telegram – 81,9%               | Canva – 0,9%            |               |
|                                 | Cisco Webex – 1,4%                      | Viber – 1,9%                   | Miro – 0,2%             |               |
|                                 |   | Facebook Messenger – 6,5%      | Internet-sources – 0,2% |               |

Source: Ivaniuk H., Kuzemko L, 2022.

According to the stated problems, the article reveals effective practices of psychological and

pedagogical support of future teachers' personal and professional development. The presented

practices are the result of a theoretical and practical search by a team of researchers. The selection of practices was carried out according to competence, dynamic, intrapersonal criteria. These educational practices serve as a means of developing the subjectivity of students of higher education in the process: formation of personal and professional qualities, ability and readiness for development and self-development in order to produce new ideas and methods of activity based on acquired knowledge, development of one's own trajectory of professional growth (Ivaniuk, 2023). In the materials of the article, the intermediate results of the collective research "Psychological and pedagogical support of future teachers' personal and professional development in the conditions of the implementation of new educational standards" at the theoretical-modeling stage are used, namely: components of psychological-pedagogical support – value-worldview, procedural-activity, emotional-resource. The specified components are interrelated with the goal of appropriately organized psychological and pedagogical provision of the subjectivity of future teachers, personal and professional growth in accordance with standardized work functions, which are based on general and professional competencies in accordance with those work actions that will be performed by primary school teachers and preschool teachers.

We consider the value-view component of psychological and pedagogical support of future teachers' personal and professional development to be human-creating. Humanitarian knowledge acquired by future primary school teachers and preschool teachers in the process of studying pedagogy, pedagogical and psychological anthropology is a living resource for personal and professional development. Educational practices based on universal human values contribute to the formation of a humanistic (human-centered) worldview. Therefore, the basis of learning and education of a person should be knowledge about a person and his values – freedom of choice and activity, human life in a safe natural environment, safety, own trajectory of development and self-development, goodness and benevolence. The current civilization is often called digital due to the rapid pace of implementation of digital technologies and AI in all spheres of social life, in particular in education at all levels. In order to solve the ripe global problems of humanity, we have to make up for the lack of value-worldview concepts for the training of future teachers. The task consists establishing relationships and complementing value-enriched content from educational fields

(pedagogy, humanities, psychology) with modern digital technologies and tools in the distance learning process. Overcoming these challenges is facilitated by the study of the integrated course "Humanities" by future teachers, the purpose of which is the formation of students' holistic knowledge about human development in biological, mental and social contexts. Understanding the unity of human nature, the value of its existence and the formation of a humanistic worldview of future teachers. In the context of future professional activity, the content module "Pedagogical Anthropology" becomes of practical importance, which acts as an integrator of knowledge about anatomical and physiological development, the basics of pediatrics and psychological anthropology and aims to study a person who educates and is brought up. In the process of studying the "Humanities" course, future teachers consider the universality of human nature and the peculiarities of its development in the context of the educational environment. Getting acquainted with the issue of the development of culture as a space of human existence, they consider the place and role of education in the world of culture and learn about the peculiarities of the formation of the national education system, which in turn becomes the basis for understanding the multicultural approach to child education. Knowledge of the patterns of cultural development provides a basis for understanding the modern digital environment, in particular the educational one. Future teachers investigate issues of innovation and perform search and creative tasks in the process of preparing and defending the theses of oral presentations on the following problems: "Is educational work possible in an educational institution in the conditions of distance education?", "Distance (digital) education needs a person, or vice versa?", "What should a teacher be like to meet modern educational challenges?" etc. In this way, not only an understanding of general ideas about human development in all its manifestations is achieved, but also the ability to build a knowledge system, to use ideas for self-expression and personal and professional development is formed. The use of such practices in the process of distance learning contributes to the formation of a value system in which a person (the value of his being) occupies a leading place, which contributes to the personal and professional development of the future teacher.

The procedural and activity component of the psychological-pedagogical support of personal and professional development is aimed at solving the tasks of forming in future teachers the ability

and readiness for self-knowledge and self-development, the development of cross-cutting skills that are important in the performance of work functions determined by professional standards, and the design of one's own progress in the profession. Note that the procedural and operational component of the specified process is implemented at various stages (defined in the study) throughout the entire period of student education. It is important that the procedural and activity component of the psychological and pedagogical support of personal and professional development is carried out systematically – during the study of academic disciplines, passing educational practices and in extracurricular work. And also during adaptation trainings, pedagogical workshops, trainings, webinars held in the center of self-discovery and self-development, which is a kind of platform where future educators of preschool children and primary school teachers acquire general and professional competencies.

During the period of distance learning, the author's team developed productive practices aimed at solving the defined tasks of this component. Digital technologies and tools, as well as technologies of active learning, which are aimed at including students in the process of personal and professional growth during training, help in the implementation of psychological and pedagogical support. We will give examples of effective practices of implementation of the procedural and activity component of psychological and pedagogical support of personal and professional development of future teachers.

The goal of the motivational-cognitive stage is to find out the leading motives for choosing a teaching profession and the personal and professional characteristics of a humanist teacher, the expectations of students regarding their own personal and professional development, self-knowledge, the study of personal qualities that are important for the profession of an educator/teacher, etc. The defined goal is realized in the process of studying the integrated educational discipline “Pedagogy” (content modules: “General Pedagogy”, “Pedagogical Partnership”), which students study in the first and second years. In the course of studying, future teachers acquire knowledge about the requirements for a teacher as a subject of the educational process, determine the level of formation of personal qualities and professional competences, analyze the factors that are decisive in professional formation. So, for example, the task of a practical lesson on the

topic “Personal and professional growth of a future teacher” is to create a self-presentation “I am a future teacher”. It should be noted that the completion of the task is preceded by a discussion with the students of the specified issue during the lecture, which takes place in the form of a discussion or a round table. The priority topics for discussion are: “Portrait of a teacher of the New Ukrainian School”, “Modern vectors of activity of a primary school teacher”, “Factors affecting the success of a teacher” and others. In the process of discussing current issues, future teachers acquire the ability to express their own point of view and accept the arguments of opponents regarding the proposed topic, exchange ideas regarding its solution. After discussing the problem, students start preparing for a practical lesson on the topic that was mentioned above.

Creating a self-presentation takes place during several stages. At the first stage, students determine the dominant motives that influenced the choice of profession. They record the results of their thoughts in special forms, answering the question: why did they choose Borys Grinchenko Kyiv to study? What guided them in choosing a profession? What attracts them to the teaching profession? Which teacher is a role model? At the second stage, students use a SWOT analysis to determine personal qualities that will help them realize themselves in the profession, qualities that should be developed during training, establish the availability of appropriate resources aimed at personal growth, and also identify possible insecurities in their own choice and fears that can create obstacles in professional formation. At the third stage, the results are summarized and the self-presentation is prepared, which is presented either in the form of an actual presentation (created using PowerPoint, Canva) or as a video presentation. At the fourth stage, students present their own achievements during a practical session, upload them to a training e-course or post them on their own social network pages. It should be noted that in the process of creating a self-presentation, the overall skills of future teachers are also being developed, in particular, the ability to self-assess. This is important, because the work on which the student worked is evaluated not only by the teacher, but also directly by the student himself, who participates in the evaluation of his own result, determining at the same time what was managed to be embodied in self-presentations, aspects of the development of which are still worth working on, compares his own results with those that were at the beginning of the work,

singles out the factors that contributed / did not contribute to the work.

It should be noted that the work on the implementation of the motivational-cognitive stage of the psychological-pedagogical support of personal and professional development continues during the preparation of students for educational practice, which is carried out on the basis of the Center for Self-Knowledge and Self-Development. In the conditions of distance learning at this stage, psychological and pedagogical support of students is carried out in the format of online meetings using the Google Meet online service. Online communication is carried out in the process of interaction using active learning technologies (game and project technologies), digital tools (digital board Jamboard, MentiMeter for creating a cloud of words and organizing feedback), technologies aimed at forming self-analysis abilities.

In the course of pedagogical workshops "First steps in the profession", students exchange their own expectations regarding the completion of educational practice, study personal qualities that will contribute to the performance of tasks, create a portrait of a modern teacher and compare it with whether the students themselves sufficiently correspond to the image they created. With the help of game technologies, future teachers determine positive and negative qualities that can help or hinder them from completing practical tasks ("I know myself", "Associations", "I want and can", etc.). In turn, technology projects form the readiness of students to create informational educational products for participants in the educational process. These educational products include: information booklets for parents on coping with war-related anxiety in children; tips on how to calm a child while in a shelter; selections of games for children of preschool and primary school age, etc.

In the work of pedagogical workshops, reflection is important, aimed at receiving feedback from students regarding their motivation and readiness to perform the proposed tasks, as well as clarifying individual needs for psychological and pedagogical support of personal and professional development.

At the constructive-activity stage of the procedural-activity component of the psychological-pedagogical support of personal and professional development, students master the skills of setting goals, designing a road map of personal and professional development and determining the ways of its implementation,

work is carried out on the development of end-to-end skills of future teachers. Selected tasks are solved with the help of active learning technologies (game, project, case technologies), execution of interdisciplinary projects, use of digital technologies (work in joint documents, on interactive boards, use of online services). At this stage, psychological-pedagogical support is carried out based on the skills and experience that were formed and obtained by students at the previous stage. However, the focus of the support is focused on the fact that students, based on the knowledge gained about themselves, design a road map of personal and professional development, create a portfolio of personal and professional growth, and try on the roles performed by modern teachers. So, for example, during laboratory work on the topic "Changing the role of the teacher for the implementation of partnership pedagogy" (taught in the course "Pedagogy", content module "Pedagogy of partnership"), future teachers practice self-analysis and self-improvement skills, acquire the necessary skills to perform new roles (teacher-facilitator, teacher-tutor, teacher-coach, teacher-moderator, teacher-researcher). At the beginning of the lesson, with the help of diagnostic methods (Lüscher's test, psychogeometric test of S. Dellinger, etc.), students determine their own inclinations towards a certain professional role of a teacher. The obtained results are entered into specially developed forms. The next step is to move to the analysis of pedagogical situations that reflect the different roles performed by the primary school teacher and determine how this or that role is acceptable for each individual and the academic group as a whole. Future teachers discuss the results of the analysis of situations in the forum posted in the electronic training course, or fix them on common boards, enter them in a common Google table. Based on the results of the work, the winners develop their own "Map of the teacher's professional role....." (can be created in the format of MindMaps, presentations, booklets). In such a map, students indicate specific steps aimed at self-improvement of personal qualities, all-round skills, abilities in accordance with the chosen role.

Note that case technologies are effective at the stage of psychological and pedagogical support. Such technologies provide an opportunity for future teachers to learn practice while analyzing specific situations. Descriptions of practical cases are presented in the training e-course of the integrated educational discipline "Pedagogy". Work with cases takes place in different ways: they are worked out by students independently

with subsequent discussion during seminar, practical, laboratory classes; during a group discussion in the course of teaching a problematic lecture held in the format of a video conference; during preparation for practice at the center of competences – the Center for Self-Knowledge and Self-Development.

The main tasks that are solved at the reflection-prognostic stage of the implementation of the procedural-activity component of the psychological-pedagogical support of personal and professional development consist in the formation of the ability and readiness of future teachers to determine the priority goals of personal and professional development, plan the ways to achieve the goals, select the necessary resources for their implementation, and determine the level of formation of their own end-to-end skills. The portfolio of the student's personal and professional growth (developed by a group of authors) is effective at this stage. First-year students create such a portfolio on Google Drive while preparing for their internship. It is important that the accumulation of practical materials, resources and tools, which are decisive for the future teachers' personal and professional development, takes place from the 1st to the 4th grade. The materials are collected in a portfolio, students use not only during practice, but also during reflective meetings held on the basis of the competence Center of Self-Knowledge and Self-Development. In the course of reflective meetings, future teachers reflect on how the practice went, whether the goals were achieved, and determine the indicators of their own success. It is important that during reflective online meetings, future educators of preschool children and primary school teachers join group discussions during which they discuss current problems of preschool and primary education, develop communication skills, group interaction, and suggest ways to improve practice tasks. The practical significance of such meetings lies in the fact that students have the opportunity to demonstrate the blogs they have created, which highlight the specifics of the practice, video essays, and share their experience. It should be noted that during such meetings, students identify their own victories, share plans for personal and professional development, indicate which skills are still worth working on and what they would like to change in their own progress. Future teachers not only talk about plans for the future, but also visualize them in the form of mental maps (MindMeister, Mindomo, MindMup).

At the value-identification stage, students work out the knowledge they have acquired, the comprehensive skills they have developed during practical activities. Psychological-pedagogical support of personal and professional development of future teachers is aimed at the fact that in the course of educational activities, students simulate professional situations, learn to identify the extent to which the formed cross-cutting skills correspond to the work functions defined in professional standards. During internships, they perform search and research tasks, such as: designing the developmental (educational) environment of a preschool or primary school, developing game-performance scenarios for children, planning educational interaction with children. At this stage, students learn to use game and project technologies, problem situations in working with children of preschool and primary school age, applying the experience gained by them at the previous stages of education.

The emotional-resource component of the psychological-pedagogical support of future teachers' personal and professional development is implemented in the process of studying the integrated educational disciplines "Psychology", "Humanities" (content module "Psychological Anthropology"). It is important to select effective practices for the formation of cognitive, emotional and behavioral spheres of personality, which are the basis for the development of emotional intelligence of future teachers and touch such levels as: intrapersonal, interpersonal, social. The implementation of the tasks defined above in the text takes place during online lectures, seminars, practical and laboratory classes, which are held in a remote format using Google Meet, using elements of training, conversations, discussions, role-playing games, psycho-gymnastics; body-oriented practices, meditative techniques, associative exercises, relaxation exercises, visualization. The purpose of such classes is to study emotional states, the abilities of future specialists to understand the emotions of others and to manage their own emotional state. In addition, it is important that during joint work, the participants of training classes master the ability to understand and constructively influence the emotional experiences of communicators, establish and maintain effective interaction, avoid emotional barriers in interpersonal communication, and become familiar with the techniques of self-regulation of emotional states in the practical activities of a teacher.

At the motivational-cognitive stage, the understanding of future teachers of the concept' essence "emotional intelligence", its essential characteristics, structural components and peculiarities of manifestation in the participants of the educational process is studied. For this purpose, during the study of the topics "Properties of a person as an individual", "Psychology of subjectivity", students are offered tasks to learn about their own emotional states; on the ability to freely share one's feelings: to express emotions using non-verbal means; to be aware of the peculiarities of one's own emotions (mini-lectures: "Emotional intelligence as a personal component", "Awareness of emotions through bodily sensations", "Verbal and non-verbal expression of emotions"; exercises "My emotion", "Mimics and the human condition", "The path of my life: past, present, future", "Mobilizing breathing"; creating collages: "My mood", "War of emotions"). According to the results of tasks, students master the ability to understand expression; understanding emotional contributions to one's own life; awareness of inconsistencies between verbal and non-verbal expression of emotions.

At the constructive-activity stage, future preschool educators / primary school teachers acquire the ability to recognize, explore, understand, and express their own emotions; understand, accept, influence the emotions of others; relieve emotional tension; restore psycho-emotional balance; provide empathic support to others; mastering verbal and non-verbal means of interaction (Palamar, Savchenko, & Antypin, 2022). The specified tasks are implemented during online practical classes held in the form of role-playing games "Colors of Emotions", "Transmission of Feelings", "Compass of Emotions". In the process of acting out role-playing situations, participants have the opportunity to see group members, their performance of social roles, and receive feedback during work. In the conditions of choice, the participant structures the role-playing situation (its plot, behavior, etc.). The participants of the online training realize how their actions "build up", how difficult it is to "lose" them in a format unknown to them. Thus, they learn to look for the most optimal options for actions, solutions to problems that arise in the process of exchanging information, emotions, etc. Future teachers learn constructive interaction and search for optimal actions to solve situations given by the role-play, and a more adequate view of the behavior of others and their emotional reactions is formed (Palamar, Gruzieva, Nezhyva, Yelenskiy, Rudenko, Khomik & Savchenko, 2022).

At the reflexive-prognostic stage, the activity is aimed at self-knowledge and introspection of one's own emotional sphere, the development of the ability to identify and understand one's own emotions, the intentions and motives of the emotional states of others, learning the means of emotion correction. Art therapy psychotechniques can be helpful in solving this task. So, for example, during the study of the discipline "Psychology" from the topic "Man in Society", students are asked to create a drawing on a given topic. At the first stage, students "internally construct" a pictorial image (corresponds to the task set by the teacher). On the second – direct projection of an imaginary image to the outside (a sheet of paper). On the third stage, the drawing is presented to others (another, in particular, the teacher) and its verbal interpretation followed by joint analysis.

It is important that students follow the steps when creating a picture. At the first stage, the "internal construction" of the graphic image (corresponds to the task) takes place. On the second – direct projection of an imaginary image to the outside (sheet of paper). On the third – showing the drawing to others and its verbal interpretation followed by joint analysis. The color used in drawing techniques has its own psychological characteristics and is associated with certain experiences among students. It is this that helps greater personal and professional self-disclosure, and thus greater understanding of oneself. The mental drawing promotes catharsis in students, a personal search for an answer to solving the problems of solving conflict situations, a vision of the future.

At the value-identification stage, the acquisition of practical content and the implementation of acquired knowledge about emotional intelligence takes place through the creation of scientific projects of psychological and pedagogical support of future teachers' personal and professional development based on the competence centers of the Faculty of Pedagogical Education: the Center of Self-Knowledge and Self-Development <https://fpo.kubg.edu.ua/struktura/inshidiprozdily/centr-samopiznanna-ta-samorozvitky/pro-tsentr.html> and the Center of Innovative Educational Technologies (ICR-class) <https://fpo.kubg.edu.ua/struktura/inshidiprozdily/tsentr-innovatsiinykh-osvitnikh-tekhnologii-icr-klas.html> within the studied disciplines under educational programs. For example, trainings on the development of emotional stability in future teachers have become traditional on the basis of the Self-

Knowledge and Self-Development Center. In the course of such trainings, students self-assess their own emotional stability, using the Mentimeter online service to create a psychological portrait of an emotionally stable person. It is important that during the training, which is conducted online using the Google Meet service, students master techniques and exercises that enable them to stay in the resource, view and analyze thematic videos, and engage in activities that correspond to their values. It is important that future teachers transfer the acquired experience regarding the formation of emotional stability to work with preschool children and elementary school students during practice.

When preparing projects, students have the opportunity to familiarize themselves with and try out various technologies, to choose the ones that will suit each one individually due to an individual and personal approach. Students also create and implement individual and group projects for the development of emotional intelligence. As a result of the students' work, the interdisciplinary project "Psychological hygiene of future teachers" was created, the goal of which was to form students of the first (bachelor's) level of higher education in specialties Preschool education and Primary education knowledge about psychological hygiene, its levels and methods; future teachers' awareness of the role of psychological hygiene in personal regulation of emotional states in the process of professional development.

Work in competence centers enables students to apply in the process of personal and professional development: innovative teaching methods: IBL, PBL, PrBL; integrated training and competency-based approach when implementing STEAM education; digital tools to support various types of student activities; forms of work in small groups, pair work; 5E model of research study; educational research projects with the main stages of research; formative assessment technologies; the basics of questioning technology; flipped classroom and blended learning technologies; virtual and augmented reality software; methods and techniques for the formation of critical thinking, algorithmic and computational thinking; LMS Moodle; various digital tools for the formation of life and digital competences, the basics of entrepreneurial activity; educational materials and equipment for learning the basics of robotics, media literacy, 3d printing, and the basics of programming. While working on projects, students go through all stages of task performance technology, providing management of the emotional state,

subordinating emotions to the mind, promoting self-knowledge and self-realization through the enrichment of emotional and social experience.

The practices of psychological and pedagogical support of future teachers' personal and professional development described in the article are the result of an interim study conducted by a team of authors. The presented educational practices are aimed at achieving the goals of psychological and pedagogical support of future teachers' personal and professional development.

## Conclusions

The article highlights the experience of introducing digital technologies, tools and effective practices of psychological and pedagogical support of future teachers' personal and professional development in the conditions of distance learning into the educational process of a university. The issues raised in the article are caused by educational changes taking place in connection with the introduction of new educational and professional standards and systematic distance learning of students updated by the demographic, social, economic, and infrastructural changes of wartime Ukraine.

The architecture of the article is built according to the logic of the research, and its content contains the accumulated experience of the team of authors in the process of teaching integrated educational courses "Humanities", "Pedagogy", "Psychology" in a remote format on the Moodle platform, conducting lectures, trainings, business and role-playing games, scientific conferences. The content of the article is presented according to the components – separated (by competence, dynamic, intrapersonal criteria).

Effective practices of psychological-pedagogical support of future teachers' personal and professional development presented in the article are revealed in the context of professional training of preschool teachers and primary school teachers. The specified topic of the article is disclosed taking into account the organizational, technical-network, informational, programmatic and structural features of the functioning of the digital environment at the Borys Grinchenko Kyiv University, which ensures the establishment of systematic distance learning for students of higher education. The practices of psychological-pedagogical support of future teachers' personal and professional development highlighted in the article are the product of creative activity of researchers. From among a

number of technologies that are widely used in face-to-face and distance learning, the author's portfolio of personal and professional growth, which can be used to support self-evaluation and develop a trajectory of one's own (personal) development and self-development; conducting lectures, seminars, practical and laboratory classes on the basis of competence centers – the Center of Self-Knowledge and Self-Development, the Center of Innovative Educational Technologies (ICR-class), which operate at the Faculty of Pedagogical Education of Borys Grinchenko Kyiv University. Since the stated problem of the article is multifaceted, it needs further research and generalizations. The proposed practices can be adapted to the educational process (subject to distance learning) in other institutions of higher education in order to strengthen the components of psychological and pedagogical support of future teachers' personal and professional development.

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## Negativizing emotive coloronyms: A Kazakhstan-US Ethno-Psycholinguistic comparison

### Негативные эмоциональные цветные наименования: этнопсихолингвистическое сравнение Казахстана и США

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#### Abstract

Neurotargeting prioritizes emotions in understanding collective unconscious and individual behavior. Comparative emotive linguistics reveals cross-cultural emotional expression variations. Despite extensive emotion research, gaps remain due to differing response norms. Psychology understands emotions well, but lacks universal classification, hindering linguistic description. Confusion between emotion and emotive obscures psychophysiological and verbal distinctions. Nonverbal emotives, reflecting emotions, require analysis of generation and expression mechanisms.

This study examines color's role in conveying negative emotions in Kazakh writer A. Nurpeisov's "Blood and Sweat" and American writer T. Dreiser's "Trilogy of Desire." Authors use linguistic and nonverbal methods to portray emotions. Hypothesis: color as emotive state designation functions with "permissible-unacceptable" and "good-bad" evaluations, evident in shaping emotional reality perception. Analyzing coloristic negative emotives uncovers ethno-cultural

#### Абстракт

Нейротаргетинг придает эмоциям первостепенное значение в понимании коллективного бессознательного и индивидуального поведения. Сравнительная эмоциональная лингвистика раскрывает вариации выражения эмоций между культурами. Несмотря на обширные исследования эмоций, существуют пробелы из-за различий в нормах реакции. Психология хорошо понимает эмоции, но отсутствует универсальная классификация, затрудняющая лингвистическое описание. Путаница между эмоцией и эмоциональным выражением затмевает психофизиологические и вербальные различия. Невербальные эмоции, отражающие эмоции, требуют анализа механизмов генерации и выражения.

В данном исследовании изучается роль цвета в передаче негативных эмоций в произведениях казахстанского писателя А. Нурпеисова "Кровь и пот" и американского писателя Т. Драйзера "Трилогия желаний". Авторы используют лингвистические и невербальные методы для изображения эмоций. Гипотеза: цвет в качестве

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metaphorical models, connecting emotive coloronyms with basic emotional concepts. Findings aid standardizing cognitive mechanisms for understanding mental experiences and comparative emotive linguistic terminology.

**Keywords:** negative emotion, color, emotive, emotive coloronym, artistic text, psycholinguistics, different structural languages.

## Introduction

Different ethno-linguistic cultures develop their own standard of color perception, which affects the psycho-emotional state of a person (Rathod, 2014; Sutton, & Altarriba 2016). At the same time, the verbalization of these states is conveyed by various concepts that can make up the repertoire of emotives assigned to a particular emotion (Antipenko, 1995; Dupina et al., 2013; Monastyrskaya, 2008; Osintseva, 2019). This separation between the verbalization of negative emotions and the emotion itself began to occur only now (Shamay-Tsoory et al., 2014; Stefansky, 2009; Tokareva, 2021, Rong, 2021), which puts the task of distinguishing emotives, terminological apparatus, classification parameters in the first place in modern research.

Emotivity colors our life, creating a variety of coordinate systems for regulating the ethnosociocultural behavior of an individual in a particular society. Censure and/or approval were and remain powerful tools for the formation of a person's speech and behavioral matrix (Jensen, 2014; Ruan, & Karabulatova, 2021; Shakhovskiy, 2018; Zhang et al., 2023).

Emotive linguistics originates in the works of V.I. Shakhovskiy (2019), starting from the understanding that emotions are an important component of the mind, the linguistic consciousness of a modern person belonging to a certain linguistic culture. The emotional experiences presented in the language are understandable for one particular language (Ulyanova, 2011). Emotions are inherent in the specific national experience of this people (Shakhovskiy, 2019). A person reflects the world, and emotions serve as an intermediary between the world and its reflection in language. It is

обозначения эмоционального состояния функционирует с оценками "допустимо-недопустимо" и "хорошо-плохо", что явно видно в формировании восприятия эмоциональной реальности. Анализирование цветовых негативных эмоций раскрывает этнокультурные метафорические модели, соединяющие цветовые эмоциональные обозначения с основными эмоциональными концепциями. Полученные результаты способствуют стандартизации когнитивных механизмов понимания психических переживаний и терминологии сравнительной эмоциональной лингвистики.

**Ключевые слова:** негативная эмоция, цвет, эмотив, эмотивный колороним, художественный текст, психолингвистика, разноструктурные языки.

difficult to adequately describe the language system without taking into account people's emotions. Emotional states and relationships are directly related to the assessment and understanding of reality. A person experiences different emotions, so they feel in the process of forming a linguistic picture of the world. In this process, language is a means of reflection, and emotions are a form of reflection of reality.

According to researchers like A. Yu Vychuzhanina, N.A. Krasavskiy, V.I. Shakhovskiy, it is necessary to appreciate the importance of human emotion in linguistic works. The linguistics of emotion has made a huge contribution to solving the problems of emotivity, emotive semantics, classification of emotional vocabulary, etc. Emotions have been repeatedly investigated in this direction. For example, in the dissertation work of A.K. Kalzhanova, the relationship of emotive language means and color designation in different structured languages was described (Kalzhanova, 2004). H.M. Nurmukanov devoted his work to the study of emotionally expressive words of the Kazakh language (Nurmukhanov, 1969).

Currently, works devoted to the study of emotional vocabulary in a comparative-contrastive aspect are becoming especially in demand (Lin et al., 2021; Qin et al., 2022). According to the theory of the psychological basis of emotions, all speech acts are emotional. Recently, researchers have found that emotional information can be transmitted through color-expressing language units. The color-emotion ratio has not gone unnoticed by researchers. It is relevant to identify and study the role of color

values in the expression of emotions. A number of research papers are devoted to this issue. For example, N. A. Bagdasarova studied the mechanisms of emotion formation in her dissertation "Lexical means of expression of emotions in the context of different cultures" (Bagdasarova, 2004). In particular, a decrease or increase in body temperature and the use of color for its description (based on materials in English and Russian).

According to the author, a drop in body temperature is associated with words and phrases that contain certain emotions and semantics of the word "cold". The increase in temperature is expressed by color markers. For example: blood stinks in the living quarters, get rid of grief, get better. Changes and deviations that occur in the human body under the influence of emotions are directly reflected in the emotional language units. She suggested that an increase or decrease in body temperature is caused by emotions such as fear, anger, and jealousy (Bagdasarova, 2004). N. A. Krasavsky considered the compatibility of the name of emotions and color names on the basis of materials in Russian and German (2011). According to the author, the conceptsphere of emotions and colors is ontologically related to each other. This is because both different emotions and colors have both positive and negative signs. Modern onomastics considers color designations under the term *coloronym* (Borisova, 2008). Previously, instead of the term "*coloronym*", such terms as "*colour name*", "*colour naming*" were used, which are found in the works of R. M. Frumkina (1984), A.P. Vasilevich (1987). In foreign linguistics – "*colour naming*" (Mylonas, & MacDonalds, 2012). According to psychologists, the mental stress experienced by a person can be divided into positive or negative ones.

That is, a person constantly strives to evaluate the phenomena that occur in the environment. In associative psychological studies, it is established that colors have an evaluative value. This also happens in the language. For example: *gray days*, *schwarze Gedanken*. In addition, the author also pays attention to the dictionary definitions of colors in his article. In the dictionary definitions themselves, you can see that colors have a positive or negative semantic coloring. The author gives an example of the word black (the name of the color): "Black - trans. Gloomy, bleak, malicious, criminal" (Krasavsky, 2011).

Kazakh linguists (Pansat, & Khalikova, 2023), addressing the problem of the interaction of color

and emotion, argue that a person's internal emotions, conveyed in texts through color characteristics, act as a powerful ethno-linguistic and cultural means of psycho-emotional comprehension to enhance the expressive effect of influence on the recipient.

A new stage of research in the terminology of emotive coloristics is associated with the actualization of cognitive linguistics, which not only emphasizes the role of color in cognition of the world, but also explains the importance of color in the linguocognitive mechanisms of visual perception of objects. Cognitive linguistics is based on the results of psychological studies, which reveal a rigid "fixation" of a particular emotion on a certain color (Basin, & Krutous 2007; Berdnikov, 2004; Sycheva, 2016). Thus, emotions belong to the sphere of psychological concepts, being the basis of emotional concepts. Emotional concepts, in turn, make up an emotional picture of the world. The emotional picture of the world is understood, following N. A. Krasavsky, as "a set of emotional representations, emotional concepts transmitted by individual concepts" (Krasavsky, 2008: 18). At the same time, the emotional picture of the world, acting as an evaluative reaction of human consciousness when mastering the world, correlates with the emotive linguistic picture of the world, which is verbally realized in emotives. The emotive is a linguistic unit of the emotive picture of the world, performing both the function of expressing the emotions of the producer/addressee and the function of emotional impact on the recipient/ addressee (Ulyanova, 2011). The lability of the boundaries of emotion and its verbal expression has caused misunderstanding of the phenomenon of emotion and its verbalizations.

### Materials and methods

In our article, we will look at emotions in the artistic text and ways to convey them in the text. The reason for considering a literary text is that fiction presents a wide variety of emotional situations, describes the verbal and nonverbal emotional behavior of the characters and the type of communication. In this sense, fiction is a very valuable treasure (Shakhovskiy, 2008: 187). At the same time, emotions have certain characteristics for representatives of each nation. The cultural features of the expression of each emotion are evaluated and understood differently by representatives of different cultures. That is, it depends on the environment in which each nation was born, national history and values, etc. We used lexicographic sources, methods of analysis

of dictionary definitions of emotions in order to identify ways of transmitting emotions through colors in Kazakh and English. In this article, we will analyze the ways and methods of color transmission of negative emotions in an artistic text. In particular, we can consider the negative emotions expressed in the works of the great Kazakh writer, translator A. Nurpeisov "blood and sweat" (Ymyrt, Sergelden, Kuyreu) and the American writer, publicist and novelist, public figure T. Dreiser "Trilogy of Desire" (The Financier, the Titan, the Stoic).

The analysis of emotional states in these literary texts is based on the traditional classification of emotions (Ekman, 2017) in comparison with pre-selected material about experiences significant for literary heroes. In the proposed classification of negative emotive coloronyms, only those speech models that clearly convey the negatively colored component of emotion with the fixation of the color of emotional experience are taken into account.

The main basic emotions are distributed along the poles of the maximum rating from plus to minus (Izard, 1999), while the very division into positive, neutral and negative emotions is relative. Thus, *anger* refers to negative emotions, but a positive connotation is found in the characteristic "*righteous anger*". At the same time, the emotion *joy* characterizes, as a rule, a positive psycho-emotional state, but the expression "*frenzied joy*" contains a negative meaning. In addition, such an emotion as *surprise* has an ambivalent character without a clear link to the negative or positive pole of the emotional reaction to the suddenness, spontaneity of certain circumstances. In this regard, the classification of emotions, as well as the assessment of psycho-emotional states can change both within one ethno-linguistic culture and beyond.

Verification of emotional experiences mentioned in the works of T. Dreiser and A. Nurpeisov is based on 10 groups of emotions identified by B. I. Dodonov (1987), based on pragmatics (tabl.1).

**Table 1.**

*Verification of emotional states in the literary texts of T. Dreiser and A. Nurpeisov based of works by B. I. Dodonov, 1987.*

| Verification of emotional states in the literary texts of T. Dreiser and A. Nurpeisov |  |   |
|---|--|---|
| 1   | Altruistic emotions                            | they realize the basic needs of a person in assistance, assistance, patronage to other people   |
| 2   | Communicative emotions                         | the need for communication  |
| 3   | Glorious emotions (from lat. gloria – glory)   | They are conditioned by the needs for self-affirmation, encouragement, fame. Basic type of emotional situation: real or imaginary "reaping laurels" |
| 4   | Praxic emotions                                | The need for activity, assessment of its success/failure  |
| 5   | Pugnic emotions (from Latin pugna – struggle). | Basic needs: overcoming danger, overcoming certain "boundaries", on the basis of which there is an interest in fighting                             |
| 6   | Romantic emotions                              | Basic frailties: the desire to comprehend the mystery, the sacred, the hidden, everything unusual, extraordinary, inexplicable                      |
| 7   | Acquisitional emotions                         | Basic needs: accumulation and hoarding, acquisition, "collecting" of objects, etc.  |
| 8   | Hedonistic emotions.                           | Basic needs: bodily, mental comfort, enjoyment  |
| 9   | Gnostic emotions and/or intellectual feelings  | Basic needs: satisfying the "information hunger", obtaining any new information, achieving "cognitive harmony"                                      |
| 10  | Aesthetic emotions                             | Basic needs: finding a person in harmony with himself and the world around him  |

The interpretation of linguistic expertise of a literary text for the determination of categorical characteristics of emotions requires the use of such a gradation. Conducting free and directed associative experiments in multilingual cohort groups of students from Kazakhstan, Russia and China allowed us to determine that the basic emotions are perceived by the absolute majority of respondents in the standard response system:

positive, negative and neutral. The emphasis on the color characteristic of emotion gave reason to operate by dividing into positivizing emotive coloronyms and negativizing emotive coloronyms for the linguistic description of emotive states in a literary text. A distinctive feature of emotive coloronyms is the absence of neutral coloring when using the color characteristic of emotion.

These metaphors of emotion blocks are considered through the prism of the so-called "color circle" (Itten, 2019), thanks to which there is a relationship between the perception of color and emotion.

This important problem requires a consistent solution of tasks such as: 1) to clarify the conceptual and terminological apparatus for this work; 2) to compare the symbolism of color in the Anglo-American and Kazakh linguistic cultures; 3) to study the representation of the standards of basic color meanings of negative emotions; 4) to consider emotive coloronyms with their lexical and semantic variants according to the explanatory dictionaries of English, Russian and Kazakh languages to identify universal and idioethnic; 5) conduct directed and free associative experiments with Kazakh-Russian-English polylinguists in order to model the associative fields of the main color meanings of negative emotions; 6) create an architecture of language models aimed at reconstructing the content of the basic concepts of color presented in the idiolects of T. Dreiser and A. Nurpeisov, in conjunction with negative emotives; 7) carry out clarifying verification universal and ethno-psycholinguistic features of the studied negative emotive coloronyms.

These tasks are solved by using the method of modeling emotive concepts and conceptual analysis in order to identify the features that form the structure of the concept, taking into account

their classification, integration and post-interpretation. In addition, an important place is occupied by directed and free associative experiments in order to determine the psycho-emotional potential of emotive coloronyms of the negative spectrum in the idiolects of T. Dreiser and A. Nurpeisov. Since we are faced with the difficult task of making comparisons in the planes of different structural languages, it is seen as defining the definitional analysis of negative emotions and negative emotive coloronyms in English and Kazakh with access to the conceptual analysis of emotives.

## Results

There is no single emotional base between psychologists and psycholinguists. P. Ekman (2017) identifies six basic emotions (happiness, surprise, hate, fear, sadness, anger), while the famous psychologist K. Izard (1999) shows 12 basic emotions based on them. The more elements are included in the definition of a psychoemotional state, the stronger the emotivity of the experience is transmitted in the text, which makes it possible to more clearly verify the emotion to the recipient of this text. Since, the science that studies the problem of emotions does not have a stable list of basic emotions, we decided to consider the negative emotions and colors that we encountered more often in our works of art. Emotions and colors are summarized in Table 2.

**Table 2.**  
*Color designation of negative emotions.*

| Negative emotions | Color designation                                      |
|-------------------|--|
| Anger, fury       | Black, blue, gray, red, pale, color change.            |
| Jealousy          | Red, yellow, black.                                    |
| Surprise          | Black, red, color change                               |
| Shame             | Black, red   |
| Hate              | Black, white, color change.                            |
| Fear              | Gray, blue, red, dark, fading, discoloration (shoots). |
| Sadness           | Black, color fading.                                   |
| Grief             | Gray, red, pale, color change                          |

Let's illustrate the data in the table with examples.

*Anger.*

1. Endy jengesine tipti oshigip aldy, kany kainap, kejdikke bitken kishkentai tomal kulaktyn ushy duyldap kyzara bastardy (Nurpeisov, 2004: 276). (*He was angry with his sister-in-law. His ears started to get red*)

2. *She moved toward the door; but Butler jumped up now and stopped her. His face for the moment was **flushed** and swollen with anger. (Dreiser, 2016: 477)"Why not?" inquired Hand, grimly and heavily, turning squarely about and facing him. "It doesn't appear that you have extended any particular courtesy to Hull or Stackpole." His face was **red** and scowling. (Dreiser, 2016: 343)*

## Jealousy

1. Adyra kalsyn! Keshe emes pe edy, seri jigit kelgende jeldey esip, ayagy ayagina timei ktkeny? Bir uiden kese, bir uiden tabak jiyp, esynyzdy alyp bitken jok pa edy? O, **juzikara! O, karabet!** (Nurpeisov, 2004: 20) (*Damn her! She said with hatred. As it was necessary to accept her dog, so she ran, bitch! From some asked a plate, others bowl. ran, bitch! And then it got heavier...*)
2. – Ne deidy? Kaynym – au, judyryktai baitaldyn nesin bolemiz. Ozim derbes alam – dep karakatyn kasynda turgan kisilerden kizgangandai, **ala** kozimen ata bastady. (Nurpeisov, 2004: 193) (*What? What's there to share? Karakatyn shouted. — And the filly is skinny, it's not enough for me!*)
3. **Her eyes blazed hotly, her color rose high and strong.** She breathed heavily.252 (Dreiser, 2016: 252)

## Surprise

1. She **flushed**, trembled, turned **pale**, in the grip of this strange storm, but drew herself together. It was wonderful—heaven. (Dreiser, 2016: 97)
2. She was strangely selfcontained, enigmatic, more beautiful perhaps because more remote than he had ever seen her before. In a strange flash this young American saw the isles of Greece, Cytherea, the lost Atlantis, Cyprus, and its Paphian shrine. His eyes burned with a strange, comprehending luster; his **color**, at first high, went **pale**. (Dreiser, 2016: 362)

## Shame

1. Elaman **kызарып** ketty. (Nurpeisov, 2004: 49). (*Elaman blushed*)
2. Slowly, in spite of herself, a telltale **flush** rose and mantled her **brown** cheeks. It always did when he looked at her. (Dreiser, 2016: 103)
3. She looked up, then arose—for he slowly drew her—breathless, **the color** gone, much of the capable practicality that was hers completely eliminated. She felt limp, inert. (Dreiser, 2016: 103)
4. Since it has not, I merely wish to say to you"—and Mr. Haguenin's face was very tense and **white**—"that the relationship between you and me is ended. (Dreiser, 2016: 207)

## Fear

1. Ony Karatazdyn Baibishesi korip, ishke kiruge gana shamasy jetty. Tili kurmelip, oni kuaryp, juke arkasyn suiei tura kaldy. (Nurpeisov, 2004: 249). (*Karataz's baibishe saw him and only managed to get inside. Her tongue twitched, and she stood with his back to the truck.*)
2. Bayagy kip-kishkentay kezinen bastap ozi jaksy biletin katal akenin ak kirpigi, kizil kozi, kaysi birde oz ozinen otirip oskirinip kalatyn yzaly ashi miskili sesine tusedi de, tagy da tusi demde buzzilip, dir-dir etip kaltyrap koya beredi: "Kudai-ai, ozin koldai gor. Jerge karap kalmasam kaitsyn..." (Nurpeisov, 2004: 305). (*She remembered her father's inflexible, tough temper, remembered his white eyelashes, red eyes, his snorting, his venom, and again fear entered her soul. "Oh God, help me, don't leave me! I'm afraid... It's scary!"*)
3. *But I'm doing a great deal," she replied, softly, a little breathless and a little pale.* (Dreiser, 2016: 98)
4. *He was cogitating as to what might happen to him in case his son failed, for he was deeply involved with him. He was a little gray in his complexion now, frightened, for he had already strained many points in his affairs to accommodate his son.* (Dreiser, 2016: 271)

## Grief

1. Akbala **kup-ku**. Kany kashkan **bop-boz** erin dirildep, oksik kyskan kokirek koterilip-basylyp, koz toil jas moltildep omirauina tamdy (Nurpeisov, 2004: 378). (*Akbala turned pale. The pale lips were trembling, and her breasts rose and fell, and her eyes filled with tears.*)
2. Asirese, dal osyndai olik shigip, el – jurt zy-shu bop jatkada, kozinen jas, oninen **kan kashyp sup-sur** bop alatyn-dy (Nurpeisov, 2004: 58). (*Especially when such a corpse comes out, and the people are noisy, there were no tears in his eyes and he was pale.*)
3. *His fat, white lips were trembling--wabbling nervously--and big hot tears were coursing down his previously pale but now flushed cheeks.* (Dreiser, 2016: 339)

## Sadness

1. Akbala tagy da jabyrkap, bet-oninin boiaui onip sala berdi. "Kelmeitin shygar ...." – dep oilap, munaiyp turgan ustinen kara sur baybishe kirip keldi (Nurpeisov, 2004: 306).



(Akbala blinked again, and the color of her face faded. She thought they wouldn't come anymore, a dark-gray woman stepped in.)

2. "You had better go on out to the house, father, and I'll send some telegrams." (The telephone had not yet been invented.) "I'll be right out and we'll go into this thing together. **It looks like black weather to me.** Don't say anything to any one until after we have had our talk; then we can decide what to do." (Dreiser, 2016: 261)

These patterns are based on the works of classical writers of Kazakh and English languages. Although Kazakh and English are different in structure and genetically distant languages, both languages are widely used to express emotions in color. So, we found that in literature, authors use different colors to express the same emotions. For example, in Kazakh, the author used red to represent emotions of embarrassment, in English-white.

In works of art, authors use various language tools to convey the feelings and emotions of the characters to readers. N. F. Ezhova suggests 4 types of use of various language tools for the purpose of expressing emotions (Ezhova, 2003). The first is a nominative – descriptive type. In this form, the author also uses language units to describe the gestures and facial expressions that accompany these emotions with a specific word that expresses emotions.

1. Akbala tagy da jabyrkap, bet-oninin boiaui onip sala berdi. "Kelmeitin shygar ...." – dep oilap, munaiyp turgan ustinen kara sur baybishe kirip keldi (Nurpeisov, 2004: 306). (Akbala blinked again, and the color of her face faded. She thought they wouldn't come anymore, a dark-gray woman stepped in.)
2. *But Stener was so frightened that at the moment it looked as though there was little to be done with him. His face was a grayish-blue: his eyelids and eye rings puffy and his hands and lips moist* (Dreiser, 2016: 318)

In the examples above the authors further refine their emotions by describing the changes in the characters facial expressions using the words sadness and fear directly, the color of the face has faded, and using words and phrases such as *jabyrkap bet-oninin boiaui onip, His face was a grayish-blue: his eyelids and eye rings puffy and his hands and lips moist.*

The second is a characteristic type. Language units that describe certain feelings and emotions

are used here. The names of emotions are not found in the text. For example:

1. Asirese, dal osyndai olik shigip, el – jurt zzy-shu bop jatkada, kozinen jas, oninen **kan kashyp sup-sur** bop alatyn-dy (Nurpeisov, 2004: 58). *Especially when such a corpse comes out, and the people are noisy, there were no tears in his eyes and he was pale.*
2. *I'm not strong enough. If they didn't know, if you hadn't told them, it might be different, but this way--" He shook his head sadly, his gray eyes filled with a pale distress.* (Dreiser, 2016: 319)

Without giving emotional names in these examples, the authors try to describe the emotions and feelings of the characters as best they can through various language tools. In these examples, the rhythm of the voice is also important. It is not difficult to see emotions in phrases such as: *zzy-shy bop, kozinen jas, oninen kan kashyp sup-sur bop alatyn-dy, not strong enough, If they didn't know, He shook his head sadly, his gray eyes filled with a pale distress*

The third is a nominative type. This type is distinguished by the use of language units that express them, including the name of feelings and emotions.

1. *Her face paled slightly as she read it; and then her hand trembled--not much. Hers was not a soul that ever loved passionately; hence she could not suffer passionately. She was hurt, disgusted, enraged for the moment, and frightened; but she was not broken in spirit entirely.* (Dreiser, 2016: 382)
2. Tanirbergen mirs etti. Ademi betine ashy miskil shauyp, ishte jatkan yza men yzgardy tsnytyp sup-sur bop sustiya kaldy (Nurpeisov, 2004: 294) *(Tanirbergen muttered. A bitter smile spread across his beautiful face, revealing the anger and rage that lay inside him)*

The expression, taken from the work of T. Dreiser, clearly describes the changes in the character's face and inner feelings. In addition, the emotion born from feelings is expressed. In the following example, A. Nurpeisov concretizes the emotions of anger by transmitting the feelings and emotions of the hero through changes in movements and facial expressions.



Fourth, it is the use of language units expressed in all 3 types. This type gives a complete description of emotions. For example:

1. *She paused for a moment, uncertain how to take this, the while she whitened, grew more tense, more spiritual than she had been in many a day. Now she felt desperate, angry, sick, but like the scorpion that ringed by fire can turn only on itself. What a hell life was, she told herself. How it slipped away and left one aging, horribly alone! Love was nothing, faith nothing—nothing, nothing!* (Dreiser, 2016: 402).
2. *Jasaganbergen yzalana kuldi. Algi jas jigittin ileli judeu juzine kaita teuip, du etip kizara tusti de, lezde bozardy* (Nurpeisov, 2004: 172). (*Zhasaganbergen laughed angrily. The young man's anger returned to his face, turning red and instantly got pale.*)

The emotions expressed in the examples are not only clearly expressed, but also transmitted through different language units. In the examples analyzed in all forms, colors that express and characterize negative emotions are widely used.

As empirical material shows, the use of color characteristics to define a negative emotion occurs through its metaphorical designation. Metagraphs (Pic. 1) of negativizing emotive coloronyms are based on such conceptual ontologies as "The human world", "The Objective world", "The Natural World", demonstrating the complex nature of the relationship of these spaces with each other in the internal picture of the world of a native speaker.

At the same time, the persuasive potential (Clark, 2009) transforms the conceptual value matrix (v1- v5) of the target audience through a multimodal presentation of information with a complex structure architecture (mv1, mv2). In this regard, there is a need to improve the methodology of the analysis of meanings, based on semantic networks, frames, semantic networks, production rules, which in one way or another have a limited character. Concept graphs are a network of interconnected memory traces, the relationships between which can be identical, shared or completely separated. The use of a system of complex metagraphs, in our opinion, allows us to combine the achievements of various ideas about emotion in an interdisciplinary way using machine learning methods and intelligent systems.

The metagraph approach (Gapanyuk, 2019) seems promising in the verification of emotive

coloronyms, since it allows us to consider the network of emotive experiences not only in the form of "horizontal" layers, but also in the form of "vertical" columns through color-visual characteristics. Thus, the ambivalence of emotions is organically "embedded" in a multidimensional metagraph model of emotions and emotive vocabulary. In this regard, it can be assumed that each fragment of the metagraph contains vertices/ or metaverices (v1-v5) that act as "reference" nodes of both the process itself and the connections of "edges" (e1, e2, e3, e4, e5, e6), thanks to which a new meaning formation occurs using the parameters of conceptual ontologies (Pic.1). The above analyses of emotives as verbalizers of emotions act as simpler edges in the metagraph.

For example, the relationship between the neuro-psycho-physiological characteristic of emotion and its verbal expression, developed by H. Lövheim (2012), can also be inscribed in a polycode multimetagraph model of emotive vocabulary within the framework of the ethno-linguocultural picture of the world of a native speaker.

W. Levelt's psycholinguistic model of speech reproduction presents language output as an extensive system of processing modules working independently of each other (Levelt, 1999), representing two complex metagraphs: 1) rhetorical/semantic/syntactic metagraph; 2) phonological/speech metagraph. The rhetorical/semantic/syntactic metagraph is responsible for conceptualizing the speaker's intentions and mapping them to the surface structure of words, and the phonological/phonological metagraph contains a set of articulatory instructions for expressing the surface structure and transmits them to the articulatory system for execution.

The multidimensional-metagraph model is dynamic due to the inclusion of polycode scaling parameters with an emphasis on a variety of measures and measurements (MVe), facts and features, aggregation rules and metagraph processes (MV<sub>s</sub>, MV<sub>i</sub>). As a result, the resulting metahedron can be described using recursion, since it allows you to detail a fragment of a metagraph through nested metaedges (Pic. 1). A given vector of decoding an emotive coloronym can be presented as a directed message for a potential recipient, based on the universal experience of the collective human unconscious, the ethnosociocultural tradition and the individual picture of the addressee's world (Pic.1).



preserving topological relations for subsequent in-depth analysis without converting the structure into a numerical vector and without losing implicit cognitive-pragmatic patterns in the works of T. Dreiser and A. Nurpeisov.

The main characteristic features of A. Nurpeisov's trilogy "*Blood and Sweat*" are traditionalism, variability, polyelement, polyfunctionality and orientation to the folklore tradition of transmitting information with the help of "*uzun kulak*"/ "*long ear*" (the so-called steppe mail - I. B., etc.), which brings this work closer to such genres of Kazakh folklore as *tolgau* (lit. reflections), in which *zhyrâu* (folk singers, storytellers) narrated about the past history, great people of the people, etc.

The color characteristics of the emotive perception of reality illustrate the specifics of immersion into the inner world of the writer, which allows you to show new accents of perception of yourself and reality: vanity, deprivation and hardships of life, awareness of the chthonic end and the proximity of death, acceptance of your own physical weakness and your loved ones, devaluation of the importance of social rules in the collapse of the state system, awareness of the importance of harmony with by yourself and nature, etc. Currently, the experience of emotional and evaluative perception of life, presented by T. Dreiser and A. Nurpeisov in his novels is important due to the fact that the global geopolitical cataclysm forces us to reconsider the culture of relationships with ourselves and the world, relying on the achievements of ethno-linguistic and

confessional cultures (Qin et al., 2022; Munnes et al., 2022). In this regard, such ethnolinguistic cultures, complex in their ethnogenesis (as Kazakh and Anglo-American), are beginning to be characterized from the mythological and mystical positions of Christianity and Islam. As a result, the aura of sacredness in the everyday permeates both works under consideration, forming a mysterious mixture of pagan, Muslim and Christian views in the literary and artistic picture of the world by A. Nurpeisov and T. Dreiser.

Both writers gravitated towards a naturalistic representation of reality in their novels, using color markers of attribution of emotion. So, sadness, depression, prostration is conveyed by A. Nurpeisov in the novel "*Blood and Sweat*" through the perception of the steppe through the eyes of the protagonist, who sees only the "*gray-brown spots*" of grazing sheep dusted with steppe dust. It should be noted that psychophysicists point out that the very excitability of the emotionogenic structures of the cerebral cortex depends on the form of external behavior, while the ratio of the level of excitability of emotionally positive and negative brain waves correlates the direction of behavior (Slezin, 1989). It is no coincidence that I. V. Kalita (2017) emphasizes that gray color characterizes a negative spectrum of emotions: from mild rejection to deep depression.

The presented table allows us to consider the common markers of negative emotional evaluation in the novels of T. Dreiser and A. Nurpeisov (Table 3).

**Table 3.**  
*Linguocolor comparative characteristic of negative emotions*

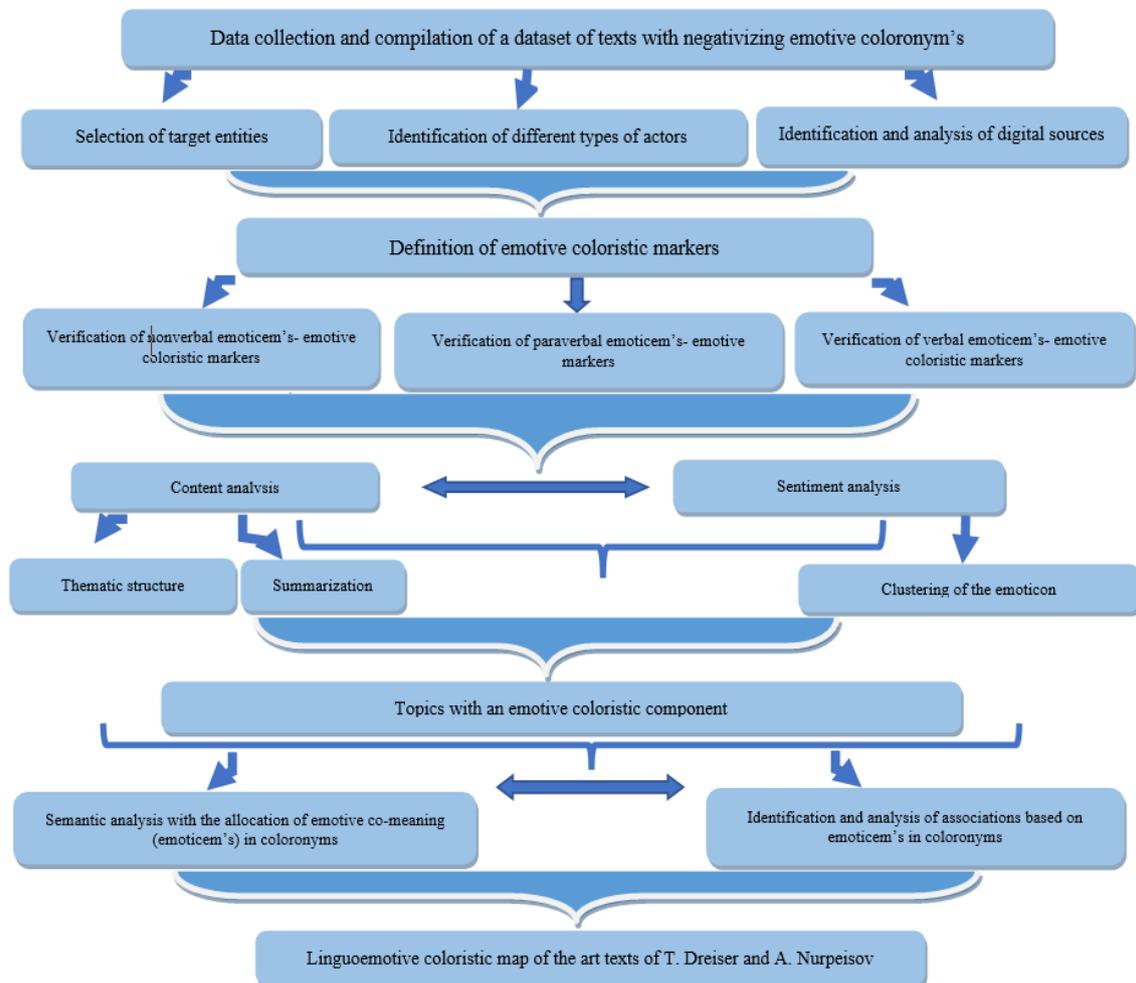
| No | Name of the negative emotion | Emotive coloronym  | realization                                    | T.Dreiser   | A. Nurpeisov  |
|----|------------------------------|--|--|---|---|
| 1  | indifference                 | <b>indifferent red steppe</b><br><i>Clyde: white, glam. seemingly indifferent.</i> | Communicative emotions                         | <i>Clyde was white and glam. He stood to one side, seemingly indifferent.</i>                 | <i>The indifferent red steppe sleeps, it says nothing to the lonely rider.</i>  |
| 2  | Anger                        | <b>merciless clarity, red and black dress with a very dark red poke</b>            | Pugnic emotions (from Latin pugna – struggle). | <i>She had come garbed in a red and black dress with a very dark red poke bonnet to match</i> | <i>I was still quite a boy, but with a child's merciless clarity I realized how hard her life was... her young rival... drove her out of the house.</i> |
| 3  | Jealousy                     | <b>her color rose high and strong.</b><br><i>Karakatyn</i>                         | Romantic emotions                              | <i>Her eyes blazed hotly, her color rose high and strong. She breathed heavily.</i>           | <i>What? What's there to share? Karakatyn shouted. — And the filly is skinny, it's not enough for me!</i>   |

Color occupies a key position in the construction of detailed associative connections in a literary text, since color is one of the most common semiotic systems and has a significant cultural and symbolic meaning (Itten, 2019). A. Nurpeisov widely uses the technique of color painting, with which he describes the emotional perception of reality, creating an individual image of the steppe in the perception of the linguistic color palette of the feelings of the heroes: *The indifferent red step sleeps, it says nothing to the lonely rider* (Nurpeisov, 2004: 32). From this expanded metaphor, it can be seen that the color characteristic has not only the traditional nominative function of color designation, but also performs an emotionally expressive function. Before us is an overlay of two images: steppe grass acquires a red color in autumn. In Anglo-American linguoculture, it is the color of gold and wealth. However, in the steppe Kazakh culture, it is a sign of the approaching winter, as well as a symbol of an unfriendly neighbor with blond hair based on the "friend – stranger" dichotomy, so here the

definition of "indifferent" is: the steppe is red and indifferent. At the same time, T. Dreiser's intactness, indifference has a white color, which is due to the fact that people turn white at the moment of fainting and loss of consciousness: *Clyde was white and glam. He stood to one side, seemingly indifferent* (Dreiser, 2016: 23).

The classic dyad of life and death in is transmitted through red and black, where black symbolizes death with the collapse of all the hero's hopes for happiness (Dreiser, 2016: 410-411). T. Dreiser dresses nature in black on the day of Roberta's death as if in mourning. Also, Clyde's nightmares, which signify imminent misfortunes, are painted in an oppressive black palette.

Automatic determination of the emotive tonality of texts with linguocolor comparative characteristic of negative emotions is a step-by-step work of experts and artificial intelligence. This algorithm is presented in the form of the following author's scheme (Pic.2).



Pic.2. Structure of the Emotive coloristic map of the art texts of T. Dreiser and A. Nurpeisov.

Thus, the presented architecture of the linguo-emotive map of texts with coloristic emotives acts as a hierarchically complex metagraph of psycho-emotional and symbolic-semiotic effects on the recipient, which are realized at the verbal level (directly through the word), at the nonverbal level (color symbolism in the characteristics of objects and subjects, acting as an evaluative marker with an additional emotive meaning) and at the paraverbal level (for example, intonation and tempo-rhythmic drawing of a literary text, highlighted by the author's punctuation marks and graphons), which all together organizes a system of polyvariant emotive coloronyms in the mental internal map of the producent and recipient (Pic. 2). The use of a coloronym as a marker with an additional emotive meaning strengthens archetypal ideas about the world, reproducing myths in the consciousness of a modern native speaker of language and culture. Emotion, with its not fully understood mechanism of regulation and influence on the speech-teaching profile of an individual, acts as the realization of the actions of some deity and/or spirit. In this regard, the coloring of emotion illustrates the operation of the law of cause and effect with an emphasis on the unconscious mythologeme of the archeohistory of the origin of emotional response: "Once a supernatural being performed a certain action for the first time, and since then this event has been repeated identically" (Hübner, 2004: 122).

Based on the definition of the character of coloronyms with an emotive negating meaning in the literary texts of T. Dreiser and A. Nurpeisov, we come to the conclusion that the color designations of negative emotions are a kind of emotive concepts as ethno-socio-culturally conditioned linguistic formations. Their ethno-sociocultural conditionality is formed specific socio-cultural, ethno-psycholinguistic standards and rules of a particular community that make up the ethno-cultural value code, which includes traditions, customs, peculiarities of everyday life, stereotypes thinking, mores and behaviors.

## Discussion

The terminological apparatus of emotive comparative ethno-psycholinguistics is currently undergoing a stage of rapid formation (Berdnikov, 2004; Dael et al., 2020; Jensen, 2014; Rathod, 2014; Kalita, 2017). Only recently, researchers have begun to distinguish between the psychophysiological state of emotion and verbal attribution of emotional experience (Basin, & Krutous, 2007;

Shakhovskiy, 2018). The complexity of the spectrum of psycho-emotional states experienced predetermined the use of color verifiers in determining the shade of feelings and emotions. In this regard, the analytical analysis presented by D.N. Borisova (2008) is interesting in the article "On the problem of choosing the term color for the name of forms of color designation in the language". Within the framework of our research, it is significant to analyze studies devoted to the consideration of words and expressions that are assigned to the designations of color shades in various languages, with the identification of five trends in the terminological description of lexemes with a coloristic component and the development of unified methods of terminological nomination in this area: *color designation*, *color name*, *color term*, *chromatonym*, *coloronym* (Borisova, 2008: 36).

As L.A. Kalimullina clarifies, color designations are "adjectives denoting color, formed from the names of various objects of the surrounding reality and having a pronounced etymology" (Kalimullina, 2004: 5). At the same time, the term "*color designation*" is not universal. Along with it, synonymous terms such as "*colour naming*" (Watts et al., 1986), "*color adjective*" (Ishmael, 2015), "*color vocabulary*" (Berdnikov, 2004) or "*colorative*" (Perfilova, 2014), and "*coloronym*" (Polyakova, 2013) are used. Thus, there is currently a discrepancy in the choice of a single term for the designation of tokens with the meaning of color and its shades. At the same time, it is immediately emphasized that coloronyms are metaphorical and anchored to a particular emotion (Kalita, 2017; Jonauskaitė et al., 2020; Vychuzhanina, 2009). Interest in the psycho-emotional component of color also led to the expansion of the terminological apparatus of the coloristic repertoire (Mylonas, & MacDonald, 2016).

Numerous theories interpreting the meaning of color are based on the universal psycho-emotional co-values of the color spectrum that affects a person. At the same time, to date, one of their most famous remains the theory of B. Berlin and P. Kay, which is aimed at finding universal patterns in the evolution of color terms (Berlin & Kay, 1969: 45). The main place in this theory is occupied by the concept of basic color naming ("Basic color term"). The authors have identified 11 terms of color designations that are universal in most languages of the world.

Our work shows that despite the presence of universal meanings (such as: red is a struggle, life, and black is death), there are obvious



discrepancies with the traditional perception of color in the artistic paintings of the world of Kazakh and American writers, which is due to the specifics of the representation of author's emotions in a literary work. For example, the green color in T. Dreiser's works is ambivalent in its emoticems, being used both as a symbol of reborn life (which coincides with the ancient Turkic interpretation of green, which has been preserved in the Kazakh language), and as a sign of impending trouble, since in American culture green is a symbol of greed, disease and jealousy, since it was noticed that mold and any rotting organic remains and/or waste also have a green color. Hence, the green color can be associated with corruption, witchcraft, malice, envy, corruption, disgust, madness and chthonic horror: "*The decadent and weird nature of some of the bogs and tarns on either side of the only comparatively passable dirt roads <...> strewn like deserted battlefields with soggy and decayed piles of fallen and crisscrossed logs <...> in the green slime that an undrained depression in the earth had accumulated. Only - only - these tall, dark, green pines - spear-shaped and still, with here and there a dead one - ashen pale in the hard afternoon sun, its gaunt, sapless arms almost menacingly outstretched*" (Dreiser, 2016: 108).

A. Nurpeisov, in the very title of his trilogy, uses the iconic lexeme "blood", which is a universal symbol and cult status in all languages and cultures (Savchenko, 2010), therefore, the color of blood (as well as its symbol – red paint) became, apparently, one of the first basic colors that mankind got acquainted with in archaic times (Rogalevich, 2004: 194). The word "sweat" forms an antonymic pair to the lexeme "blood", which has long been stigmatized in Western culture due to an unpleasant smell and ethno-cultural trauma due to the epidemic of the so-called "English sweat" (Heyman et al., 2018). In Kazakh linguoculture, increased sweating in men symbolizes high physical achievements, strength, fortitude, masculinity (Kaskabasov, 2014).

The symbolism of the blue color is due to the obvious observation of the blue of a cloudless sky in good weather. In this regard, the sacralization of the blue color occurred in the mythologized consciousness of the individual, thanks to which the sky in all cultures is associated with the world of spiritual and/ or sacred support, the place of the presence of gods and spirits, angels, heroes and ancestors. In this regard, the experience of divine ecstasy, elation, related to *Gnostic emotions*, is associated with

the blue color. Clyde's inner state, his soul, etc. Dreiser through the image of the crystal clear, bright blue water of the Chain River and the lake at the Cranston cottage, where Clyde spent time in love with Sondra.

However, the other polarity of blue is a dark blue color, almost turning into black. Therefore, the dark blue color acts as a sign of swirling darkness, fallen angels, danger. Hence the main symbol of dark blue is demonic evil. It is no accident that the waters of the ill-fated lake appear dark blue, almost black in T. Dreiser's reflection: "*The bright blue waters of the Indian Chain. The blue waters of this bright lake without as contrasted with the darker ones of Big Bittern. But just then a long aisle of green trees giving out at the far end as he now recalled upon a square of lawn, and the lake itself, the little inn with its pillared verandah, facing the dark blue waters of Big Bittern*" (Dreiser, 2016: 108).

At the same time, the coloristic thinking of Kazakhs defined light blue or bright blue, the heavenly color as a symbol of God-Heaven and his word manifested in color (Mazhitaeva et al., 2013). However, dark blue was not defined as a sign of the devil's powers, but as evidence of the wrath of the Heavenly Father. According to S. S. Turganbayeva (2011), the Western type of culture is characterized by imitation of nature, naturalism, pragmatism, individualism, extroversion. While the eastern type of culture is focused on symbolism, abstraction, contemplation, introversion, spirituality, which allows people of the East to be open to nature, the cosmos, trusting being (Turganbayeva, 2011: 29). However, these conclusions are not supported by experimental material, which makes it possible to question the significance of these factors in understanding the role of color in culture. As our observations of the neuro-aesthetic functional of the color designations of objects in the text as a hidden interpretation of the emotional states of the characters in the works of T. Dreiser become more capacious and compressed in the works of Western fiction, for which there is no need to use Eastern macaronisms and / or references to archetypal images. The sacred layer of the color scheme in T. Dreiser's works of art is implicit and understandable only to the initiate, appearing to the uninitiated only as a dry pragmatic solution.

In the Kazakh ethno-linguistic and cultural consciousness, the semantic space of "blue" colors is realized through the archetypal images of "*Blue Wolf*"/ *Kök Böri*, "*Blue God*"/ *Kök Tangri*, which allowed researchers to assert that

all the great forces governing human civilization possess blue color (Zharkynbekova, 2011). The neuro-aesthetic psycho-emotional effect of the "blue color" is associated with the possibility of using a variety of emotive expressive language units that are able to convey to the recipient an understanding of the essence of the impersonal connection between earth and sky as an understanding of the concepts of ocean, sea, lake and river in the celestial and aquatic space. The Kazakh linguistic-color emotive map, according to scientists A.T. Khaidarov, A.T. Umirbekov, Z.T. Akhtamberdiyev (1986), who studied coloronyms in the Kazakh language, is saturated with semitones and various shades under the influence of color solutions inherent in the nature of steppe fauna and flora. In this regard, Kazakh researchers stressed the need to use the traditional "primary color" and "its shades". Also, based on experimental data, it was found out that the mixing of the main seven/or ten colors forms new certain colors (Khaidarov et al., 1986; Pansat, & Khalikova, 2023). According to A.T. Kaidar, who studied Kazakh color meanings in this way, the Kazakh language presents a palette of more than 150 color meanings consisting of one syllable, formed on the principle of reliance on a subject basis (Kaidar, 1998: 53). For example: *blood red, cherry red, bright red, golden yellow, sky-blue, cast-iron black*.

Today, emotive linguistics reveals a pronounced attitude to comprehending the cognitive aspect of language activity, conducting experimental procedures using big data on the conceptual analysis of the color representation of emotions as a linguistic phenomenon (Antipenko, 1995; Dodonov, 1987; Itten, 2019; Frumkina, 1984; Monastyrskaya, 2008; Stefansky, 2009; Vezhbitskaya, 2011; Vychuzhanina, 2009; Vasilevich, 1987, etc.). If earlier researchers turned only to the "conceptual core" of the word (Yartseva, 1968: 262), today more and more attention is paid to additional, connotative, emotive meanings that permeate all levels of the language system (Qin et al., 2022; Zhang, et al., 2023; Rong, 2021).

The very analysis of the cognitive-connotative nature of colorative emotives in the texts of T. Dreiser and A. Nurpeisov aims not only at studying the conceptual core of the concept "Color in negativizing emotive coloronyms", in which emotives and coloronyms themselves can act as sub-concepts, most clearly manifested in the peripheral zone, which has absorbed a huge space of connotative meanings. As can be seen from our analysis, in the literary texts of both

writers, the toxicity of negativizing emotive coloronyms is usually demonstrated by accentuating the connotative meaning due to the context. The development of a recommendation information and analytical system for the recognition of negative emotive coloronyms includes typical and specific features of the use of machine learning and neural networks (Vorontsov et al., 2022).

The indicated problem demonstrates the need for clarity in the categorical features of the terminological apparatus of comparative emotive linguistics, which is necessary to solve problems related to the recognition of emotion, its characteristics and emotives, through which this emotion is realized and translated externally.

At the same time, the refinement of the conceptual and terminological apparatus of comparative emotive linguistics within the framework of this work allows us to create a more coherent architecture of the linguistic-color emotive map using digital tools.

## Conclusion

Using the example of the analysis of the novels by T. Dreiser and A. Nurpeisov, the role of color designation in the transmission of the inner experiences of the characters and the reflections of the authors themselves was established with the identification of metaphorically related and indirect meanings of the transmission of negative emotions in the text.

The text itself is a rather complex object for research due to its multidimensional and multi-aspect nature, and the analytical consideration of the emotive plan is complicated by the ethnopsycholinguistic features of the author and the audience.

In works of art, colors can perform various functions. Psycholinguists have come to the conclusion that colors are used to describe emotions or express them. They describe the reaction of the characters to emotional situations. In addition to expressing emotions, it is used to create a visual image of emotions and feelings. Taking into account the analyzed examples, we came to the following conclusion: in literature, the usage of colors that express emotions in the text is carried out by several methods. The first is that when a character experiences an emotion, colors are used in the process of describing the same emotion, actions, or facial changes. In these situations, there may not even be Language units that we call emotions. Secondly, emotional states

are transmitted using figurative means. For example, metaphors with color names, comparisons, epithets, and so on.

Color synchronies with emotions occurs in consciousness, and not in the surrounding world, since the nature of emotions is due to psychophysiology. The concept provides a connection between the existing representation in consciousness and the linguistic representation. Despite the fact that the data of psycho-emotional response are subjective, the concepts used are universal for the translation of the received experience.

The emotive co-meaning in the matrix of meanings of the concept "color" has the character of an ethno-linguo-cultural element, which is due to the connection with its connotation, which is predetermined by ethno-sociocultural norms and rules fixed in the value code of the ethnos.

The authors use negativizing emotive coloronyms with an emphasis on the experience of their ethno-linguistic culture, while the author's use of emotive metaphors of color to convey negative emotions is individually authorial.

The nuclear zone of emotive coloronyms with a negative dominant is a nominative of color designation. The peripheral zone includes numerous interpretations of coloronyms resulting from their representation in a literary text based on everyday communication. However, only the textual fabric is able to verify the connotative meaning of coloronyms that also convey emotional sound. This has not only conceptual, but also axiological cultural value, since it makes it possible to realize the values that are characteristic of a certain nation with its mentality.

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## Foreign state immunity in the context of Russia's full-scale aggression against Ukraine

### Імунітет іноземної держави в умовах повномасштабної агресії РФ проти України

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#### Abstract

The article aimed to find ways to restrict Russia's right to State immunity legitimately. However, the study of international legal acts and national legislation of Ukraine using the methods of systematic analysis and formal legal and comparative legal methods proved the difficulty in solving this task. Thus, in Russia's aggression against Ukraine, the latter is not obliged to comply with the doctrine of State immunity to Russia. This is due to economic and social expediency, the principle of mirroring international relations, and the inevitability of punishment for war crimes against another State and for violating international criminal law. Therefore, the article proposes legitimate restriction of Russia's State immunity for Ukraine and third countries. For Ukraine, the solution to this problem lies in the legislative consolidation of a direct exception to the doctrine of State immunity to any aggressor state, including Russia. For any third country, the solution to this problem is either changing national legislation or concluding bilateral agreements with Ukraine. This will allow for recovery of damages at the expense of property in third countries and owned by Russia itself, its authorities and officials, or legal entities

#### Анотація

Метою дослідження стало пошук шляхів легітимного обмеження права суверенного імунітету РФ. Але дослідження міжнародно-правових актів та національного законодавства України за допомогою методів системного аналізу, формально-юридичного та порівняльно-правового методів, демонструє складність у вирішення поставленої задачі. Зроблені висновки стосовно того, що в умовах агресії РФ проти України, остання не зобов'язана дотримуватись правила суверенного імунітету по відношенню до РФ. Це обумовлюється економічною та суспільною доцільністю, принципом дзеркальності міжнародних зносин, а також невідворотності покарання за порушення міжнародного кримінального права та скоєння воєнних злочинів проти іншої держави. Тому були запропоновані напрямки легітимізації обмеження імунітету РФ, як для України, так і для третіх держав. Для України вирішення цієї проблеми лежить у законодавчому закріпленні прямого виключення у застосуванні принципу імунітету держави по відношенню до будь-якої держави-агресора. в том числі і РФ. Для будь-якої третьої країни, вирішення цієї проблеми лежить

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and individuals recognised as involved in the war against Ukraine.

**Keywords:** compensation for damage, international legal acts, national courts, state immunity, war crimes.

## Introduction

The sovereignty of any state determines its international legal personality, i.e. the ability to independently resolve issues related to achieving its goals of civilisation development in relations with other states. Its recognition by the international community guarantees any State's freedom of participation in international affairs. This right is enshrined in the relevant international legal acts and is defined as the main principle of global development introduced after World War II. Faced with global challenges related to the aggression of some states against others, the victorious states developed, in their opinion, an effective architecture of the new world in which peace and mutual respect of States as equal subjects of international relations should prevail.

The new system of global legal order required the creation of an effective method of guarantees for the practical realisation by all States of their international legal personality. One of these guarantees is State immunity, governed by the principle of "*par in parem non habet imperium*" – an equal has no power over an equal.

Its value is reflected in the guarantees enshrined in international legal acts concerning the non-extension of the judicial jurisdiction of one State to another. That is, the immunity of a State does not allow, without the consent of that State, to initiate legal proceedings in the courts of other States, both those relating to direct claims – in personam (i.e. directly against the State) and indirect legal actions – in rem (in which the claim is related to the activities of the authorities of a foreign State or to property belonging to it). Thus, the modern system of international law excludes the possibility of any country's sole decision to initiate cases against another state in its courts, including its authorities and official institutions.

The significance and actualisation of this principle are vital in the context of Russia's

або через зміну національного законодавства, або шляхом укладення двосторонніх угод з Україною. Це дасть змогу звернути стягнення за рахунок майна, яке знаходиться в третіх країнах та належить або власне РФ, або її органам влади та посадовим особам, чи юридичним і фізичним особам, які визнані причетними до війни проти України.

**Ключові слова:** військові злочини, відшкодування збитків, імунітет держави, міжнародно-правові акти, національні суди.

armed aggression against Ukraine. Damage, crimes against humanity, war crimes, and the genocide of the Ukrainian people are all modern realities of Russia's manifestation of its international legal personality. In such circumstances and taking into account the principle of "*par in parem non habet imperium*", Ukraine is significantly limited in its ability to demand reparations and compensation for losses caused by Russia by recovering property, including money and other valuables placed by Russia, both in Ukraine and in third countries, for the benefit of the state of Ukraine. And while the issue of Russian assets on the territory of Ukraine can be resolved politically through the introduction of a system of sanctions with subsequent enforcement of all property of Russia located on the territory or in institutions subject to Ukraine's sovereignty, there is no such solution for other States. For them, the violation of the doctrine of State immunity, even in relation to Russia, remains an imperative prohibition on using more active and effective means of countering Russia's armed aggression against Ukraine.

Therefore, the aim of our study is as follows: to establish the possibility of changing the existing doctrine of State immunity about those countries that have committed an act of aggression against third countries, commit war crimes against the population of that country and use the mechanisms of hybrid warfare directed against specific countries, against regional or global security.

Research objectives:

- to define the essence and content of the principle of State immunity in international law;
- to establish the main features of State immunity and its international legal consolidation;



- find ways to apply exceptions to the doctrine of State immunity to countries that commit war crimes, genocide and acts of aggression against third countries.

Therefore, it is necessary to find an international legal way to punish Russia for crimes of aggression and other war crimes against the Ukrainian people committed during the large-scale invasion of Ukraine.

### Literature review

The doctrine of State immunity and the principle of “*par in parem non habet imperium*” is a frequent topic of scientific research by the international scientific community, experts in international law, diplomats, international lawyers, etc.

For example, Sanger (2013) refers to practical cases of implementing the principle of “*par in parem non habet imperium*” through its components, such as immunity of special missions, high-ranking officials and State immunity. He considers whether state officials accused of international crimes (including war crimes) can invoke *ratione materiae* immunity from the criminal jurisdiction of a foreign state.

Van Alebeek (2018) explores potential exceptions to the doctrine of State immunity and tries to resolve it by removing restrictions on applying functional immunity when officials are accused of committing international crimes.

Zongwe (2019), using the example of the war in Namibia, demonstrates that even if States have officially declared that they recognise or consent to the jurisdiction of an international or domestic court, one of the parties to the dispute may prevent that court from effectively exercising jurisdiction by filing an objection that this party enjoys immunity. According to him, the issue of immunity arises before national courts more often than any other issue of international law in connection with war crimes and acts of aggression. But the scholar also concludes that it cannot be resolved without developing an effective international legal mechanism and creating a system of global coercive measures to bring the guilty party to justice.

Murphy (2018) notes the attempts of the UN International Law Commission to develop an exception to the doctrine of State immunity by introducing six elements of crimes under international law in respect of which “*ratione e materia*” immunity does not apply. Among these

crimes, the researcher mentions genocide; crimes against humanity; war crimes; apartheid; torture; and enforced disappearances. However, according to the scholar, all this applies only to individual state officials but should also apply to the State since compensation for damage at the expense of its property has much greater prospects than compensation for damage at the cost of the property of the person held liable.

Matter (2019) from the American Society of International Law try to revise the doctrine of State immunity and offer to start with the baseline of immunity as a matter of customary international law and then try to identify state practice and “*opinio juris*” in support of exceptions to it.

The doctrine of foreign State immunity arose from the principle of diplomatic immunity, in which States treated foreign diplomats as if they were not present in the State's territory and were outside the scope of judicial jurisdiction based on territorial presence. The 2012 ICJ Court judgment in “Germany v. Italy” provides that States are immune from each other's jurisdiction and then considers possible exceptions under customary international law. In other words, considering the traditional nature of the doctrine of State immunity, scholars propose to introduce exceptions to this rule similarly through precedent. This situation is of extreme utilitarian importance for Ukraine. It is due to the need to initiate appropriate legal proceedings against Russia due to the political will of third states.

Possible exceptions to the doctrine of State immunity are extremely relevant and have been raised by the UN Security Council in its appeal to the International Criminal Court (Galand, 2019). The crux of the matter is how exactly the immunity of a State can be limited about its official representative, in respect of whom the International Criminal Court (from now on – the ICC) has issued a warrant. The relevance of this appeal is due to the question raised in it: “Whether a State official from a State not party to the Rome Statute is entitled to invoke its immunity before the ICC when the latter exercises jurisdiction under Article 13 (b).”

Given that Russia can arbitrarily “level” the effect of any internationally recognised conventions and jurisdictions of courts by its acts, the ICC's response to this question is important. Moreover, Russia has already “levelled” the judgments of the European Court of Human Rights (from now on – the ECHR).

Curran (2019) analyses the Foreign Sovereign Immunities Act (from now on – FSIA), passed by Congress and covers all cases where foreign States have immunity from suit in US courts, as well as when the immunity of foreign States should be limited. The researcher considers the expropriation of foreign State property in case of violations of international law by the example of the US courts and notes that today there are clear cases and possibilities of applying the expropriation mechanism in cases of genocide committed by foreign States. However, this practice must be finalised in determining what exactly should be considered a violation of international law.

Perot Bissell and Schottenfeld (2018) examine the issue of international immunity on the example of the lawsuits filed by victims of the September 11 attacks who sued Iran in the Southern District of New York for aiding and abetting al-Qaeda in committing the attacks. Researchers use the court's decision to award Iran \$1.8 billion in damages as an international judicial precedent.

According to Ukrainian researchers Bilousov et al., (2021), this US practice is effective and applicable to Ukraine. Congress wanted to ensure plaintiffs could use ordinary state law causes of action to sue foreign States. This approach is not directly relevant to the situation in Ukraine. Still, in recent years, plaintiffs have filed various cases that represent “classic” applications of exceptions to non-commercial torts and those that expand the scope of the classical understanding of non-commercial torts.

According to Atamanova and Kobets (2022), Russia's full-scale aggression against Ukraine gives a new impetus to discussions and resolving fundamental issues regarding the limitation of jurisdictional immunity. Current events prove the need for Ukraine to move from the doctrine of

full immunity to the concept of limited immunity as a law that would comprehensively regulate all pressing issues.

The position of Ukraine, supported by other states, can contribute to forming a new customary norm (Atamanova & Kobets, 2022). Vodyannikov (2022) also claims that Ukraine is not in an ordinary situation – from a legal point of view, Ukraine is in a state of individual self-defence within the meaning of Article 51 of the UN Charter.

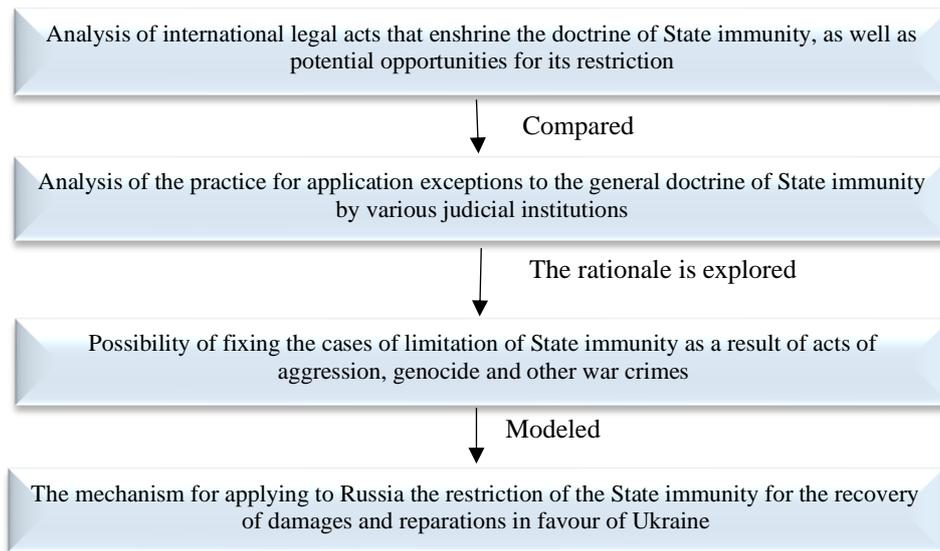
A State's inherent right to individual self-defence is recognised by Article 51 of the UN Charter as an inalienable right. It identifies the right of a State that has become a victim of the use of force (in our case – of the wrongful act of aggression) to take all lawful measures for self-defence, including derogation from international legal norms and obligations (except for peremptory norms). In other words, Article 51 of the UN Charter is the basis for derogation from the international legal obligations of a state vis-à-vis the aggressor state and for using countermeasures in response.

So, scholars have different opinions regarding the integrity of the doctrine of State immunity. Still, almost all of them agree that it should be limited in cases of direct aggression of one State against another.

### Methods and materials

The research methodology aims to determine the possibilities of bringing Russia to justice for aggression and war crimes against Ukraine and the Ukrainian people.

This study proposes the following logical scheme of methodological cognition of the essence of the problem (Figure 1).



**Figure 1.** Algorithm for implementing the research methodology.

The study of State immunity is always internationally oriented, which means that the issue of bringing Russia to justice by applying the jurisdiction of third-country courts to it should be resolved at the international level. Restrictions on the right of Russia to State immunity should be utilitarian and therefore universal, i.e., acceptable to the international community.

To this end, this article actively uses a group of methods to systematically analyse the provisions of international legal acts and certain acts of national legislation of some countries. In particular, using the formal legal method made it possible to reveal the essence and limits of applying the doctrine of State immunity in international law.

Systemic analysis and the comparative legal method allow the introduction of restrictions on State immunity. Using the hermeneutic approach, it became possible to determine how to enshrine certain aspects of restrictive State immunity.

In particular, the authors critically analysed Article 51 of the UN Charter; the provisions of the Rome Statute; the ICC's application of the doctrine of State immunity; the ECHR's practice; individual ICC decisions, in particular, the 2012 Judgment of the International Court of Justice (ICJ) in the case of "Germany v. Italy"; the US Foreign Sovereign Immunities Act, etc.

The article discusses the opinion of Ukrainian experts on how to practically apply exceptions to the doctrine of State immunity about Russia by

third countries in whose territory the property of the aggressor country is located.

As part of an active expert discussion in the Verkhovna Rada Committee on International Relations and the National Institute for Strategic Studies, it was determined that most experts are inclined to a political solution to the problem of limiting the immunity of Russia in the jurisdictions of third-country courts. However, other opinions on the international legal framework for such a restriction regarding Russia were also considered, which became one of the foundations of this study.

## Results

The doctrine of State immunity protects any State from the jurisdiction of any national courts of a third State. In the case of Russia, for Ukraine, the State immunity of the aggressor country means removing its property from the jurisdiction of Ukrainian courts.

At the same time, State immunity does not apply to specific individuals, particularly to all citizens of Russia, by international legal acts. Such international legal acts are the Vienna Convention on the Representation of States in their Relations with International Organizations of a Universal Character of March 14, 1975, the Vienna Convention on Consular Relations of April 24, 1963, the Vienna Convention on Diplomatic Relations of April 18, 1961, and the Convention on Special Missions of 1969.

In other words, the jurisdiction of Ukrainian courts extends to the citizens of Russia under the

said exception, which makes it possible to bring them to all types of liability, including criminal and civil liability (compensation for damage, losses) for committing war crimes and crimes against the Ukrainian people. This is the first caveat we should remember when discussing developing an effective mechanism for applying exceptions to the doctrine of State immunity.

State immunity is enshrined in two international legal acts:

- The UN Convention on Jurisdictional Immunities of States and Their Property, adopted by General Assembly resolution 59/38 on December 2, 2004. Moreover, this type of immunity is applied by national courts as a codified set of customary international law; that is, States do not have an imperative to apply this immunity but use it through international custom (Effective Regulation Platform, 2004);
- The European Convention on State Immunity adopted by the Council of Europe on May 16, 1972. This Convention contains the concept of limited State immunity, defines the form in which a State may waive its immunity, and sets out a list of categories of cases in which a State does not enjoy immunity in the court of another State Party (Sivash & Sherstyuk, 2022).

Both Conventions enshrine the State immunity. However, the national courts are not limited when resolving compensation for damage and losses caused by bodily injury or other impact on a person's health.

However, State immunity is limited to the national courts of a State in cases involving harm to the life and health of its citizens. It is mainly used in civil or commercial disputes, but in the context of Russia's attack on Ukraine, we can expand the cases of its application significantly.

The problem is that if we talk about prosecuting specific criminals, we personalise them and separate them from the State. In other words, charging any Russian war criminal by the national courts of Ukraine limits the possibility of recovering damages at the expense of his property alone.

At the same time, the property of the Russian State is not subject to the substantive influence of the national courts of Ukraine. And it is precisely this problem – establishing a clear link between war criminals and acts of aggression, genocide and war crimes of the Russian Federation – that

needs to be addressed in a way that would be internationally universalised in limiting Russia's State immunity.

The solution to this problem may be as follows.

First, Ukraine is not a party to any of the above conventions, and therefore it is not obliged to comply with the doctrine of State immunity. However, Article 79 of the Law of Ukraine, "On Private International Law", does enshrine this immunity. In addition, there are also reservations regarding its limitation, set forth in part 4 of the article (Document № 2709-IV, 2022).

Cases of its limitation are determined by mirroring the requirement for other countries to respect Ukraine's State immunity. However, if third countries violate it, Ukraine may also break it about the property or bodies of that country that operate in the territory of Ukraine (representative offices, consulates, etc.).

Secondly, an analysis of the provisions of the above Conventions shows that in case of non-accession to them, the State may decide on applying State immunity based on customary international law. This means that the national courts of Ukraine may use the practice of international courts or even national courts of other States in matters of limitation the State immunity.

Here we should refer to the provisions of Article 12 of the UN Convention on Jurisdictional Immunities of States and Their Property, which is the basis for limiting the judicial immunity of a foreign State as a result of physical harm to a person or damage to property, the so-called "tort exception" (Effective Regulation Platform, 2004).

In the decision of the International Court of Justice (ICJ) in the case *Jurisdictional Immunities of the State* ("Germany v. Italy: Greece intervening") of February 03, 2012, the court expressly established that the possibility of non-application of the immunity of a foreign State to non-payment of compensation for serious human rights violations during an armed conflict committed by the responsible State, especially in the absence of other means of payment, is not a violation of the sovereign rights of another State.

The ECHR reaches a similar conclusion. The ECHR's legal position on the limitation of jurisdictional immunity is reflected in the judgment of March 14, 2013, in the case of

“Oleynikov v. Russia”, where the Court made a decision that the State immunity may be limited “by customary international law, even if that State has not ratified it”, and the Court must take this fact into account (Sanger, 2013).

Therefore, Ukraine can and should limit Russia’s State immunity, especially given the acts of aggression, genocide and ongoing war crimes committed against Ukraine and the Ukrainian people.

Since 2014, the practice of Ukrainian courts, including the Supreme Court, in resolving cases involving claims of Ukrainian citizens against Russia for compensation for damage caused by the armed aggression of Russia is that given the provisions of Article 79 of the Law of Ukraine “On Private International Law”, before deciding whether to initiate proceedings in such a case, the Ukrainian court had to find out whether the diplomatic mission of Russia as the competent authority of the State had consented to the consideration of the case in the courts of Ukraine (Document №2709-IV, 2022).

The Supreme Court’s case law on the judicial immunity of Russia of the Civil Court of Cassation of the Supreme Court of April 14, 2022, in case No. 308/9708/19, claims that “the court of Ukraine, when considering a case where Russia is the defendant, has the right to ignore the State immunity of this country and consider cases on compensation for damage caused to an individual as a result of the armed aggression, in a lawsuit filed against this particular foreign country” (Case No. 308/9708/19, 2022).

Hence, a foreign State’s commission of acts of armed aggression is not an exercise of its sovereign rights but a violation of the obligation to respect the sovereignty and territorial integrity of another State – Ukraine, as enshrined in the UN Charter. This conclusion should form the basis for limiting Russia’s State immunity, including through the influence of national courts of third countries on Russia using withdrawal of property of Russia located in the territory of that country in favour of Ukraine as compensation for damages caused by acts of aggression, genocide and other war crimes committed against Ukraine.

Both our conclusion and the above statement are consistent with the Law of Ukraine “On Private International Law” and the practice of other States, as the implementation of the limitation of Russia’s State immunity in Ukraine is impossible according to the classical rules set forth in the

above Conventions: subject to the consent of another state (Document № 2709-IV, 2022).

Due to Russia's full-scale invasion of the territory of Ukraine on February 24, 2022, Ukraine broke off diplomatic relations with Russia, making it impossible to send various inquiries and letters to the Embassy of Russia in Ukraine since it ceased operating.

According to the legal position of the Supreme Court outlined in the Resolution of the Grand Chamber of the Supreme Court of May 12, 2022, in case No. 635/6172/17, plaintiffs in cases for compensation for damages caused by Russia as a result of military aggression against Ukraine, are paid at the expense of the property of Russia, as well as its legal entities and individuals, who are included in the sanction lists, both national and international (Case No. 635/6172/17, 2022).

Therefore, this rule should become the basis for applying the limitation of Russia’s State immunity in the national courts of Ukraine and third countries regarding the recovery of compensation for damages caused by Russia to Ukraine since 2014 due to its aggression and other war crimes.

This rule should be implemented primarily through Ukraine’s diplomatic efforts and by concluding bilateral interstate agreements between Ukraine and other countries, the subject of which should be introducing the said rule into the national legislation of such country.

## Discussion

The application of the doctrine of State immunity and the grounds for its limitation is one of the most controversial in the context of Russia’s aggression against Ukraine. For example, Bellinger et al., (2021) claim that the doctrine of State immunity itself was developed mainly due to the consideration of cases by national courts in proceedings against foreign states.

The right to State immunity is primarily a law developed by a court, which means that court decisions become a source of international law in terms of State immunity, and the doctrine of State immunity itself is not indisputable (Bellinger et al., 2021). According to scholars, it means the possibility and necessity of limiting State immunity to those countries that exert unlawful influence on third countries in violation of international law.

In this context, Yang (2019) draws attention to the Decision of the Supreme Court of Austria of May 10, 1950, in the case of “Dralle v. Republic of Czechoslovakia”, which is the starting point in the final formation of the theory of limited State immunity about commercial activities. He also highlights the State Immunity Act of 1978 of Nigeria, which, already at the national level, establishes a limitation of the State’s immunity in case of aggressive and unfair policies towards Nigeria (Yang, 2019).

Fox and Webb (2020) draw attention to the legal practice of the United States, which has been changing since 2014 due to Ukrainian realities since the terrorism committed by Russia against Ukraine is a crime of an international nature. Therefore, effective measures are needed to counter it.

But the quintessence, according to Ravenell and Ross III (2022), is the development by the US Congress of the draft law “Ukrainian Sovereignty Act” (H.R. 7205 “Ukrainian Sovereignty Act of 2022”), which proposes to provide that a foreign State shall not be immune from the jurisdiction of the United States courts in any case where monetary damages are sought against a foreign State for bodily injury, including death, property damage, or loss of property, caused by the invasion of another sovereign State located in Europe if such an invasion occurs.

This fully confirms our conclusion regarding the need to introduce limitations on Russia’s State immunity in the legislation of third countries due to the aggression against Ukraine.

Some Ukrainian scholars emphasise the need to distinguish between the State’s public and private legal interests and the appropriate application of State immunity. For instance, Vedkal and Hadirli (2021) exclude the restriction of Ukraine’s State immunity about third states by consolidating this imperative in national legislation. Borshchevska (2021) points out that Ukraine’s compliance with this doctrine is its international legal obligation; therefore, applying exceptions to the State’s sovereignty is unacceptable.

Kulchii and Lyakhivnenko (2016) bypass the imperative use of this doctrine through the principle of expediency and mirroring of measures taken by states in their international bilateral relations. That is, if Russia, ignoring international law, wages an aggressive war against Ukraine, Russia has abandoned the norms

of international law, and Ukraine should not adhere to the rule of State immunity about Russia. Forteau (2018) also stand for the unequivocal removal (deprivation) of any international State immunities of the aggressor State, which is necessary for the seizure of property belonging to this State, for making payments to victims from such property, especially its state property, property of state legal entities, etc.

Authors believes that at the international level, there is a need to establish limits on State immunity and a reasonable balance between the protection of sovereign equality and the fight against impunity in the case of international crimes (Hammers, 2018). It is precisely this impunity that Ukraine must overcome to hold Russia accountable for the damage caused by military aggression.

## Conclusions

We define the doctrine of State immunity, which is used in customary international law, as one of the obstacles to bringing the aggressor State of Russia to justice for crimes committed against Ukraine. The essence and content of State immunity is that a State cannot be subject to the jurisdiction of any national court of another state without consent.

This implies a voluntary waiver of immunity by the state. However, such behaviour is not inherent in a country that disregards international law and commits an act of aggression against another independent state. Therefore, by its actions, Russia delegitimises the norms of international law and thus deprives another country of the obligation to observe them about the Russian Federation. The selective application of international law is excluded, as it would collapse the entire global legal order. Therefore, Ukraine should not follow the doctrine of State immunity against Russia and has the full right to recover for the damage caused by Russia due to its military actions. Such recovery is envisaged at the expense of property located on the territory of Ukraine and owned by Russia, as well as the property of Russian legal entities and residents who have been included in any sanctions lists for their role in the aggression against Ukraine.

This imperative, which the judicial system of Ukraine has already developed, is proposed to be enshrined in Part 5 of Article 79 of the Law of Ukraine “On Private International Law”. The legal provision we offer to implement should indicate the need to limit the aggressor State’s

right to State immunity for committing international criminal offences.

Third countries should apply the same limitation to Russia for its aggression against Ukraine, which should be achieved by concluding bilateral agreements between the States. The subject of these agreements should be a clear provision on extending the jurisdiction of national courts of third countries over Russia, its property, and the property of its legal entities and citizens.

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## The evolution of 'Nation' concept and its relevance for contemporary historical moment

### La evolución del concepto de Nación y su relevancia para el momento histórico contemporáneo

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#### Abstract

Understanding the evolution of the concept of "nation" is crucial in comprehending the shifting dynamics of identity, national policy, and global interactions. By tracing the historical development of this concept, from its early origins to its contemporary manifestations, the article aims to shed light on how the idea of the Nation has transformed and adapted to social, political, and ideological changes. The retrospective analysis of 'national' discourse makes possible to demonstrate how the Nation concept expanded its content during the recent centuries. The philosophical and historical study of the Nation provided in the article, and its research from the functional and axiological standpoints, drives us to make a few general assumptions: Nation still can be that kind of mobilizing force that helps unite people in resistance to external aggression; the concept of

#### Resumen

Entender la evolución del concepto de "nación" es crucial para comprender la cambiante dinámica de la identidad, la política nacional y las interacciones globales. Al trazar el desarrollo histórico de este concepto, desde sus primeros orígenes hasta sus manifestaciones contemporáneas, el artículo pretende arrojar luz sobre cómo la idea de Nación se ha transformado y adaptado a los cambios sociales, políticos e ideológicos. El análisis retrospectivo del discurso 'nacional' permite demostrar cómo el concepto de Nación ha ampliado su contenido durante los últimos siglos. El estudio filosófico e histórico de la Nación aportado en el artículo, y su investigación desde el punto de vista funcional y axiológico, nos lleva a realizar algunas suposiciones generales: la Nación todavía puede ser ese tipo de fuerza movilizadora

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Nation presumably does not have enough resources to influence the highly developed countries, but still preserves its potential to transform the societies in the developing countries. Some findings and insights presented in this article may contribute into further theoretical research, as well as policy development, and a deeper understanding of the role of nations in an increasingly interconnected world.

**Keywords:** nation, aristocracy, estate, society, unification, function, culture, politics, values.

## Introduction

The concept of "nation" has been an influential aspect of human societies for the last four centuries, shaping the course of history, politics, and culture. However, in today's rapidly changing global landscape, the meaning and relevance of the nation have become increasingly complex and contested. This article seeks to examine the evolution of the concept of "nation" over time and explore its current meaning.

In the present historical moment characterized by globalization, digitalization, migration, and multiculturalism, the concept of "nation" remains extremely significant, and continues to play a vital role in shaping individual and collective identities, as well as influencing social, economic, and political systems. The *actuality* of this research is connected with the multifaceted significance of the "nation" concept, studied in comparative-historical way retrospectively, and in contemporary world, exploring its implications for governance, national identity formation, and international relations.

The *object* of this study is the concept of 'Nation' as sociocultural, political, and ideological phenomenon.

The *purpose* of this study is to show how the Nation was changing its content during centuries, and what point it has come to nowadays. To achieve the mentioned purpose, we have to complete the following tasks: to trace the main stages of the "nation" concept evolution (we limit this study to the European cultural and political space); to identify the key characteristics of such a concept as a Nation from a functional and axiological points of view; to evaluate the influence prospects of the "nation" concept in the modern world.

que ayuda a unir a la gente en la resistencia a la agresión externa; el concepto de Nación presumiblemente no dispone de recursos suficientes para influir en los países altamente desarrollados, pero conserva su potencial para transformar las sociedades de los países en desarrollo. Algunas de las conclusiones presentados en este artículo pueden contribuir a futuras investigaciones teóricas, así como al desarrollo de políticas y a una comprensión más profunda del papel de las naciones en un mundo cada vez más interconectado.

**Palabras clave:** nación, aristocracia, estado, sociedad, unificación, función, cultura, política, valores.

The *importance* of given research, as we believe, is connected with the need to provide critical examination of the concept of "nation", studying the milestones of its evolution and trying to evaluate its contemporary relevance. Thus, this article aims to contribute to the scholarly discourse surrounding the complex nature of national identities and their impact on the present historical context.

## Theoretical Framework or Literature Review

The *current knowledge* of the topic is presented in some publications from different fields of social studies. There are a lot of challenges and complexities in the interpretation of Nation's relevance at contemporary historical moment, considering the controversial outcomes of migration processes, erosion of national identity, issues of equality of opportunity and social justice, etc. To understand the concept of Nation correctly, we should keep in mind its historical background, and look carefully at various aspects of its implication in today's life. Among the publications, meaningful for better understanding of the researched subject, there should be mentioned: the works focused on the matters of national culture (Pickel, 2013; Orgad, 2015), nationalism (Jensen & Mouritsen, 2017; Johnston, 2017; Larin, 2019; Tamir, 2021), migration and related issues (Joppke, 2007; Antonsich, 2016; Antonsich, 2018; Waal, 2020), multicultural nation and universal values (Wilson, 2015; Borinshtein et al., 2021; Schutter, 2021), national identity (Henderson & McEwen, 2005; Huddy & Khatib, 2007; Huang et al., 2023), ethno-cultural diversity (Smith, 1988; Antonsich & Petrillo, 2018; Matthews & Zain, 2022), the educational system influence on the national consciousness (Borinshtein et al., 2022), national self-affirmation through the scientific

and technological leadership (Stovpets, 2012; Svyrydenko & Stovpets, 2020), nations as justified substate authorities (Silva, 2022).

### Methodology

Of the research is based on a systematic approach, comparative-historical, deductive and dialectical methods, axiological and functionalistic approaches. The abovementioned methodology allows to trace all the main stages in the development of the concept of "nation", and to compare semantic changes within each stage.

### Results and discussion

When we want to start with the question "what is a nation?" we immediately encounter a certain problem, since the nation is a polysemantic word. The nation arises as an idea in various contexts. Secondly, the idea of a nation changes in the path of history: between the 17th and 20th centuries this concept shifts, varies its meanings; it is unsteady and fluid. For the Roman civilization, when they translated the Greek words "ethnos", "ethne" in lingua Latina as "nationes", nations were a naturalistic pre-state (before-state) concept, and often a synonymous with barbarian: there were full Roman citizens (cives Romani), but there were also representatives of various non-Roman nations (called: Provinciales, Peregrini). Something similar happened in early Christianity: the so-called "nationes" were deemed as pagans, people who had not yet risen to the level of Civilization. Now we shall try to unfold the ambiguity and dynamism of the Nation concept, by showing the four main contexts of modern understanding for the Nation.

The first understanding is a "nation of estates" or "nation of aristocrats". For example, let's take the German word combination *Adel Nation* (aristocratic nation): "der Adel" could be translated as *Noble, Aristocracy*, so here's the aristocratic understanding of a Nation, also called the "Nation of Estates", meaning by that only the first and the second estates (clerical nobility and secular nobility). Such an interpretation for the Nation (as a community of nobles) is typical for 16-17th centuries, and this idea is directed against the absolute power of the monarch (Wrede, et al., 2016).

After the religious wars of the 16th century, under the influence of Luther and Calvin, and other Protestant theologians and thinkers, the importance of secular power increases and the modern state itself arises, the vertical

strengthens: the monarch centralizes and unifies the system of government. Of course, the absolutism oppresses the aristocrats, going against the interests of those who used to be almost equal to the king. Therefore, this political conflict gives rise to the idea of a Nation in circles of the aristocracy. It becomes a kind of instrument for limiting absolutism. And in minds of the aristocratic camp, there's a will to remind the king that he is not the only one in charge of this system, and there is a more complex system of relations around political power.

We should emphasize how conflicting this concept was: the "Nation of Estates" was directed against the power of an absolute monarch. But still that was a very small fraction of the entire population. For instance, if we take the history of Rzeczpospolita - the Polish-Lithuanian-Commonwealth, and if we even take the 17th century, we should ask ourselves: who was the Nation in this large territory? - only the nobility (Szlachta, i.e. gentry, aristocracy, the nobles), and they were mainly in the Polish and Lithuanian segments of the whole populations (we say it approximately, because then neither Poland nor Lithuania nor Ukraine did not exist in their current form, just as neither Italy existed then as a single state, nor Germany).

Trying to answer, who made up the "nation" at those times Rzeczpospolita, we use T. Snyder's work "The Reconstruction of Nations: Poland, Ukraine, Lithuania, Belarus, 1569-1999". He expresses an opinion, that the nobles were only about 10 percent of entire population (who called Szlachta) in the Kingdom of Poland and the Grand Duchy of Lithuania, and in the Ukrainian territory (before and after so-called Het'manshyna) - only about 2 % of population (Snyder, 2003: 112), so at that time they were the "blood of the nation". Therefore, the concept of "a Nation of estates", typical for the 16th century, was associated with privileges and freedoms, which had to be defended.

In the middle of the 17th century (1648-1654) Ukrainian hetman Bohdan Khmelnytsky was fighting against Poland, or Rzeczpospolita. This struggle, in historiography being often called as the "national liberation war", in reality was the struggle for the rights, freedoms and privileges of the estate, to which hetman Khmelnytsky belonged, and the spokesman of whose interests he naturally was. It is clear, that hetman Khmelnytsky relied on the broader masses of people, not only on the nobles. But in his mind, probably, there was no idea of the liberation for the entire Ukrainian nation, since such a concept

had not yet been formed. Those times, they thought in other categories, class-estate.

By the way, Rzeczpospolita (1569-1795), located on the lands of modern Poland, Lithuania, Belarus and Ukraine, was quite comparable to those times France. For comparison: France, in the middle of 17th century, had a territory of about five hundred thousand square kilometers, with a population up to seventeen million people. Rzeczpospolita, in the same historical period, had a territory more than eight hundred thousand square kilometers, with a population about eleven million people (1650). And only around 12 % of people in Rzeczpospolita could be identified as a Nation - the bearers of privileges and freedoms. Meanwhile, peasants were not a "nation", only an aristocratic minority belonged to the "nation". And they were arguing with the King, in order to defend their status.

The second understanding of Nation is a so-called "nation of the people" that originates from the end of the 18th century to the middle of the 19th century, in a non-aristocratic environment, but inside of the emerging third estate (they were scientists, thinkers, writers, lawyers, bankers, merchants, entrepreneurs - all those who previously lacked a place in politics, since all these places was belonging only to aristocrats).

The idea of "political nation", "nation of the People" was shaped in 18th century France, first in the Encyclopedia of Diderot and d'Alembert. "Encyclopedia" was firstly published in 1751, and such authors as Diderot, Voltaire, Montesquieu, Rousseau and other Enlightenment thinkers were reconsidering the concepts of "people", "nation", "citizenship", "political power". But the definition of the Political Nation, its theoretical concept, arises only in 1789, in conditions of The French Revolution, when Abbé Sieyès has published his famous pamphlet "What Is the Third Estate?" (Sieyès, 2014).

When a conflict with the king arisen, which led to the beginning of the French Revolution, Abbé Sieyès was one of the trumpets of the newborn idea of the People's Nation. By this time, there were several pamphlets written by Sieyès about the upcoming convocation of the Estates General. These writings of Sieyès have made a significant impact on the people, in particular, his "An Essay on Privilege" (1788), the brochure "Recognition and exposure of human and civic rights" (1789), and the mentioned famous pamphlet that contains the following theses: "...What is the Third Estate? - Everything. What has it been hitherto in the

political order? - Nothing. What does it desire to be? - To become something..." (Sieyès, 2014). I.e. in the understanding of the bourgeois revolutionaries, the third estate was the whole nation, but it was not given a place in politics, it was not given a word, and now they are entering the arena. Later, Emmanuel Sieyès, being elected to the Convent, has supported the execution of King Louis XVI (1792), and after that, during the '18th Brumaire coup' in France (1799) has supported rise to power of Napoleon Bonaparte. It's rather symbolic that during the execution of the 'Old Order France' last monarch, the crowd was shouting "Vive la Nation!".

The idea of a "People's Nation" is sometimes called a Political Nation (FR: *Nation politique*, DE: *Volksnation*), and in many sources one can find the thesis that it was the French who invented the concept of the 'nation' in the modern sense. For them, the nation is a civil and civilizational concept, not the question of blood (ethnos) or language. Thus, if in the first sense we observed "a nation of aristocrats", "a nation of the noble estate", then the second incarnation of the idea of a nation is the revolutionary bourgeois ideas of the middle 18th century. Among the results of The French Revolution was a creation of the concept of "political nation", where citizenship (or allegiance) becomes the key feature.

But the Germans didn't think like the French. They had totally different political situation, and other forms of nationhood. And when the Germans were reflecting on the political situation before and during Napoleonic wars, Kant's students - famous philosophers Herder and Fichte - were thinking like that: in France, it seems everything clear - single state, common borders, and the French are rather "old nation"; they have the core territory formed a very long time ago. But the Germans live in many different German states. For a long time, the Germans have been nurturing the idea of unification, and it is gradually being embodied in the form of the 'Second Reich' (i.e. the German Empire in 1871-1918). But as a result of the First World War, their empire collapsed. In a distorted form, the idea of national resurrection has found its terrible incarnation in the 'Third Reich' (1933-1945).

What was the German idea about the Nation? In the middle of the 19th century, the Germans were living in many regions across Central Europe. And they have formulated an idea of "Kulturnation", meaning by that not an estate-based, and not a political, but "a culture-based nation". It's a kind of community, which lies

upon a cognate culture. Thus, there were many political state formations, which seemed to be scattered and decentralized, but they were spiritually united by a common culture and one language - German. So, "Kulturnation", or "a culture-based nation", was explained as a nation, whose cultural history could be traced back over a long period of time, and whose bearers have had an appropriate mentality and imagination of their own common culture.

If the abovementioned French idea of the nation is based upon the citizenship principle, then German concept of the nation means: one language, single culture, common spiritual space that unites different people living in many states. That implied, the Germans were feeling themselves as a single nation for that they belonged to the same culture. But they still needed a single state, so they began building their 'Reich'. This idea was reinforced, on the one hand, by representatives of the romanticism in art and literature, and on the other hand, by German thinkers. Among them was an outstanding philosopher J. Fichte, sometimes called "the father of German nationalism". He proclaimed his "Speeches to the German Nation" (Reden an die deutsche Nation) in 1807, calling Germans to national self-consciousness (Fichte, 2008). Here we contemplate the third context in understanding the Nation.

And finally, the fourth context could be mentioned when we interpret the Nation as a sovereign state, or the national state (the German word for this notion is "Staatsnation"). Such an understanding arises only in the second half of the 19th century, when the idea of nations' self-determination emerges. That was a time, when European politics was in total chaos. Several concepts overlaid: the construct "nation - empire - colonial power" arose all in one. Additionally, in the 19th century, there were renewed the attempts to restore the old estate system, also known as the "sacred order". It happened after the Congress of Vienna (1815), finalized with agreements on restoration of the feudal-absolutist monarchies, seriously destroyed by the French Revolution (1789-1799) and the Napoleonic wars. New borders of European states were defined.

During this period, the four great systems - Austria, Russia, England and France - ensured the European order and balance of power. But simultaneously, in the same 19th century, began a so-called «Spring of Nations», a succession of European revolutions 1848-1849, which were anti-feudal and national liberation directed.

These events influenced the fate of Italy, and the fate of Germany, and the political fate of Ukraine, which was torn between the Rzeczpospolita and the Russian Empire. The fourth partition of Poland (following the results of the Vienna Congress 1815) and the suppression of the Polish uprisings changed the balance of power, and led to a surge in the national liberation movement of the Ukrainian people.

In Kyiv, there had emerged a secret political society "The Brotherhood of Saints Cyril and Methodius", established in 1846 under the leadership of Mykola Kostomarov. In 1847, he wrote his conceptual work - "The Books of Genesis of the Ukrainian Nation" (Kostomarov, 2021) that was officially published just in 1918 because of the Russian censorship.

The Cyril and Methodius Brotherhood was established a few years before the "Spring of Nations" in Eastern Europe. Its formation in 1846 aimed to rekindle the principles of traditional Ukrainian brotherhoods and to envision a resurgence of Ukrainian national identity, including the aspiration for national autonomy within a united and equitable Slavic federation. However, in March 1847, the Russian Empire's authorities swiftly quashed the Brotherhood, which was accompanied by the exile or imprisonment of the majority of its members (Glyz, 1990: 37). Among key members of the Brotherhood of Saints Cyril and Methodius were Ukrainian political thinkers, historians, ethnographers, and writers: Mykola Kostomarov (1818-1885), Panteleimon Kulish (1819-1897), Yurii Andruzky (1827-1864), Vasyl Bilozersky (1825-1899), Mykola Hulak (1821-1899), Opanas Markovych (1822-1867), Oleksandr Navrotsky (1823-1892), Ivan Posiada (1823-1894), Dmytro Pylchykov (1821-1893), and Taras Shevchenko (1814-1861).

The Cyril and Methodius Society's objectives encompassed the liberalization of Imperial Russia's political and social framework, aligning with its members' Christian values and the rising Slavophilic ideologies embraced by the nation's progressive intellectual community. The society derived its name from Saints Cyril and Methodius, esteemed as ideological authorities of Slavic nations, for their roles in disseminating Christianity and creating the Cyrillic alphabet, which continues to be in use among Slavic languages. Additionally, the Society aspired to eradicate serfdom, promote widespread public education, and reshape the Russian Empire into a federation of liberated Slavic peoples, with

Russians being one of the equal - rather than the dominant nation (along with Ukrainians, Belarusians, Poles, and even Czechs, Slovaks, Croats, Slovenes, Serbs, and Bulgarians), with the implementation of the liberal democratic principles of freedom of speech, thought and religion (Glyz, 1990: 38).

Among other national movements, there was an Italian Unification movement, *il Risorgimento* (1815-1861), which has also inspired the participants of the Ukrainian national liberation movement to strengthen a Ukrainian political nation. In particular, they were inspired by ideas of Giuseppe Mazzini (Bayly & Biagini, 2008). The penetration of Mazzini's ideas (Mazzini, 1965) into Ukraine took place almost simultaneously with their emergence. Despite the "danger" of his works, as they were interpreted in the Russian Empire, there was their limited access to the circles of Ukrainian intellectuals. In those times, one of the "gates" of revolutionary ideas, along with St. Petersburg, Warszawa, Kyiv, was also the "free city of Odessa", *porto franco*, where Italian sailors were the numerous foreigners. A lot of English, French, Italian and German-language magazines appeared in the capital cities of the Russian Empire via the port of Odessa, albeit after being censored. Therefore, legally and illegally, Mazzini's name and his works were publicized, and make their influence together with the ideas of German political philosophers J. Herder with his 1773 manifesto "Of German Character and Art" (Herder & Goethe, 1964), J. Fichte with his famous "Addresses to the German Nation", 1808, and with the literary works of Romanticism authors who inspired Ukrainian intellectuals laid the foundations of its own modern nation-building process in the middle of 19th century.

If we take a pan-European context, as a result of national movements, a strange symbiosis arises: on the one hand, large empires (Austria, the Russian and Ottoman Empires, France, Britain) restrain national movements. Back in 1815, the so-called "Holy Alliance" was proclaimed, a reactionist coalition between the Emperor Franz I of Austria, King Friedrich Wilhelm III of Prussia, and the Russian Emperor Alexander I. On the other hand, new big systems are being created under the auspices of the national revival: this is Italy in 1861, and this is a united Germany in 1871. In addition, small nation-states arise, such as Belgium, which takes shape as an independent state in 1830 as a Catholic revolution against Protestant Holland. The creation of national states (*Staatsnation*) can be illustrated very vividly by the examples of Italy

unification, and after ten years - the Germany. So, in the 19th century Europe, all these turbulent changes would become the basis of global future historical events and upheavals.

Thus, we can trace this intricate ideological movement from the nation as estate-based structure, in the 17th century, to the idea of the "state-nation" in the 19th century. Then, also arose the idea of class, the idea of race, and the idea of internationalism. All this together - the ideas of "political nation", "cultural nation", the movement of romanticism, national revival, nationalism, inter-nationalism - was combined on various grounds, and began to operate within the framework of centralized large states, in some cases as colonial empires.

An important term here is the concept of "state-forming nation" (*titular nation*). At this stage, four main principles of national identification stand out: the school, the army, the language, and the writing of national history. European powers were seeking to strengthen their influence by shaping the identity of the nation-state within the framework of school and university curricula, with an emphasis on history of a nation, the development of the literary language. Because, when in 1861 Italy was created as a single state, only two percent of Italians used literary Italian language on a regular basis. It is widely known the statement of famous Italian politician, Massimo d'Azeglio: "We have made Italy, now we have to be Italians" (Hom, 2013).

It is notable that after the *Risorgimento*, when the first parliament of Italy was convened in Torino on March 17, 1861, Italians from different regions gathered - from Piemonte, from Toscana, from Basilicata, from Sicilia, from everywhere. But what language could they speak to each other? - in French! As those times literary Italian was spoken by an absolute minority. There were many languages and dialects. The Italian language had to be recreated. And the same way as today's language of universal communication is English, but in previous eras it was Koine Greek, then *lingua Latina*, and later the French took over this function in Europe.

Another example was France itself. Being an "older" nation with a centralized single state, France faced the similar language matter: when The Declaration of the Rights of Man and Citizen was proclaimed and printed in 1789, out of 85 French departments, only 15 departments could read it in French! Only a small percentage of the French spoke literary French, the rest used local dialects (Forrest & Jones, 1991). The same

problem will later arise in Italy at the time of unification. And the situation was approximately the same in all the newly created nation-states of the second half of the 19th century.

Building a nation is unification, including the matters of language. That is why, since the middle of the 19th century, nation-states have been implementing the principles of unification through schools, universities, the army, and other social institutions. Ironically, all these principles of patriotic education and narratives of national identity were created in order to know clearly: which commissariat, what military enlistment office should people go to, when there's a call to arms, declaring a general mobilization (in the name of the national interests protection).

Obviously, here we should also mention such a hybrid that takes place in the United States, because the Americans call themselves a "nation of nations", meaning an incredible mixture of different ethnic communities, social groups, different waves of emigration. Their unification is based on the socio-political ideals of America. Of course, every nation-building process has its unique details, its cultural, historical and regional features, and some geopolitical imperatives depending on their neighbors. Some of these issues were shown in research works of several authors (Diamond, 2020; Snyder, 2003; Snyder, 2022), demonstrating the total diversity of nation-building tracks.

After the collapse of the Soviet Union, the world was spectating the emergence of new political systems, due to the awakening of nations in Poland, Ukraine, the Baltic countries, Georgia, Armenia, the countries of Central Asia. I.e. after the restraints of the socialist supranational system, explosions of national self-consciousness were taking place everywhere in the post-Soviet space. Simultaneously, in Europe we observe processes of "smoothing" the idea of a nation, processes of unification in the name of supranational projects, such as the European Union.

Now we should mention how the idea of a Nation is defined by leading theorists and researchers of nationalism in our time. T. Parsons believes that the nation is a system of *value orientations*, which are common to members of a given social system. E. Gellner thinks that Nation is a *function* of the Modern era society (Gellner, 1983). It's important to draw attention that he is not talking about any type of society, but only about "modern society" that arose in the era of Modernity, from about the 18th century. The

term "modern" used as a concept, meaning a society changed as a result of industrialization, urbanization, secularization, the development of institutions of the state and civil society.

While T. Parsons proposes an axiological approach to unfold the nature of a Nation, E. Gellner focuses on the functionalist one. Gellner says, the "function" is the key word in understanding a nation. The main task of nationalism, according to Gellner, is the function of mobilizing the community, organizing it and directing it towards the transformation of the entire socio-economic system. Thus, the nation becomes a political instrument for renewing the economic system.

E. Gellner also says that, principally, the carriers of the national idea in the second half of the 19th century were small groups of intellectuals. He gives an example about Ukraine. What was Kyiv or Kharkiv as centers of the Ukrainian national idea in the middle of the 19th century? There were only a few dozen houses of local elite, and only several thousand people, the intellectuals who dared to write texts and speak openly about the national idea. Only a few thousand people, considering that the population of Kyiv at that time was already about six hundred thousand. The same was true for Poland and Romania. And this was a pan-European tendency: there were some enlightened minority who were "sick" with an important mission - to wake up the Nation. Gellner believes that the modern idea of the Nation arises only in the industrial system of economic relations. The process of industrialization brings to life the idea of the nation, because it became necessary to mobilize the productive forces, and it is easiest to group them around a certain political center, on the basis of the national idea. Thus, the Nation is assessed as a kind of mobilizing function in socio-economic context.

A powerful wave of national unification is happening in Ukraine since 2022 due to the direct military invasion of Russian troops. Of course, it is not a national movement as it was on the eve of the First World War. But the mobilizing function of the National idea is rather obvious: Ukraine uses national rhetoric as a tool for strengthening Ukrainian defense potential. Here the Nation concept is not only a means to show cultural uniqueness (in the meaning that Ukrainians are not a kind of Russians, and Ukraine is not a part of Russia), but it's also becoming a function to unite efforts in resisting the imperial ambitions of Russia, in Ukraine's desire to save its statehood, and to follow the

vector in the development chosen by Ukrainian society. From the one hand, Ukraine is trying to survive as a political nation. From the other hand, most of Ukrainian society aspire to a supranational structure because the European Union, being a union of European Nations, stays *above* any nation, though Ukraine considers such integration as a "key national interest". This picture looks rather complicated.

B. Anderson interprets the nation as an imagined political community, an image, which is the result of a collective imagination. Nationalism, - he says, - is not the awakening of nations to self-consciousness: it invents nations where they did not exist before (Anderson, 2016). Thus, under the metaphor of "awakening nations" we are talking about their construction, about the creation of nations for some purpose, not natural, but artificial.

H. Schulze says, at the beginning of the 20th century, the idea of the Nation takes possession of the masses (Schulze, 2004). In other words: what in the middle of the 19th century was the deed of educated minorities, with the beginning of the 20th century becomes a mass phenomenon, and this mass movement spreads over various countries and territories. The pan-European military-political crisis, which has become a global crisis in 1914, has led everyone to realization of the need to create some kind of universal levers for managing political processes, and broad institutions for coordinating national interests, associated with a collective security policy. We can recall W. Wilson's "14 points". One explicit result of his efforts was the creation of the League of Nations in 1920. Though it didn't cope with its task to prevent the Second World War, but it became a predecessor of the United Nations. And the very names of the mentioned organizations - the League of Nations, the United Nations - is an obvious recognition of the importance of the Nation concept at the global level.

We have already mentioned Abbé Sieyès (1748-1836) who wrote a pamphlet "What Is the Third Estate?" (1789), changing discourse from 'aristocratic' one to the 'revolutionary': not the nobles are the core of Nation, but people's masses. In the Romanticism epoch, the emphasis was finally transferred from "three estates" to the people as such, and the whole people became a system-forming element. The Ukrainian historian and politician M. Hrushevsky in his monograph "History of Ukraïna-Rus'" (1898) was already writing about the People (of all classes) as the main subject of

history (Hrushevsky, 2021: 418), not only about the third estate.

A significant role in this expansion of the interpretation of the "nation" concept was played by E. Renan (1823-1892). His lecture at the University of Sorbonne in 1882 - "What is a Nation?" - is known for the statements that a nation is not identical to a race (at that time racism is gaining momentum, forming a kind of triangle: empire - nation - race). Any nation is an ethnic mixture. The nation is also not identical to the language, otherwise how to explain the separation of the United States from Britain, or the countries of Latin America from Spain? A nation is not a religious unity either, since Europe is multi-confessional. And a nation is not a geography. Then what is a nation? - Renan asks. - This is a great solidarity established by the feeling of sacrifice.

Renan says about it: "Man is not a slave neither to languages, nor religions, neither to river flows, nor mountain ranges. Mountains don't know how to carve out countries... Only a great gathering of people with common sense and a burning heart creates a moral consciousness called a nation" (Renan, 2018: 102).

The existence of a Nation implies a "continued consent". E. Renan uses a metaphor that a nation is "a daily referendum". A crucial aspect of national identity involves the ongoing willingness of individuals to be a part of their nation. Renan characterizes a nation as a perpetual "daily plebiscite". Switzerland serves as a notable illustration of a nation created through the collective choice of its people (Renan & Hapgood, 2010). The same argument could be properly defined by the German term "Willensnation" ("nation-by-volition"), used to describe the status of any federal state created by people's choice, not necessary along ethnic boundaries or religious belonging.

Another thought-provoking proposition is that nations are founded not only on collective memory but also on what they deliberately choose to forget together. This idea is commonly cited in studies related to history and political science that explore nationalism and national identity issues. The act of intentionally forgetting, especially when it involves unpleasant historical truths, can sometimes play a pivotal role in the establishment of a nation, or its strengthening. Such an idea derives not only from Renan's works, but also from some resent

works related to national questions (Westover, 2004).

Among significant things Renan says about a nation's nature, there is frequent confusion between the idea of nationhood and of racial or linguistic groupings. Renan believes that nations developed from the common needs of the people, who consisted of different social and cultural groups seeking a "collective identity". Renan discredits the theory that race is the basis for the unification of people. It is important to note that France was quite ethnically diverse during the French Revolution, but it nevertheless managed to set the stage for nationalism. Renan also asserts that neither language nor religion are basis for solidarity because language invites people to unite, but does not force them to do so, while religion has become an individual matter (Renan, 2018: 147). Any nation-forming experience is the mixture of races, origins and religions, where conquering people often adopted the religion and manners of the people they conquered. The classical example is China during the Yuan Dynasty (Stovpets, 2020: 63).

E. Renan comes to several profound conclusions: a Nation is "a will", which is superior to language, ethnicity, and religion; a Nation is "a soul, a spiritual principle" that constitutes on the past and the present. The past contains the moments of national glory and national dishonor, the common possession of a rich legacy of historical memories. And the present consent means people's desire to continue living together, their wish to keep on making investments in the heritage they have jointly received. In other words, the Nation is a *regularity*. And the national unity rests upon common memory of past glories, and shared ambitions for future collective achievements.

E. Renan foresees that nations may leave the scene for a while, he sees the future of Europe as a confederation. He reflects on this just several decades before the First World War, when these nation-empires clash with each other in brutal massacre. Important characteristic features of the development of European nations at the beginning of the 20th century were imperialism, colonialism, authoritarianism: in Europe, there was practically no country where wasn't authoritarian regime, maybe excepting Britain, but it was imperialistic and promoted the idea of "British superiority".

On the eve, and after the First World War, nations (both old and new) disputed priority and fought for their "living space" (DE:

'Lebensraum'). Here we mean not only Germany, France, Britain, Russian Empire, but also those nations that were reborn on the ruins of the Ottoman Empire: Greece, Bulgaria, Romania, Serbia, Albania, etc. The Wilsonian principle of the "right of nations to self-determination" found expression in the surge of nationalism in the first half of the 20th century, when a lot of new states formed on the basis of 'national identity' suddenly appeared in Europe. The fact that it is dangerous was understood even before the First World War, since the Balkans had shown - what is the national idea in action! Having freed themselves from the power of Ottoman Turkey, the Balkan peoples immediately made the Second Balkan War (1913) between each other. And each of these nations believed that their time had come: the Bulgarians began to revive the "great Bulgaria", the Greeks - the "great Ellada", the Romanians - the "great Romania", and the Serbs - "the Great Serbia". As we know from history, that was not for a long time, as the geopolitical balance has changed after 1918.

After the Second World War, the stage of aggressive building of nation-states faded somewhat, giving way to two supranational systems - the socialistic and liberal-capitalistic. One of the hegemonies, the Soviet Union, was building a supranational system. At the same time, the revival of the national cultures of the Soviet republics was imitated, while an active external work was being carried out to support national liberation movements in the colonies of the West. This ideological game of the Soviet Union, known as "national liberation movements", nowadays transformed into anti-colonialism, was a naturally disadvantageous ideology for the West (as European countries still continued to exploit the developing countries all over the world). So, on contrary, the West began to make main focus on human rights and fundamental freedoms, i.e. on universal values, which are all *above* any nation.

## Conclusions

Reflections on the meaning of various works on the origins of nations as political and sociocultural structures exemplify a social-constructivist understanding of the nation. The retrospective analysis of 'national' discourse allows us to conclude that, during the recent five centuries, the humankind observes a gradual shift in the Nation concept interpretation. In the ideas of the 16th - 17th centuries, only the aristocracy represented the nation, being its intellectual, political, financial and ideological core. In the 18th century, the 'third estate' was attached to the

nation and constituted its majority. In the 19th - early 20th centuries, the concept of nation has been expanded to the whole people (any citizen regardless their social class). Although we can evaluate this intricate path that some nations have overcome, and we're even able to extract certain commonalities and general regularities, but still we cannot say clearly - what conceptually awaits the Nation in the next round of globalization.

We tend to support the position that nationhood is not an eternal concept, but changes over time. Apparently, at some point in history, regional confederations in different parts of the world will replace the nations of today, or at least will gather them into alliances based on similarity of some kind. But at the current time, however, the existence of separate nations seems reasonable, as long as this state of affairs serves to guarantee diversity and liberty, in a way which probably would be lost in the unified world without many nations. Each nation brings its uniqueness to our compound humanity.

In the context of the existential crisis that Ukraine is currently experiencing, the nation still can be that mobilizing force that helps unite people in opposition to external aggression. The principle "nation as a function" becomes primary in the geopolitical situation of Ukraine, or any nation like Ukrainians (i.e. those who have a solid historical tradition and cultural background, and long-time experience of living in a single state). In times of peace, the nation could rather be evaluated as a regularity, as an aspiration to preserve people's collective identity, with the support of shared spiritual traditions, cultural values, and social-economic benefits of being together by volition.

Another vision about the Nation's perspectives is though nowadays it seems rather stable and persistent, nevertheless, globally the concept of nation does not have enough resources to influence the world of the 21st century, like it was in the recent centuries. Even multinational, multilingual Europe relies upon common European values, not the national ones. Although probably, from time to time we will become witnesses of a short-term renaissance of the national idea, but most likely the bulk of such processes will happen in the developing countries. While in the West (USA, EU, etc.) both local people, and people who migrated and have been living there for several generations, will definitely remember their roots, will honor their traditions, will remember their motherland (or have some image of it), but mainly - they will live in a global supranational system.

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## Discourse of disease in Lesia Ukrainka's epistolary

### Дискурс хвороби в епістолярії Лесі Українки

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#### Abstract

The article deals with peculiarities of a writer's experience of long-term illness, the influence of the disease on rhythm, lifestyle and creativity, based on Lesia Ukrainka's letters of 1883-1913 to relatives, friends, acquaintances, artists, and public figures. It is found out that the internal picture of the disease has been reflected in the letters with the help of the system of writer's diverse experience, feelings, and emotions. According to the epistolary, Lesia Ukrainka perceived the disease as a yoke, captivity, which prevented her from being proactive, from taking an active part in cultural, artistic, publishing and translation activities. At the same time, the disease built up a discipline, purposefulness of the writer, who worked hard at her educational and intellectual level, in such way cognized her capabilities, outlining the prospects of creativity. The article reveals peculiarities of the disease, changes in the writer's well-being, focuses on creativity as an active resistance to the disease, as a way of achieving self-esteem. The culture of work and rest, attention to the sick body, her scrupulosity in the performance of medical procedures contributed to the creation of acceptable conditions

#### Анотація

У статті на основі листів Лесі Українки 1883–1913 років до рідних, приятелів, знайомих, митців, громадських діячів досліджено особливості переживання письменницею багатолітньої хвороби, вплив недуги на ритм, спосіб життя і творчість. З'ясовано, що внутрішня картина хвороби відображена в листах за допомогою корпусу різноманітних переживань, відчуттів, емоцій авторки. Як засвідчує епістолярій, хворобу Леся Українка розуміла як ярмо, неволю, що заважає бути ініціативною, брати активну участь у культурно-мистецькій, видавничій, перекладацькій діяльності. Водночас хвороба формує дисциплінованість, цілеспрямованість письменниці, яка потужно працює над своїм освітньо-інтелектуальним рівнем, пізнаючи таким чином свої можливості, окреслюючи перспективи творчості. У статті зауважено особливості протікання хвороби, зміни в самопочутті авторки, зацентровано на творчості як активному протистоянні хворобі, способі досягти самоповаги. Культура праці й

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for creative work, which performed a therapeutic function in the life of the writer.

**Keywords:** epistolary, internal picture of the disease, psychology of creativity, drama, body, literary process.

## Introduction

The appeal of literary critics to the epistolary of Ukrainian writers is caused by importance of a number of problems related to theoretical, historical, literary and biographical aspects. Letters are a powerful material for creating a holistic portrait of an artist, forming the idea of creative laboratory secrets, finding out the facts of personal life, temperament, interpersonal relations, the writer's psychological state, as well as the formation of a complete picture of the cultural and artistic movement, the literary process, etc.

In the letters of 1883–1913, Lesia Ukrainka records not only the facts of public, literary and personal life, but also reproduces the course of her illness. Analyzing the writer's epistolary, we start from the concept of "internal picture of the disease", which allows us to reveal fully her character and emotional experiences. The creative process directly depends on the state of the poet's health: when the disease recedes, Lesia Ukrainka revives and becomes more active in public life, she writes and publishes a lot, and vice versa – the exacerbation of the disease prevents creative realization. We find a lot of medical terms, names of physiological processes, procedures and methods of treatment in the letters. A serious illness has effect on the choice of topics, images of poetry and leading motives.

## Theoretical basis

Long time Ukrainian writers' epistolary is of great interest to scholars. That is attested by systematic studies of the theoretical orientation of Zhanna Liakhova (Liakhova, 1996, p. 85-91), Liudmyla Morozova (Morozova, 2006). As well as works on the writers' epistolary of the XVI – beginning of the XVII centuries (Nazaruk, 1994), the second half of the XIX – beginning of the XX centuries (Ilkiv, 2016), 20-50s of the XX century (Kuzmenko, 1998), the second half of the XX century (Mazokha, 2006). A number of thorough scientific publications are devoted to the letters of Ivan Kotliarevskiy, Taras Shevchenko, Panteleimon Kulish, Mykhailo Kotsiubynskiy,

відпочинку, увага до хворого тіла, сумлінність у виконанні медичних процедур тощо сприяли створенню прийнятних умов для творчої праці, що в житті письменниці виконувала терапевтичну функцію.

**Ключові слова:** епістолярій, внутрішня картина хвороби, психологія творчості, драма, тіло, літературний процес.

Pavlo Tychyna and others. Researchers choose different angles of studying epistolary – cultural-historical, psychoanalytic, intimate, they also research letters as a component of a documentary-artistic tradition, as an important segment of cultural-artistic and literary contexts.

Nowadays many issues of the Ukrainian writers' epistolary heritage remain open and need to be studied applying an interdisciplinary approach, current methodology and involving little-known and unknown sources from public and private archives.

Lesia Ukrainka's epistolary has been of interest to theorists, literary historians and textual critics for many decades. For example, Vitalii Sviatovets (Sviatovets, 1981) researched the aesthetic component of the letter, comparing the writer's epistolary to her creativity. Lesia Ukrainka's letters in the book by Ivan Denysiuk and Tamara Skrypka "Noble Nest of the Kosaches" (Denysiuk, Skrypka, 1999) are used as important factual material; Lesia Ukrainka's letters in the works of Solomiia Pavlychko (Pavlychko, 1999; Pavlychko, 2002) are studied in a psychological way. The epistolary dialogue of Lesia Ukrainka and Olha Kobylinska as a manifestation of female friendship is presented in Vira Aheieva work "Female space: Feminist discourse of Ukrainian modernism" (Aheieva, 2008). Lesia Ukrainka and Olha Kobylinska correspondence is presented like "female platonic novel" in Tamara Hundorova's work "*Femina melancholica. Gender and culture in the gender utopia of Olha Kobylinska*" (Hundorova, 2002). Larysa Miroshnichenko in her work "Lesia Ukrainka. Life and Texts" (Miroshnichenko, 2011) highlighted the textual aspects of Lesia Ukrainka's letters. Valentyna Savchuk presented the history of collecting and publishing epistolary legacy of Lesia Ukrainka, analysis of published letters in the source and textual aspects in the monograph "The Fate of Lesia Ukrainka's Letters" (Savchuk, 2011). Serhii Mykhyda (Mykhyda, 2012) made an attempt to reconstruct the psychological portrait

of Lesia Ukrainka, as a modernist. The letters as a psychological text and narrative features of epistolary dialogue of Olha Kobylanska and Lesia Ukrainka are discussed in the monograph "Intimate discourse of the writers' correspondence of the second half of XIX – beginning of XX century" by Anna Ilkiv (Ilkiv, 2016).

### Methodology

The article applies a systemic-descriptive method, which is allowed for a comprehensive characterization of the writer's epistolary, in which the discourse of illness is represented; the biographical method contributed to understanding the unity of the writer's life and work; the cultural-historical method was applied to comprehend the specificity of the historical era; the principles of hermeneutics, receptive aesthetics, and comparative approach facilitated the study of stages and specifics of the course of illness, told in the letters of Lesya Ukrainka.

### Results and discussion

As we can see, Ukrainian epistolography is dominated by works in which Lesia Ukrainka's letters are studied in a psychoanalytic way. The objects of this study are Lesia Ukrainka's letters of the 1876-1913 at full length (published in 3 volumes at the Publishing House "Komora" in 2016-2018), which contained long-term resistance to the disease that has affected on quality of life, creativity, formation of life guidance, views on the writer's place in literature, etc. The information about her illness recorded in Lesia Ukrainka's epistolary is an important segment of cognition of the psychological type, the writer's creative laboratory, as she noted in a letter to Olha Kobylanska dated May 29-30, 1899, paraphrasing Goethe, "who wishes to understand the poet must go to the poet's clinic". In this article the key theses on the impact of the disease on the life and creative work of Lesia Ukrainka are formulated on the basis of a summary of numerous facts from Lesia Ukrainka's letters, which (in view of the article volume) are presented in fragments. The thematically close quotations stated in the material testify not only chronology, but also peculiar continuity of the problem raised in the letters, its long-term "presence" in the complex system of the writer's experiences.

In spite of censorship, letters for Lesia Ukrainka were an active channel of communication not only with relatives, but also with cultural and

artistic movement in general, because she had been far from home – abroad, for a long period of time, and regularly reported about her health, as well as creative, publishing, and public affairs. Besides, the writer did not have a diary. Dialogic, emotional and informative connection with the world is the main argument in favor of Lesia Ukrainka's epistolary. In addition, the primary role was played by an external factor – the disease took her time even to write letters, and therefore, diary was out of question. For Lesia Ukrainka letters were an opportunity to be heard, *to speak of* the disease, to share creative plans, to discuss literature and ways of its development with Ivan Franko, Olha Kobylanska, Mykhailo Pavlyk, Ahatanhel Krymskyi, Nadiia Kybalchych and others. Sincerely and as truthfully as possible Lesia Ukrainka wrote about her illnesses, pain, and general health, trying to hide nothing in the letter to Olena Pchilka, "dear mammy", in such way called always by her daughter. Only a few times, in 1901 when blood began to flow from the throat. In 1902 when pulmonary tuberculosis was suspected. In 1903 when "insomnia and nerves were stuck, the temperature was over 37°C" (Ukrainka, 2018, p. 41) and it was necessary to use morphine and chloral hydrate to have a rest, Lesia Ukrainka kept silence about her health not to disturb her relatives. In different periods of her life and illness she had "trustees" to obtain truthful information about her health, they were Mykhailo Drahomanov, Mykhailo Pavlyk, Antonina Makarova, Olha Kosach (a sister), Olha Kobylanska and Mykhailo Kryvnyuk. Such ethical and personal approach in correspondence testifies to the culture of feelings and emotions of Lesia Ukrainka that was formed in difficult circumstances, her willingness to share intimacy only with like-minded people who would accept her thoughts with understanding.

The history of illness is reflected in the epistolary of Lesia Ukrainka quite fully, along with the recorded facts of personal, literary, public life of the writer, as well as her relatives and acquaintances. Psychologists actively use the term "internal picture of the disease", that is conscious or unconscious reflection of physical condition in the human psyche. The scientists are convinced that the internal picture of the disease depends on the patient's personality, his general cultural level, social environment, upbringing and is formed under the influence of knowledge about the disease. All these factors should be taken into account when someone studies Lesia Ukrainka's letters, considering that a lot of those things, that has been felt and experienced were

left unwritten, because physical pain (often unbearable) cannot be described and fully expressed even by such a talented person as Lesia Ukrainka.

The writer noted that she had “an extremely Ukrainian and even special Volyn nature” (Ukrainka, 2017, p. 125). And in another letter she stated: “I start to believe in my nature – quite enduring” (Ukrainka, 2016, p. 166). “Optimism and pessimism, as I am convinced, depends mostly on temperament” (Ukrainka, 2016, p. 226), and added: “Who knows, whether I have so much optimism by nature, or there is another reason...” (Ukrainka, 2016, p. 317). Admirers and researchers associate Lesia Ukrainka with a strong-willed and always optimistic person. However, the letters somewhat destroy this established idea. Her health-correlated optimism was focused on creative activity: when the disease receded, Lesia Ukrainka revived and became more active in art, public life, she wrote a lot, published, and vice versa – exacerbation of the disease caused pessimism, hysteria, anxiety, because the disease took away precious time needed for active work, hinders creative fulfillment. Lesia Ukrainka’s letters of 1883-1913 speak about pain in her arm, legs, and kidneys, about nervous disorders and extreme weakness, about the fact that she cannot sit for a long time. “My leg is not good, it is getting worse and worse” (Ukrainka, 2016, p. 104). “The leg gives trouble as always” (Ukrainka, 2016, p. 404), that “walking and riding are equally difficult” (Ukrainka, 2016, p. 259). “My health is so-so” (Ukrainka, 2016, p. 396), and even “nerves begin to go out of obedience” (Ukrainka, 2016, p. 427), “start again from the beginning” my tuberculosis epic and because of it my energy does not increase” (Ukrainka, 2018, p. 372). Generally, Lesia Ukrainka is quite restrained in concluding about her health. “... if it were not an anemia, it would be very good, well, but finally it’s okay – if it can’t be absolutely good, then let it be at least not bad” (Ukrainka, 2016, p. 330). However, the information received from doctors about the disease (tuberculosis of the kidneys) was described in details in letters to her mother and sister Olha (who was a doctor) in late 1907 – early 1908.

Duration of the disease, long-term palliatives formed in Lesia Ukrainka awareness of disease chronicity, which had to be accepted and taken into account during life: “it (sick leg. – L. H.) cannot be the same like in other people. It has shortening and chronic dislocation, because after all the bones in it are not as they should be and it cannot be cured” (Ukrainka, 2016, p. 277).

Subsequently, tuberculosis is spreading rapidly to the lungs, kidneys. Lesia Ukrainka understood that she had seriously – physically and morally – to prepare herself for a long-term struggle with pain and illness for the sake of life and creativity. After the conclusion about renal tuberculosis and ways of its treatment, she remarks in a letter to the Hrinchenkos, dated February 21, 1908. “The worst prospect for me is that I have to live the rest of my days in a foreign land, because renal tuberculosis demands a very dry and hot climate, but where can I get it in Ukraine?” (Ukrainka, 2018, p. 372). The topic of the foreign land bothered Lesia Ukrainka constantly, this fact evidenced in her letters (“And the worst is that I dislike abroad. Despite the fact that I have lived there for a long time, I have not got accustomed to it” (Ukrainka, 2018, p. 443). “Who doesn’t need to go to foreign country, even a beautiful one, is the happy one, though not always aware of his happiness” (Ukrainka, 2018, p. 452)), and in her works (for example, poetry, dramas “Boiarynia”, “The Orgy”, “Babylonian Captivity”, etc.) and personal experience. The treatments in resorts far from home were not only a financial burden on the budget of Kosach family, but they also exhausted Lesia Ukrainka emotionally (lack of communication, inability to be constantly active in literary, artistic, social, political life, etc.). Such a long “context” of circumstances was a kind of impetus for writing a drama-extravaganza “Forest Song”, in which she reported missing motherland in philosophical symbolic key. The image of Mavka, which she had “kept in mind” for a long time, which was fascinated her “for ages”, was actualized abroad (in the Caucasus, in Kutaisi). The writer called the days of work on the “Forest Song” “the right time”, which is somewhat paradoxical, because this “right time” was provoked by nostalgia. Far from home her identity was actualized and her home became closer, more necessary, and more understandable. It is possible that such a powerful artistic work could appear in a short time abroad. Having been in treatment abroad for a long time, immersed in the disease, feeling its destructive effect on the body, Lesia Ukrainka turned in upon herself, into the understanding of her body and its resources, prospects, although not entirely happy. “Oh, it’s not so much fun to stay all year alone, although there is clear sky and blue sea!” (Ukrainka, 2016, p. 158), – she wrote it in a letter to Mykhailo Drahomanov, dated September 3, 1891. Lesia Ukrainka was experienced and tempered by distance, she appreciated moral and financial support of her relatives (when I am at home “I don’t feel excluded in the world” (Ukrainka, 2016, p. 161),



and she reconsidered her relations with other writers.

Lesia Ukrainka's letters contain many medical terms, descriptions of sensations, procedures (for example, stretching), postoperative states (for instance, during her staying in Berlin in 1899 and preparation of a plaster device for walking), etc. In such a way the internal picture of the disease is captured, there is a holistic (with a body-centered perspective) image of a strong and disciplined patient who fights hard for the life, wishes to make a complete recovery: "... I have to fight for my life, and somehow ...keep my strength up" (Ukrainka, 2016, p. 133). Lesia Ukrainka expresses her hopes for recovery and a conscious attitude to a long struggle with the disease in her works. For example, in a letter to Mykhailo Kosach, dated May 18, 1890, she quoted a hopelessly reliable poem. "I am on a steep flint mountain / I will lift a heavy stone, / And, carrying that terrible weight, / I will sing a merry song", summing up: "I have about a dozen such poems. So many topics and so little time!" (Ukrainka, 2016, p. 100). So alone, with help of her own intellect, efforts and work (of course, not without the support of relatives) Lesia Ukrainka created a safe space for herself. In the letters, she described pain with varying degrees of severity and duration (weak, aching, unbearable, permanent, and temporary) – when she had pain in the head, neck, arm, throat, lungs, leg, heart. "I say more than once that my nature is "chronic", because really everything in me is chronic, both illness and feelings. As anemia, tuberculosis, hysteria, and friendship, love and hate" (Ukrainka, 2017, p. 133), – she wrote it in a letter to Olha Kobylinska, dated May 29-30, 1899.

Lesia Ukrainka described treatment in Kyiv, in Kharkiv region by the folk healer Paraska Bohush; in Berlin, she noted the results of consultations with leading doctors in Italy, Germany, Austria, Switzerland, and she emphasized the changes in the course of the disease. Here is, for example, how the state of health was described after injecting a triple dose of iodoform in Kyiv in the winter of 1897 and using morphine to relieve pain. "It was a very hard time, I hardly came to my senses and I would not allow to do experiments like triple doses of iodoform and other "forced" methods" (Ukrainka, 2016, p. 426). The consequences of iodoform for the weakened organism were severe – "a seizure of forgetfulness with delirium" (Ukrainka, 2016, p. 426). These are the states in which the writer *had to be* in order to live and work.

Lesia Ukrainka's relatives helped her to endure the unbearable pain, as well as correspondence with close people and, of course, the hope for her recovery. "I am going to stay in the hospital until May (this is the period when the body had to recover from the injection of iodoform in winter 1896 in Kyiv. – L. H.), and then maybe this devilry with my leg will pass forever" (Ukrainka, 2016, p. 426). However, there was a long treatment ahead – difficult and exhausting. After treatment in Kyiv, Lesia Ukrainka felled unwell, she could not get up for a long time, that's why she wrote little, lying down and by pencil, because she didn't want to strain and tire her leg by sitting at the table. The complexity of the health situation and at the same time the optimistic attitude of Lesia Ukrainka is expressed in a laconic-categorical conclusion from her letter to Mykhailo Kryvyniuk: "... I have to learn walking..." (Ukrainka, 2016, p. 440). It was 1897 and the 15 years of disease, and the next 15 years would not be less difficult for her body and creativity years.

*Captivity of illness* has a detrimental effect on well-being, way of life, creativity, even handwriting: "...while *rewriting* (here and further in the quote it is Lesia Ukrainka's italics – L. H.) for "Bukovyna" <...> two poems, then laid down three times (to rest. – L. H.) – did anyone hear that?" (Ukrainka, 2016, p. 100), "And my countless "topics"– What will be with them, with my poor orphans?" (Ukrainka, 2016, p. 100), "It is one more trouble, because of *some* (here and further in the quote emphasis were made by Lesia Ukrainka. – L. H.) unknown to me reason, my handwriting becomes even *worse* than it has been!!! It is said that misfortunes do not come single" (Ukrainka, 2016, p. 101). "I don't feel like writing, there is no balance of the soul" (Ukrainka, 2016, p. 116). "I feel that I have somehow lost my temper and I'm sure that no matter what I write, nothing but nonsense would have appeared" (Ukrainka, 2016, p. 161). "I lost my mental balance, and here you have already known there is no style" (Ukrainka, 2016, p. 337), "I do not feel so good to be witty" (Ukrainka, 2016, p. 399). This is a conscious, recorded in numerous letters of the writer's inner understanding of the disease.

The operation in Berlin in 1899, which Lesia Ukrainka hoped for, and called it the "last card", abruptly took away several months of her creative life. Medical procedures required special efforts from the patient. In her letters to her family, she recalled that after the operation, the dressings "were so hard that one could go crazy. The last three nights I can sleep only with help of

bromine and sulfonal, and first of all I could not sleep without morphine. Delirium and all sorts of such things did not give peace of mind to me or to my mother <...>. Then my nerves were so torn that I have been just afraid to write a letter not to frighten people with my mood" (Ukrainka, 2017, p. 105). "Lying on my back, very flat and low, in plaster estate, this pose is not poetic and not literary, so I do not write anything but letters <...>. For such purely mechanical reasons, I forgot that I am a writer" (Ukrainka, 2017, p. 113). "...the pose was unfavorable, and the mood was even worse, – I did not want to show cowardice, so, all that remained was to keep silent" (Ukrainka, 2017, p. 115).

According to the epistolary, Lesia Ukrainka was not satisfied with "plant life". She strove to work – to write works of art, critical articles, to take an active part in public and political life. Also to translate and to publish books, to collect and record folklore. To prepare for publication Mykhailo Drahomanov's works, to learn languages, to discuss actively with progressive writers and critics such as Serhii Yefremov, Ivan Franko, Olha Kobylanska, Ahatanhel Krymskyi, to visit theater to "learn all kinds of things" (Ukrainka, 2016, p. 118). She wanted "to be printed in order to be independent" (Ukrainka, 2017, p. 501). For her it was "far more interesting than all these anemia, tuberculosis, boredom" (Ukrainka, 2016, p. 416), because, she was convinced, "my body, though bad, is stubborn and capable of a great struggle" (Ukrainka, 2017, p. 431). "One way or another – we will still fight! I still have a long way to go and I think that the *worst* (Lesia Ukrainka's italics – L. H.) has already passed" (Ukrainka, 2017, p. 437). However, as we know from biography of the writer, it did not pass and the disease progressed. So, a letter to sister Olha Kosach, dated September 10, 1909, convinces that the passion to work does not disappear: "... I have a lot of grandiose literary ideas right now and I would like to delay the time of complete disability..." (Ukrainka, 2018, p. 445). The writer had many plans; she strove to fulfill herself, to tell the world important things about literature, to explain to Ukrainians who they are.

Lesia Ukrainka innate desire for self-fulfillment (according to Charlotte Bühler) was supported by her variety activities, which contributed to her intellectual and cultural improvement, growth of her ability to fulfill in difficult life circumstances, with a seriously ill and exhausted body. The writer read a lot, actively responded to notable cultural and artistic events. She was a participant and in-depth analyst of the Ukrainian and foreign

literary process, as evidenced, for example, by articles "Two Directions in Modern Italian Literature (Ada Negri and d'Annunzio)", "New perspectives and old shadows (A new woman of the western European fiction)", "Notes on the latest polish literature", "Utopia in fiction". As well as letters to Mykhailo Drahomanov, Olena Pchilka, Ivan Franko, Mykhailo Pavlyk and others. Creativity was a spiritual need for Lesia Ukrainka, an opportunity to change reality by adjusting to the course of disease, a way of self-expression, self-affirmation and adaptation to the social environment. Creativity increased the level of her internal and external organization, resisted disease, apathy and monotony of life. While working, she felt needed. With the help of her work, Lesia Ukrainka changed reality in accordance to her views of the world, art, the role and significance of an artist in society.

The works addressed to readers expanded Lesia Ukrainka opportunities to be present in society, to be active in literary and cultural life. With the help of literary characters who are in extreme situations, she sought to share with the public her experiences of strangers, nostalgia, knowledge of pain (physical and moral), loss, strength and weakness, power and powerlessness. Enduring another battle for health, to reveal herself to the reader existentially, emphasizing the strong-willed neo-romantic character ("In the Dense Forest", "Babylonian Captivity", etc.) (Bodyk, Horodniuk, Fedorova, 2022). Literary critic Hanna Levchenko (Levchenko, 2013, p. 71) notes the general constitutional tendency of the poetess psyche to hysteria, introverted intuitionism and enthusiastic steroid accentuation of Lesia Ukrainka's personality. It, according to the researcher, led to the emergence of images of mythologies and religions in her lyricism, stylization of literary genres, to interest to early Christianity in drama; steroid accentuation of character influenced the formal and semantic properties of the writer's works. In a letter to Osyp Makovei, dated June 9, 1893, the writer noted that she wrote "mostly in those days when I have some sorrow in my heart, the work goes faster" (Ukrainka, 2016, p. 201).

Lesia Ukrainka's optimistic and pessimistic mood and the productivity of her creative work depend not only on her health, but also on the seasons. "In winter my strength was failing a little, but in summer I am optimistic as usual, now more than usually" said in the letter to Mykhailo Pavlyk, dated July 29, 1893. And in a letter to Mykhailo Drahomanov, dated April 17, 1894, she added: "I used to believe in spring and summer" (Ukrainka, 2016, p. 276). The warm

season suppresses the disease, promotes health and strengthens the optimistic attitude of the writer, “because I am more optimistic in life than in my literature” (Ukrainka, 2017, p. 151). Lesia Ukrainka went to the sea (the Crimea, Italy), to the mountains in Bukovyna – and the diseases subsided, nerves calmed down, anemia receded, cough and fever did not bother.

We have already had the opportunity to note on the basis of Lesia Ukrainka’s letters from the “Crimean period” that the sea took an active part in overcoming the writer’s illness; the sounds of the sea (that was the music as unfulfilled desire due to the disease) triggered the mechanism of ignoring the disease, healing the soul and body. “It is the sea, which helps Lesia Ukrainka to block in her mind the information about the destructive power of the disease, declares victory over the troubles of life” (Horbolis, 2020, p. 188). Appealing to Lesia Ukrainka’s letters from the Crimea, it is appropriate to speak of the writer’s unsatisfied desires to be physically healthy, happy, that are the driving forces of fantasies, “and each individual fantasy is the fulfillment of desires, the correction of dissatisfied reality” (Freud, 2001, p. 111). Thanks to the sea, Lesia Ukrainka hoped for a significant improvement of health, which was necessary for exhausting creative work. The sea was an alternative therapy for the writer’s soul and body.

It should be added that anxiety, restlessness, emotional and physical exhaustion of Lesia Ukrainka body are caused by family problems. She worried about illnesses of her father and husband Klyment Kvitka, difficult family relationships due to sister Olha relations with her fiancé Mykhailo Kryvnyiuk, who was arrested in 1907. But, perhaps, mostly she worried of relatives and friends deaths: uncle Mykhailo Drahomanov (1895), beloved Serhii Merzhynskyi (1901), brother Mykhailo Kosach (1903), father Petro Kosach (1903) – too much for a sick, but strong-willed person. In such difficult periods of life, everyone wants to “lie down and become a petrified” (Ukrainka, 2016, p. 366), in such way the “hanging letters” were appeared, as Lesia Ukrainka called them. They are full of sadness, longing, despair and hopelessness. The writer endures unbearable pain and exhausting years of medical procedures, but she can barely withstand the irreparable loss of people infinitely dear to her. But the minutes of despair pass, the pain of loss subsides.

During periods of turmoil, Lesia Ukrainka was both strong and weak. She supported her sick

uncle and his family (at that time she lived in Sofia); during her two-month stay in Minsk with the sick Serhii Merzhynskyi, she was also courageous and patient. “He loved my “stoicism” (*firmness*) and did not tolerate “cowardice””, Lesia Ukrainka wrote in a letter to her friend Vira Kryzhanivska-Tuchapska (Ukrainka, 2017, p. 415). Lesia Ukrainka’s letters describe in detail her emotional state after Mykhailo Drahomanov’s death: “I have now become unsociable” (Ukrainka, 2016, p. 370). “Every night I am attacked by such attacks of the sadness that I will one day go mad. I do not know when it will end...” (Ukrainka, 2016, p. 388). “My friend, the anguish is so heavy...” (Ukrainka, 2016, p. 365) and so on. For a long time, according to the letters, she could not accept the death of her brother Mykhailo – she wrote little, the answers to the letters of her friends were delayed for a long time.

Every time accompanying her dear people in the last way, Lesia Ukrainka found the strength to recover. For example, after the death of uncle Mykhailo Drahomanov, in her letters she noted. “If it had been ancient times, I would have been singing Lazar in letters, but now I will probably get used to souring forever, last winter has something changed in my nature. I don’t know whether it turned out for good or for bad” (Ukrainka, 2016, p. 347), “Actually, *we* (Lesia Ukrainka’s italics – L. H.) must have power over ourselves. He (Mykhailo Drahomanov – L. H.) taught me how people suffer disaster and struggle with the fate!.” (Ukrainka, 2016, p. 261).

The bereavement of her beloved Serhii Merzhynskyi, as has been known from Lesia Ukrainka’s letters and creative biography, became the impetus for writing “The Obsessed”, a drama that was a powerful reaction of her soul and body to the injustice, which took away her love. It is a defense against death, loneliness, against thoughts of death, it is a fact of connection “which exists between basic organic attitude of the author and that which is expressed in her works” (Vygotskiy, 1998, p. 287). During writing “The Obsessed” there was, according to Sigmund Freud (Freud, 2001), the transition of subconscious desires into artistic images, into creative energy, so the internal mental conflicts found a way out and they were fulfilled in the work. “Art is a necessary discharge of nervous energy and a complex method of balancing body and environment in the critical moments of our behavior,” – says Lev Vygotskyi (Vygotskiy, 1998, p. 279). Lesia Ukrainka’s *drama of life* and personal experience were embodied in the drama “The Obsessed” with the help of allegorical

images, a corpus of deep philosophical problems. So creativity became a kind of refuge for her emotions.

The disease affected personal and creative life of Lesia Ukrainka, changed attitude, guidelines, values. Illness defiantly took away her music (her dream was to play music professionally). Although for a long time Lesia Ukrainka taught others to play and continued to play by herself, immersing herself in musical imagery, explaining the complex world and herself in it. Music therapy, as has been known from the letters, alleviated her pain in Minsk at the bed of sick Serhii Merzhynskyi.

Lesia Ukrainka did not intend to forget about literature because of the illness, it was the last outpost that gave meaning to live – she had creative plans, as she mentioned, “for three lives” and wanted to implement them successfully, identifying herself with literature, productive activity, not disease. Creativity made her free from illness emotionally, thoughts of illness. It was the creative work, which made Lesia Ukrainka intellectually free from illness. “Individual freedom is the highest value in the coordinate system of Lesia Ukrainka, it is associated with the concepts of “will”, “choice” and “responsibility”, – notes rightly the literary critic Lesia Demska-Budzuliak ( Demska-Budzuliak, 2009, p. 11).

The illness required from Lesia Ukrainka to be attentive to her body, to take medication and perform procedures carefully, adhere to the regime and culture of rest and work. Letters of different years prove discipline and obedience of the patient Larysa Kosach. She has followed the doctors’ prescriptions conscientiously, often sacrificing creativity to please her body: not to write a lot so as not to get tired, to write lying down during periods of deteriorating of health, to walk with a stick to avoid swelling of legs, maintain health at resorts (the Crimea, Italy, Egypt), not to be nervous. In her letters, Lesia Ukrainka constantly expressed dissatisfaction with such prescriptions, “medical bridles”, as she called them. For example, she wrote: “I’m sitting “smeared in the oven”... I hardly bargain for permission to write letters” (Ukrainka, 2017, p. 368), “I’m lying in plaster fetters” (Ukrainka, 2017, p. 107), “Sometimes I am so complaining that one cannot gather me together ...” (Ukrainka, 2017, p. 106).

Despite constant attention to the body, Lesia Ukrainka did not get the desired result: the leg hurt not only in the cold season, but also in warm,

interfering to work, nervousness did not disappear; another hard disease was added – renal tuberculosis. Diseases ruthlessly took away precious moments of creativity, full-fledged communication with relatives, writer colleagues, publishers, public figures. Lesia Ukrainka identified the disease with a yoke in her letters, and in the letter to Mykhailo Hrushevskyi, dated May 12, 1910, she sadly stated about dramatic poem “Rufin and Priscilla”: “I’m not sure that I will have ever written so big (means the volume) thing, because my strength is not return, and still falling. I’m not able even to rewrite the same thing for a second time” (Ukrainka, 2018, p. 477).

Pleasing the body and loosing creativity had a negative effect on well-being – so there was a conflict with her body. Here is a brief chronology of this dangerous feeling for every person, with elements of despair, contempt, apathy, followed by long-term (sometimes, unbearable) pain: “When it (her leg. – L. H.) gets better, it will have been a lot of water under the bridge. Well yes, but now I wish it gets better enough that *it will not interfere with my life* (our italics – L. H.), Oh, if it is not my leg, I could do a lot in the world!” (Ukrainka, 2016, p. 144). “I start getting tired of caring about myself (what can I say! – I’ve been tired of this for a long time), and I start bargaining for the right to sit at the table for two hours a day. Will I ever be free? After nine years of captivity, I learned a lot of skepticism. And, I wish at least for a year or two to be free from my own yoke” (Ukrainka, 2016, p. 148-149). “I am sorry that I have to live like a hermit. I am of no use to people or to myself, but the trouble keeps me so. It would be better...if that desire and that small talent went to someone else, more humane one” (Ukrainka, 2016, p. 160). “My leg has not got better radically yet, and my insignificant body and my 15 years’ illness are blamed of the case that it will have to use a knife” (Ukrainka, 2016, p. 432). “If the devil hadn’t bedridden me ...” (Ukrainka, 2016, p. 435). “...a disabled person like me can make you even more sadness” (Ukrainka, 2016, p. 438), “...because I’m so a disabled person who does not want to show herself in society” (Ukrainka, 2017, p. 127). “Well, I am not so disabled as not to be able to see people” (Ukrainka, 2017, p. 128). “Surgery is killing my muse” (Ukrainka, 2017, p. 140). “...while I’m here (in Berlin, after a complicated operation – L. H.), I’m not a writer or even a person. I’m a surgical orthopedic model ... “material”, not a person” (Ukrainka, 2017, p. 141). “I am a disabled person, a lost to society, *I have no right* (Lesia Ukrainka’s italics. – L. H.) to finish myself” (Ukrainka, 2017, p. 384).

“...finally, I am no longer a person, but a plant” (Ukrainka, 2017, p. 386), “I have a lot of grandiose literary ideas right now (this is about the autumn of 1909 – L. H.) and I would like to delay the time of complete disability...” (Ukrainka, 2018, p. 445). “Now I am, to tell the truth, a disabled person, I just do not want to bear my title formally” (Ukrainka, 2018, p. 448-449). From such a hopeless state for many people, Lesia Ukrainka was saved by creativity, for her it was the only way to restore self-esteem – literature, because “when I write, I live” (Ukrainka, 2017, p. 69), because “...trouble is trouble, but deed is deed” (Ukrainka, 2017, p. 102).

To fulfill herself, the artist looked for a compromise with her body, because the level of her creative activity did not decrease, the goal did not disappear, control over the situation was not lost, the degree of criticism and self-control was not reduced (although, of course there were moments of despair). According to the letters, Lesia Ukrainka adjusted herself to getting used to the pain: “Summer (we are talking about 1898. – L. H.) is passing and I must in advance accept the idea that such attacks of heat and leg pain will be from time to time, because even in the Crimea they have been” (Ukrainka, 2017, p. 69). “Attacks of hysteria, weakness of heart... I will soon get used to them” (Ukrainka, 2017, p. 89). It seems that the writer does not fully understand the danger of these manifestations of the disease. The need to make concessions to the body was also mentioned in the letter from San Remo to Mykhailo Kryvnyuk. Apparently, contemplating about nervous state of the patient Larysa Kosach, caused by the inability to work actively, the Italian doctor allowed her to write: “... the luminary (a doctor – L. H.) reduced my “working day” and from 6 hours left only 4! Although he said that I should not give up the literary work at all, because it can also harmful influence into my psychology – but more than 4 hours I can’t work. “Well, what can I do for 4 hours?! I just don’t know what I should do in such “expensive time”” (Ukrainka, 2018, p. 83). As you know, creativity is an extremely complex and exhausting process due to mental state, external and internal factors. When the subconscious dominates the consciousness, when inspiration comes, intuitive creative activity is optimized, the artist must release this energy into a work of art, to fulfill it in an image, idea, pathos, plot, etc. The classic (and what is important – actually the author’s) illustration of the creative act is the lines from Lesia Ukrainka’s well-known letter to Liudmyla Starytska-Cherniakhivska, dated May 29, 1912, where the

writer noted the state in which she had been writing the drama-extravaganza “Forest Song”. “I write “only in a fit of insanity,” because then I can only fight (or rather forget about the fight) with exhaustion, fever and other depressing symptoms, when I am simply galvanized by some idea fixe, some invincible force. The crowd of images does not allow me to sleep at night, it torments me *like a new illness* (our italics – L. H.)” (Ukrainka, 2018, p. 589-600). This is a powerful inner energy that should be released and to protect creative personality. Otherwise, the blocked creative potential disturbed the author as an unspeakable desire, hurt like physical pain, which was a complicated unstable state of Lesia Ukrainka health. Her abilities and talents were banned by doctors who did not approve (limit the time) of her creative work not to harm her health. However, as it already was mentioned, creative energy could not be stopped. And her failure to turn into a work of art turned into an examination of the author, an inner dissatisfaction, as evidenced by the eloquent lines from her letter to her sister Olha Kosach, dated November 28, 1899. “It is unpleasant to think to myself that the day has passed in vain again, I do nothing neither to me, nor to people <...> I really got tired, when I’ve been writing the abstract, etc., but that was, by the way, healthier fatigue, healthier for both morally and even physically... I cannot take a pen in hand, but is it better when unwritten thoughts will not let you sleep at night? <...> As for me, work is like music, sometimes it serves instead of mustard plaster (moral, of course). So, for example, a month ago, if it was not for my indefatigable, truly inhuman writing, interrupted at times by sonatas and nocturnes, I might have had seizures again, such were the circumstances... So there were no seizures... I know that it is very sublime to use literature instead of morphine, but it is still better than to use morphine instead of literature. This “morphine” does not allow me to get dirty, sour and sleepy – thanks it for that” (Ukrainka, 2017, p. 168). For Lesia Ukrainka, literature becomes, according to Sigmund Freud (Freud, 1998), a means of reconciling two hostile principles – the principle of pleasure and the principle of reality. The writer strives for a full life, and creativity (active, productive) heals her exhausted body, appears as a “function of health and has its own therapeutic effect” (Aheieva, 2007, p. 3). After all, “the psyche is a single whole, and as a whole, but with different activity of certain departments, it protects its homeostasis in problematic life situations” (Titarenko, 2009, p. 187). For Lesia Ukrainka, such “problematic life situations” were an illness and the ban on writing caused by

it, which disorganized her life and work, and caused *fear of being unfulfilled*. This is the “real fear” that, according to Sigmund Freud, “seems to be something rational and natural, it can be called a reaction to the perception of external danger. That is, the expected, anticipated damage; it is associated with the escape reflex and can be considered as a manifestation of the instinct of self-preservation” (Freud, 1998, p. 398). Fears of fulfillment constantly troubled the artist, as evidenced by her works (for example, “The Orgy”, “Forest Song”, etc.). Fear did not leave the writer even in her dreams, as stated in a letter to Lidiia Drahomanova-Shyshmanova, dated October 2, 1896: “I dream that my drama (“Blue Rose”. – L. H.) is playing on the stage and I play the main role by myself... there is an act, there is an intermission, 1st, 2nd, 3rd, 4th – and the audience *does not hear anything* (Lesia Ukrainka’s *italics*. – L. H.), after all, it is the final, it is getting dark on the stage, and the curtains are not lowered. I finally ask – although I do not believe in the role: why do not lower the curtains? Someone answers in a sarcastic tone, “because there is no one in front of!” I look: in the ground floor – “Arabian desert”, empty boxes yawning black, I did not have the courage to look at the gallery. My drama failed...! And I scream in despair: whistle...! You see, it is no longer applause, but at least a whistle!.. But even this desperate call remains a voice crying in the wilderness...” (Ukrainka, 2016, p. 414). It is significant that even in a dream, in this liberated state of consciousness, Lesia Ukrainka is involved in literature; it seems a prophetic-symbolic dream about her drama, about her, as an author, who has been not fully understood by many critics and artists, “revered, but not readable,” as she remarked about herself.

Creativity in Lesia Ukrainka’s life becomes a psychological defense capable of overcoming internal (for example, as it has already mentioned conflict with the body) and external (the impossibility of full participation in literary and artistic life, especially during long stays abroad) conflicts. It is well known that psychological protection is “a system of mechanisms aimed at minimizing the negative experiences associated with conflicts that threaten the integrity of the individual” (Titarenko, 2009, p. 186). Creativity is a psychological protection, which resists adverse circumstances actively, “unconsciously protects him (a human – L. H.) from emotionally negative overload” (Titarenko, 2009, p. 190) and weakens the anxiety of Lesia Ukrainka. Literature becomes for the writer a means of self-regulation of her psychological state. In this context, the study of the bioenergetics influence

of art seems promising, when rhythm harmonizes the mental state of a person. Dmytro Ovsiankyo-Kulykovskiy’s opinion (Lev Vyhotskyi appeals to it in his work “Psychology of Art”) about the nature of lyrics that lifts the spirit, adjusts to the positive, disciplines, calms the nervous system, drives away fear and encourages the psyche. “The harmonious rhythm of the lyrics creates emotions that are different from most other emotions in that way, that they, these “lyrical emotions”, economize psychic power by bringing a harmonious order into the “mental structures”” (Vygotskiy, 1998, p. 280). In the process of creating the works (poetry, dramatic poems, translations, etc.), Lesia Ukrainka’s body and mental organization were “in a harmony” with the verse size, the inner rhythm of the work in this way so the artist continued resisting the disease.

According to the epistolary, Lesia Ukrainka’s attitude to treatment is deeply meaningful, generally positive, even when her weakened body has to endure morphine, bromine, sulfonil “and all this hell” (Ukrainka, 2017, p. 114). She was an active patient, who was trying to understand prescriptions of doctors, the nature and effectiveness of medical procedures, the effects of drugs on her body, as well as to compare the findings of leading doctors in Italy, Switzerland and Germany to understand the prospects of recovery. Of course, during the years of treatment she got tired with resorts, medicines and doctors – those “benefactors of humanity ... who “forget” tweezers in stomachs” (Ukrainka, 2017, p. 131): “I’m full of doctors and medicines” (Ukrainka, 2016, p. 82), “there is no worse than a foolish doctor” (Ukrainka, 2016, p. 325). However, she believed in the effectiveness of treatment, medical procedures, appointments, recommendations, is persistently treated, “to live as *a human* (Lesia Ukrainka’s *italics*. – L. H.), not as a creaking tree...” (Ukrainka, 2017, p. 450). “It is impossible to live as an idle in a sanatorium year after year, but I must learn to “be healthy in normal conditions”. I mean in conditions not of lying down, but of a person” (Ukrainka, 2017, p. 501). Having got sick when she was a child, Lesia Ukrainka had no experience of quality (without disease) adult life, but had a long *experience of disease* in different circumstances. *Being a sick* for decades was transformed into an experience of confronting the disease that has changed Lesia Ukrainka, as researcher Valentin Badrak stated “thoroughly, what is called, to the information and energy structure of cells” (Badrak, 2015, p. 6).

The psychological component of Lesia Ukrainka disease is determined by the writer's attitude to the illness (physical suffering, experience of pain, etc.) and is understood from the position of the writer's reaction to the disease: *being sick, live with the illness* and "*participation*" of the disease in her life.

It is fully justified, we think, there are associations with Friedrich Nietzsche, in whose life, as we know, the disease is constantly present and has led to action, it had an energy stimulus has helped to open new facets of life, to plunge into the life, understand the value and the cost of many things (Nietzsche, 2005, p. 17). *Creativity* was positioned as a *value* in Lesia Ukrainka's life, due to her disease, she cherished life and the significance of it did not decrease with the course of her illness. "The need to repel suffering leads to a huge strain of the intellect, in which a person begins to see everything in a new light, and moreover – a person wishes to live" (Yushchenko, 2013, p. 53). The Ukrainian writer interprets the disease as a givenness with which she has to live, to resist its active manifestations. There are no complaints about what had happened in Lesia Ukrainka's letters. It looks like the *Nietzsche's* idea of "amor fati" is read out in the text – love and respect to one's destiny, perception of everything that happens in life as an opportunity to gain more experience. There are no tragic moods, thoughts about death or suicide in Lesia Ukrainka's letters, on the contrary, a high degree of vitality is read, the conviction that there are no unsolvable problems, and they can be solved by changing the attitude to them. Sickness became a part of the writer's life; Lesia Ukrainka formed her understanding of well-being, which was to be active in literary and artistic life reflected in her attitude to life and creativity. The artist created an image of the world in which the dilemma of "to write or not to write" did not exist. Difficulties, belief in her strength formed her goals: to write, to publish, to translate, etc. Lesia Ukrainka chose creativity, focused on literature, forming creative plans for the future. Having formed over the years the ability to communicate constantly with the disease, the writer consciously took the disease to the background, adjusting to effective work even in adverse conditions and circumstances.

### Conclusions

Lesia Ukrainka's epistolary is an important document, which contains facts of personal life, as well as information about cultural, artistic, political, social realities of the end of the XIX century – beginning of the XX century. It

diversely adds an image of the artist, traits of character, peculiarities of psychological type, makes more vivid specifics of her work, vision of her creative laboratory, worldview, circle of communication, spheres of interests, and also informs about the disease with which the artist had to live and fight to work actively in literature. Against the background of an array of reports of Lesia Ukrainka's life, information about the disease (features, symptoms, treatment, medical procedures, prescriptions of doctors, etc.) presented in letters to relatives, friends and acquaintances is quite extensively. Correspondence is an effective way to "speak" about the disease, talk about it and thus reduce the "degree" of pain.

Lesia Ukrainka's epistolary of 1883-1913 is a kind of primary source of feelings, inner experience, emotional states of the writer; it is a story of a long-term conscious resistance to the disease. The discourse of the disease in letters with a clear body-centered perspective forms a psychological portrait of Lesia Ukrainka, an idea of the culture of her feelings and emotions, emphasizes the role of the body in the fierce struggle for creativity and self-fulfillment. The author of the letters interprets the disease as a yoke, captivity, which prevents her from being active in the literary process, public and political life. The sickness corrects creative plans, increases the level of self-organization of the artist, and becomes a kind of verification of opportunities for the writer, makes creativity as a value that can provide the writer with self-expression, self-affirmation, realization, adaptation to the social environment. Lesia Ukrainka identified herself with literature, but not with disease.

Anxiety and fear of being unrealized, illness and death of relatives and friends, long stay in the treatments far from home had a negative impact on the well-being and creativity of the Ukrainian writer. Attention to the sick body, discipline in following the prescriptions of doctors, the culture of rest and work, the ability to find a compromise with the sick body were aimed at the effectiveness of creative activities. Lesia Ukrainka's intellect freed her from illness in her work.

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## Pension provision in Ukraine: current problems and the experience of some EU States

### Пенсійне забезпечення в Україні: сучасні проблеми та досвід окремих країн ЄС

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#### Abstract

The purpose of the article is to identify the problems faced by the pension system of Ukraine and to study the European experience to overcome them. Research results. The levels of pension provision in Ukraine were determined. The analysis of the current state of pension provision was carried out, and the primary problems affecting it were identified. Draft laws on the introduction of accumulative pension provision were considered, which should solve the issue of the deficit of the Pension Fund budget. Practical meaning. The positive experience of the implementation of pension reforms in some European countries, their stages and features were studied. Value/originality. The ways to overcome certain problems related to the introduction of accumulative pension provision in our country were proposed.

**Keywords:** pension provision, pension system, solidarity system, accumulation system, pension reform.

#### Анотація

Метою статті є визначення проблем, з якими стикнулася система пенсійного забезпечення України, та вивчення європейського досвіду для їх подолання. Результати дослідження. Визначено рівні пенсійного забезпечення в Україні. Проведено аналіз стану пенсійного забезпечення сьогодні, встановлено першочергові проблеми, які на нього впливають. Розглянуто законопроекти щодо впровадження накопичувального пенсійного забезпечення, які б мали вирішити питання дефіциту бюджету Пенсійного фонду. Практичне значення. Вивчено позитивний досвід впровадження пенсійних реформ у деяких європейських країнах, їх етапи та особливості. Цінність/оригінальність. Запропоновано шляхи подолання окремих проблем, пов'язаних із впровадженням накопичувального пенсійного забезпечення у нашій країні.

**Ключові слова:** пенсійне забезпечення, пенсійна система, солідарна система, накопичувальна система, пенсійна реформа.

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## Introduction

Nowadays, the pension fund is a huge burden for our country. As a result of difficult demographic situation, which has existed since the independence of Ukraine and gets worse every year, and with the beginning of a full-scale war, it has generally reached catastrophic proportions; currently there is actually one working person for each pensioner. If we speak in the language of numbers, then, for example, if the first receives UAH 10,000, less than UAH 2,000 is expelled from his (her) salary to the Pension Fund. If we consider that a number of people have a minimum wage (which is what taxes are levied on), and the rest of the salary is received in "envelopes", and some categories of pensioners receive increased payments, then the final amount turns out to be quite meager, and it is simply impossible to survive on it in modern realities. As a result of the current situation, the Fund has been borrowing money from the State for years, and today it owes 74 billion hryvnias.

There were times when Ukrainians received a pension in the amount of 60% of their salary, but now this indicator has decreased to 30%. If this continues, then in 2050, it will drop to 20%, or maybe 10% - Ukrainian and foreign experts have different forecasts (Hromliuk, 2021).

Currently, Ukraine has a solidarity system of mandatory state pension insurance, i.e. obligatory fees are paid to the Pension Fund out of all wages, which are then individually distributed among pensioners. However, this system works when there are many workers and few pensioners. In the conditions of the aging of the nation (especially rapid), it ceases to be effective, and there is a need to search for alternative options. In Ukraine, the option of individual pension provision (or mandatory accumulative pension provision), when each person saves for his (her) future pension account, has been discussed for a long time. However, in case of a sudden transition to a new pension system, two categories will be affected: pensioners who are currently receiving payments at the expense of working people – they will stop receiving money altogether; people who are working now will not receive anything for previous years of work, because they have already had money deducted from the wages already paid to modern pensioners.

At the same time, the pension system of European countries is designed to protect pensioners from poverty and ensure high living standard. For example, Europe is also witnessing

an ageing population, however, it was possible to carry out effective and timely reforms there, which made it possible to modernize it and bring it into line with the challenges of modernity.

Therefore, the purpose of our article is to outline the problems faced by the pension system of Ukraine and to study the European experience to overcome them.

## Literature Review

A sufficient number of theoretical studies has been devoted to the concept of "pension provision", but research is still ongoing, because in the process of functioning, the model of the pension provision requires constant improvement and, as a result, its content and structure change. Therefore, in order to most fully reveal its essence, it is necessary to conduct an analysis of scientific works in this sphere.

Lopakov (2011) emphasizes the duality of the nature of pension provision, which lies in the fact that, along with distribution depending on the volume and quality of work in the past, there is also allocation according to the needs of citizens.

Investigating the issue of pension provision, Danyliuk (2012, p. 258) notes that its essence is manifested in various aspects: legal, social, economic and financial ones. From a legal point of view, pension provision is a set of legislative acts and by-laws regulating pension relations. Its social essence lies in creating the system of protection of the disabled part of the population from social risks (loss of working capacity because of age, disability, loss of a breadwinner, etc.). In the economic context, pension provision is defined as a part of the national income, which is used to support the disabled population in the event of the occurrence of the above-mentioned insurance events. The financial component of pension provision lies in the formation of appropriate state and non-state pension funds.

Didkovska (2012) offers to study this issue in a broad and narrow sense. Pension provision in a broad sense is considered as a set of monetary relations aimed at the formation and use of financial resources of social purpose and part of the funds of the budgets of different levels of the budget system for compensation of losses in the income of citizens who have reached the age of incapacity for work, received a disability or in connection with a loss breadwinner. Pension provision of citizens in the narrow sense is one of

the forms of pension provision in general, which is carried out at the expense of budget funds to all citizens who need assistance, upon receiving the status of disabled, etc.

Therefore, pension provision is a complex of legislative, economic, social and moral guarantees for the elderly, thanks to which equal conditions are created for all members of society, ensuring a socially acceptable quality of their life. On the one hand, pension provision is a functional system (a system of areas of activity), on the other one – an institutional system (a system of institutions providing it) (Buriachenko, 2017).

As pension insurance and pension reform became central topics of policy debate, they became central to the foreign literature on well-being and its formation.

For pension insurance systems as such, the reforms of the last years of the 20th century called into question both the "theory of regimes" and the Bismarck-Beveridge classification, new studies arose with the aim of managing new reforms (Myles & Quadagno, 2000), and creating new pension regimes (Bonoli, 2003).

The idea of institutionally limited and common path-oriented reforms was proposed by Pezier and Schneller (2011) in their study of pension reforms in England and the USA. The main problem is that the established welfare support systems are very difficult to change because of the expectations of the population that they generate. In the arena of pension policy, this refers to the expectations of some individuals, as well as specific groups and associations that have significant influence on policy decisions.

European countries are reforming their own pension insurance systems for the third time since the post-war period, taking into account the high dynamics of transformational processes in the economies of the countries of the world in general and unfavorable forecast and actual demographic indicators. Modern international practice is such that in most countries there are combined pension systems that join state distributive, as well as mandatory and voluntary accumulation elements. The mixed type of pension system is the most effective in terms of financial stability and the level of pensions paid (Stalebrink, 2014).

According to data from the Organization for Economic Cooperation and Development (OECD, 2015), from 2013 to the end of 2015, 26

countries made changes to their pension systems, out of a total of 34 that are part of it. In 9 countries these were reforms affecting the majority of the population. In others, the changes affected certain groups of employees (for example, the private or public sector) or the pensioners themselves.

### Methodology

The validity of theoretical provisions, recommendations for further scientific development of the topic, the reliability of research results is ensured using a set of philosophical, general and special scientific methods applied in the research.

Dialectical method was used to analyze the system of pension provision in Ukraine and to identify its specifics and features.

Structural and systemic method made it possible to single out the levels of pension provision in Ukraine.

Historical method enabled to reveal the peculiarities of functioning of the institution of pension provision on the current stage of Ukraine's development and before the war.

With the help of formal methods, the main definitions used in the study (pension provision, pension system, pension, etc.) were formulated.

Normative and dogmatic method was useful when studying legal instruments regulating the issue of pension provision in our country.

Comparative and legal method made it possible to compare the peculiarities of pension systems of some European countries, the features of their introduction and evolution.

Statistical and sociological methods are used for the purpose of analysis and generalization of empirical information related to the research topic.

Modeling method was applied to formulate proposals on the possibility of using foreign experience taking into account the current situation in our country.

### Results and Discussion

The pension system in Ukraine consists of three levels.

The first level is solidarity system of compulsory state pension insurance, which is based on the principles of solidarity and subsidization and the payment of pensions and the provision of social services at the expense of the Pension Fund under the conditions and in the manner prescribed by law.

The second level is cumulative system of compulsory state pension insurance, which is based on the principles of accumulation of funds of insured persons in the Accumulation Fund or in the relevant non-state pension funds – actors of the second level of the pension system and financing the costs of life pension insurance and one-time pensions payments on the terms and in the manner prescribed by law.

The third level is the system of non-state pension provision, which is based on the principles of voluntary participation of citizens, employers and their associations in the formation of pension savings in order for citizens to receive pension payments under the conditions and in the order provided by the legislation on non-state pension provision (Law of Ukraine No. 1058-IV, 2003).

So far in Ukraine there is a solidarity system, which actually does not work. A year before the full-scale invasion, there were 1.5 workers per 1 pensioner. After the full-scale invasion, about 8 million people left our country – mostly women of working age and children who will remain in the future to work for the economy of a foreign country. The future of pensions will depend on how many people return home, and as sociological research shows, at least half of the citizens express a desire to stay abroad. At the same time, people of disabled age from Ukraine almost did not leave. The situation is worsened by the fact that after the end of hostilities, many people will not be able to work due to injuries and mutilations, and therefore, they will have nothing to pay to the Pension Fund.

The cumulative system in Ukraine has been discussed for a long time – since 2004. In 2019, Rada a Draft Law "On mandatory cumulative pension provision" No. 2683 was submitted to the Verkhovna. The draft law was supposed to establish mandatory participation in the cumulative pension provision scheme of all categories of working persons until they reach retirement age and involve employers in paying pension contributions on a parity basis.

Thus, it was planned that employers would pay 2% of the employees' wages, and system participants (employed persons) would pay

contributions in the amount of 1 % of wages (income). At the request of the employee, the size of his (her) independent contributions can be increased. The employer is obliged to proportionally supplement the employee's contributions with his (her) own contributions in the amount of up to 5% of the salary of such an employee.

The bill offers a composite model of the cumulative pension system, which provides for the accumulation of inputs in the Pension Treasury, the involvement of the Central Administrator to reduce the cost and consolidate services for the administration of personalized accounts of the members of the Pension Treasury, as well as in non-state pension funds admitted to the second standard of the said scheme through authorization.

It was assumed that the participants of the system will have the right to receive one-time payments, accelerated payments, program payments, lifetime pensions at the expense of the funds of the accumulative pension system.

Ultimately, the main task of the bill is to establish cumulative pension system, which should be:

- simple and understandable for system participants, including the same conditions of access for all categories of persons who are system participants;
- cheap, including measures to consolidate certain functions and limit the maximum amount of expenses reimbursed from the assets of the participants;
- reliable, which involves the establishment of prudent investment principles and effective risk management systems when conducting transactions with pension assets (Draft Law of Ukraine No. 2683, 2019).

In 2021, there was an attempt to consider this draft law, but the document did not gain the support of deputies – it was sent for the second first reading, for which 311 people's deputies voted. In November 2022, the Verkhovna Rada postponed the consideration of the bill for an indefinite period.

At that time, experts and employers criticized the proposed innovations, violent discussions raged in society. In particular, it was criticized that in the absence of a developed stock market in the country, there would be nowhere to invest, so that funds could multiply and be protected from inflation. Experts also expressed doubts that the savings of Ukrainians will really be reliably

protected in non-state pension funds (Zhyrii, 2023).

On April 17, 2023, the Draft Law on Cumulative Pension Provision No. 9212 (2023) was registered in the Parliament. According to the published document, it is envisaged to establish mandatory participation in the cumulative pension system of all categories of working persons before they reach the age of 55 and mandatory payment of retirement fees by employers in favor of such employees.

Employers will pay 1% in 2023, 1.5% - in 2024, 2% - in 2025 of the amount of wages of employee. At the request of the latter, the amount of his (her) fees can be increased. The state will co-fund such payments on principles of parity within 3 % of the moderate salary. Funds of the cumulative system, according to the draft law, are the property of system participants in the amount accumulated in their individual accumulative pension accounts, and in the event of a person's death, ownership of pension savings passes to the heirs.

Asset governing of non-governmental retirement funds will be carried out by authorized asset management companies. From 2026, system participants will be able to independently choose the fund, in which they will form their retirement savings. The latter are saved from depreciation by investing in more conservative financial instruments.

Having studied the specified Bill, the Ministry of Finance of Ukraine (2023) notes that State budget expenditures for the implementation of the provisions of the act will amount to UAH 45.6 billion in 2024 (under current conditions). In addition, its performance will require additional funds from the State budget for the creation of an authorized pension fund, as well as for wages and logistics for the activities of the Board of the authorized pension fund, the amount of which cannot be determined due to the lack of initial data.

Under martial law and difficult financial and economic condition in the country, the implementation of the act will divert funds from a limited financial resource necessary to fulfill the urgent needs of the State, which require priority provision, namely: for the needs of the army, the defense ability of Ukraine, the protection of the safety of the population, support the most vulnerable segments of the population, medical care, etc. In addition, Ukraine signed the Memorandum on Economic and Financial Policy

until 2027 with the International Monetary Fund, which provides for a number of quantitative and indicative goals, structural beacons, the fulfillment of which is a guarantee of trust in Ukraine and the basis of close international relations. Therefore, first of all, it is necessary to discuss the issue of possible support for the incorporation of the cumulative system with the representatives of the International Monetary Fund.

The Pension Fund of Ukraine (2023) does not support the draft law in the proposed version, because its norms change the structure of the pension system and the functions and duties of the Pension Fund of Ukraine. Proposal for the creation on the basis of the State Register of mandatory state social insurance of the Unified Social Register, contains gaps in the legal regulation, primarily regarding the definition of the purpose and structure of the latter, the use of its data, and the absence of transitional provisions regarding its implementation will create a conflict in the implementation of the relevant provisions.

The content and procedures of information exchange need to be detailed; there is no legal certainty regarding the administrator of the Unified Social Register, since the Bill contains contradictory definitions and the order of authorization. The proposed method of establishing and the size of the single contribution will cause a decrease in income from its payment for pension insurance, which necessitates the simultaneous legislative provision of compensators for losses of the Pension Fund of Ukraine budget, etc.

In this regard, the State Tax Service of Ukraine (2023) observes that the issue of introducing the second level of the pension scheme should be considered only after an objective determination of the growth of the country's economy, which will enable effective allocation and using the funds of the mandatory cumulative pension provision, because otherwise the collected funds will not give the desired profit for normal functioning of this system, which will lead to the discrediting of its very idea and reputational losses of the State. These risks only increase in the conditions of the economic crisis caused by war in Ukraine.

It is worth noting that during the period of the State's independence, this is already the fifth draft law that deals with cumulative pension provision; in addition, draft laws No. 2683 and No. 9212 are practically identical, that is, the

initiators of the latter did not consider the comments made to its "predecessor", which is why they encountered problems and negative conclusions during its consideration. The main problem that prevents the adoption of the document is the extremely difficult economic situation in Ukraine, which has significantly worsened against the background of hostilities.

At the same time, our pension system really requires reform; according to forecasts by 2050, the ratio between the population of retirement and working age will almost double. In addition, the future of the pension system and the economy in general will be determined by three factors: how long the war will last; how many Ukrainians will return home from abroad; how quickly jobs can be restored or created (Sokolova, 2023).

So let's consider how the problem of the transition to the cumulative system was solved in some European countries.

According to Ovcharenko (2018), Great Britain is a good example of reforming in conditions of uncertainty. Since 2012, a savings system has been introduced there with a parity and insignificant amount of contributions from employees (1%) and employers (1%).

The system worked for almost five years before the increase in contributions. This was specially done to be able to work out all possible questions not in theory, but in practice.

Thus, in the period from October 2012 to February 2018, the British government introduced a system of automatic accrual of occupational pensions. Employers are required to register all pension-eligible workers between 22 years old and the retirement age, who earn more than £10,000 in wages, to a qualifying pension scheme. In 2018/2019, minimum contributions were 5% of income (from £6,032 to £46,350). In April 2019, minimum contributions increased to 8% and remain at this level (OECD, 2021).

To encourage automatic admission, the officials created the National Employment Savings Trust (NEST), a defined contribution workplace pension scheme, to ensure that all employers can access a quality, understandable and affordable retirement system. NEST has a commitment to take all employers willing to set up a pension scheme with them, regardless of their income level.

Prior to the launch of NEST, a transitional body, the Personal Accounts Delivery Authority

(PADA), was established to consult employers and employees on the issues of personal accounts. PADA provided clarification on different matters of the system's operation and organization before handing these obligations over to the NEST (Legislation, 2007).

As Kravchenko (2015) emphasizes in his research, achieving justice in pension provision is becoming more problematic every year, so many countries have recognized the need to reconcile the interests of different generations, which go beyond the sphere of purely public finances. This approach was reflected in thorough preparatory measures for the implementation of the pension reform. Sweden is an exemplary example.

In Sweden, the pension reform took place from the mid-1980s for 15 years, and began with discussions and explanatory work and ended with the final restructuring of the entire pension mechanism. In 1984, the State commission, which studied the pension system until the end of the 1980s, was created. The commission's conclusion was as follows: if nothing is changed, by 2020 the pension system will face insurmountable financial difficulties. At the beginning of 1991, a report was presented, in which it was proposed not to change the pension structure completely, but to introduce indexation tied to the rates of economic growth, and not to prices; raise the retirement age and increase the length of service to obtain a full pension. A parliamentary group on pension reform, which included the members of all parties represented in the Swedish parliament at that time, was formed. The group was headed by the Minister of Social Policy. In 1994, a public discussion of the reform began, and in 2001, Swedes received a pension under the new scheme. Currently, Sweden's pension system is one of the best among European countries (Kravchenko, 2015).

Currently it consists of three parts: state pension, occupational pension from the employer and any savings or assets the employee may have.

The state pension is based on the total income received by a person in Sweden throughout his or her working life. Every year that a person has worked and paid taxes, his (her) salary is deducted for this type of pension.

The Swedish Pensions Agency managers and repays the national state pension, which consists of:

income pension (16% of pension income and other taxable taxes are credited to income pension);

income pension complement (paid in addition to the state pension. An income-based supplementary pension can be received by a person living in Sweden or within the EU/EEA or Switzerland or countries, with which Sweden has signed a social security agreement. The size of the payment depends on the state and old-age pension from other EU/EEA countries or Switzerland);

premium pension (every year 2.5% of pension income and other taxable payments are deducted to this part of pension);

guarantee pension (if a person made or no profit during his (her) working life, he (she) is entitled to this the of provision. This is a fundamental state-guaranteed maintenance which depends mainly on the amount of the state pension, the length of residence in Sweden, as well as on marital status).

The longer person works, the higher his (her) monthly pension will be; this is because the person will receive provision for fewer years and because he (she) will continue to earn towards his (her) pension. Wage dynamics, as well as the individual's chosen premium pension funds, also affect the size of the pension (Swedish Pensions Agency, 2023).

Note that in Sweden, the employee has the opportunity to choose a private pension fund or even several funds from 800 pension funds, where he (she) places his (her) savings with a minimum return of 3% per annum. Investments by pension funds are strictly regulated, including restrictions on investments in real estate or direct loans. Pension funds are supervised by the country's Ministry of Finance, which conducts an annual financial audit and reports on the funds' work to the Parliament (Kravchenko 2015).

In contrast to Sweden, which needed changes primarily for demographic reasons, Poland during the pension reform got rid of the legacy of socialist times. In fact, the old pension system was canceled and a new one was introduced. The reform process lasted only 2 years.

In Poland, a fee of 19.52% of wages (or 16.6% for those born after 1948 and decided to join the II accumulation level) is credited to the conditional accounts of individuals. The conditional interest rate is set at the level of 100% of the salary increase in the amount covered, but not less than price inflation.

In addition, sub-tabs in the Social Insurance Fund (ZUS) are also provided. Valorization of fees to sub-tabs differs from payments to ZUS accounts; in addition, they can be inherited. When reaching the retirement age, the stored capital is divided by «value g» to calculate the amount of provision that the individual will receive. «Value g» is the average life expectancy at retirement age; this process is equitable to the cancellation procedure in the cumulative pension scheme. This value is calculated using the life charts released by the Central Statistical Office.

The maximum amount of contributions and deductions from wages, which is included in the pension, is set at 2.5 times higher than the average base amount for the previous calendar year. In 2019, it amounted to PLN 142,950. Pensions are subject to periodic indexation based on the level of inflation (OECD, 2019).

Germany's pension scheme is one of the best among such systems worldwide. This rating is also constantly improving, as the German government is permanently working on its reform and optimization.

Aware of the fact that the country's population is aging, the government has carried out numerous reforms of the pension system since 2002 to make it effective: we talk about gradual increase in the statutory retirement age and a reduction in the maximum size of the state pension.

Germany's pension system combines a solidarity system, in which certain amounts are deducted from the wages of the working population to provide benefits to pensioners, with supplementary pension plans. The point of the latter is that individuals (on their own or through a professional system) make payments to pension plans to increase the amount they acquire from the State. These models create three levels of the German pension scheme.

In Germany, participation in the Deutsche Rentenversicherung (RV – German state pension insurance system) is mandatory for everyone working in this country (as well as for many self-employed workers); at the same time, each employee is "evaluated" according to his annual earnings. Each must contribute 18.6% monthly (9.3% both employer and employee) from bare salary to maximum contributions (Beitragsbemessungsgrenze). As of 2023, this amount is €7,300 in the BRD and €7,100 – in the DDR. After registration in the pension system, a person receives a unique social insurance identifier (Sozialversicherungsnummer). When

getting a new job, he (she) needs to present it to the employer to track pension contributions.

Contributions for a year with the median wage of all contributors (€43,142 in 2023) earn one "pension point" (Entgeltspunkt). Payments based on lower or higher revenue yield less or more pension points respectively. When an employee retires, the pension points are added up to define the corresponding allowance. If he (she) retires early or later, the benefits will decrease or increase accordingly.

Collective pension schemes, into which employees contribute through their employers, is the second component of the German pension system. They have become quite popular in this country – more than 60% of the population participates in this program, though it was created as a supplement to the state pension plan.

Employers are not obliged to offer pension schemes to their employees, but State benefits and tax incentives make them inviting. They are managed either by the corporations themselves or by retirement associations acting on their behalf.

The third component of retirement system is private pension plans set up through banks and insurance companies. The government motivates the German population to contribute to them by providing certain preferences or tax breaks. At the beginning of their creation in the 2000s, they were not in demand, but recently they are becoming more and more popular (Expat info, 2023).

## Conclusion

The issue of pension reform in Ukraine is currently urgent, because under severe economic crisis caused by a full-scale war, a negative demographic situation, which has significantly been worsened due to the outflow of the working-age population abroad, we need to solve the problems of the shortage of funds and the meagerness of pension benefits for which older persons cannot exist.

Currently, the first level of the pension system operates in Ukraine – the solidarity system of mandatory pension insurance; the second level of the pension system (cumulative pensions) has not yet been implemented, despite five draft laws submitted during the period of independence of our state, designed to regulate this issue, and active discussions on this issue by politicians, economists and the public.

The solidarity-cumulative model, which is characteristic of European countries, was taken as a basis by our State to create its own three-level pension system: state pension (cumulative), mandatory insurance and accumulative (corporate or personal). However, when trying to implement it, the state leadership encountered a number of shortcomings in both the legislative provision of this system and the resistance of the population.

This is because Ukraine has one of the lowest levels of financial literacy among OECD countries and even neighboring middle- and low-income countries according to the USAID research (2021). The concentration of Ukrainians on the short-term perspective does not allow them to think about the future, so the expectation of a gradual increase in personal savings, unfortunately, has no prospects.

Therefore, the primary task is to increase the financial literacy of Ukrainian citizens, to motivate them to honestly pay taxes and contributions, to accumulate pensions on their own, deducting a small part of their salary to the Pension Fund, beginning from the moment of starting their career. In this regard, the experience of Great Britain, where a special body was created to provide clarifications on the functioning of the personal account system, will be useful.

The calculations of the World Bank indicate that in order to ensure at least the current level of pensions in the future, contributions to individual accounts should be at least 10%. But first, to get the system up and running, you can start with a 1% deposit. A higher percentage of deductions in the first stage will create opposition from both employees and employers; and under current conditions, it is impossible at all. According to this principle, the reform in Great Britain was started (Ovcharenko, 2022).

Another urgent question is whether the State will be able to protect these deductions, as the draft law does not contain guarantees for the return of contributions. Note that such guarantees are not available in most countries of the world, with some exceptions (Australia, Hong Kong, Singapore, Switzerland). However, in the conditions of total uncertainty and the extremely low level of trust of Ukrainians in financial institutions, it will be difficult for government officials to convince our citizens of the reliability of such a system.

In addition, the accumulative pension system is impractical if the inflation rate in the country is high (as it is currently in Ukraine). To compensate for it, 35% of the salaries of Ukrainians must be deducted, which, clearly, is a utopia.

However, we have no other options, except for the introduction of a cumulative pension system; the State will soon simply not be able to cover the growing deficit of the Pension Fund. So, the sooner the legislator eliminates the errors revealed by the competent institutions in the relevant draft law and adopts it to regulate this system, the sooner the opportunity will appear to implement this difficult and unpopular, but so necessary project.

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## Research on the brand image of "study in China" in the new era of overseas chinese newspapers and periodicals: a case study of Sin Chew daily in Malaysia

海外华文报刊新时代“留学中国”品牌形象研究——以马来西亚《星洲日报》为例

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### Abstract

This study focuses on Malaysia's Sin Chew Daily newspaper as its research subject. By searching the electronic resource library of the Sin Chew Daily's headquarters, the study obtained relevant reports and comments on "Study in China" from 2013 to the present. The study employed a combination of quantitative and qualitative methods, including data collection, topic classification, text interpretation, and comprehensive analysis to deeply analyze the focus of the Malaysian Chinese society (referred to as "Chinese society") on "Study in China" and the information it implies. The research found that the attitude of the Malaysian Chinese society towards "Study in China" is mostly positive. "Study in China" is seen as a bright and promising opportunity, and the "Study in China" brand is viewed as positive and reliable. Based on these findings, the study puts forward suggestions for improving the "Study in China" brand with the aim of promoting its connotative development and sustainable growth.

**Keywords:** Malaysia, New Era, Study in China, Sin Chew Daily.

### Introduction

This year marks the 10<sup>th</sup> anniversary of China's "Belt and Road" Initiative. Since its inception, international exchanges, and cooperation in the educational field between China and other countries or regions along the routes have become increasingly frequent and intensive, the number of people that are studying in China continues to increase. According to statistics (Ministry of Education of the People's Republic of China, 2019), the top 15 source countries of "Study in China" in 2018 were South Korea,

### 摘要

本文以马来西亚《星洲日报》为研究对象，通过《星洲日报》总社电子资源库搜索获得 2013 年至今“留学中国”的相关报道和评论，采用数据搜集、主题归类、文本解读、综合分析等定量和定性相结合的方法，深入分析马来西亚华人社会（简称“华社”）对“留学中国”的关注点及其背后蕴含的信息。研究发现马来西亚华社对“留学中国”态度多为正向，“留学中国”是光明的、有前景的，“留学中国”品牌是正面的、可靠的，并以此为基础提出“留学中国”品牌提升的建议，以期推动“留学中国”品牌的内涵式发展和可持续发展。

**关键词:** 马来西亚；新时代；留学中国；星洲日报。

Thailand, Pakistan, India, the United States, Russia, Indonesia, Laos, Japan, Kazakhstan, Vietnam, Bangladesh, France, Mongolia, and Malaysia. Among them, four are members of ASEAN countries, and ASEAN countries are important source countries of "Study in China", with Malaysia being one of them.

Malaysia is the first ASEAN country to establish diplomatic relations with China, and also the first country along the route to respond to the "Belt

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and Road " initiative. There are three main ethnic groups in Malaysia: Malay, Chinese and Indian, and the proportion of Chinese is 23%. Therefore, Malaysia is the country with the most complete Chinese language education outside the Chinese mainland and Hong Kong, Macao and Taiwan. However, due to some educational policies of the Malaysian government, local Chinese are constrained by a "Quota System" (Guozhong, 2002: 22-24) in terms of enrollment (admission to the universities is not entirely based on the candidate's grades, but rather on the basis of specific ethnic priorities and then the merits, Malays have a huge advantage). In addition, some Chinese who choose to attend independent secondary schools (not subsidized by the government, using Mandarin as the medium) are not recognized as diplomas upon graduation. Under multiple factors, some local Chinese can only choose to study overseas.

In 2016, the General Office of the Central Committee of the Communist Party of China and the General Office of the State Council issued the "Several Opinions on Opening up Education to the Outside World in the New Era"(Ministry of Education of the People's Republic of China, 2016), which clearly stated that quality and efficiency should be the main focus, and it was required to optimize the country of origin and professional layout of international students studying in China, increase the construction of brand majors and brand courses, build a socialized and professional service system for studying in China, and create the "Study in China" brand. This marks a new stage in the development of Chinese education for studying abroad in China, which is characterized by both quality and connotation development.

Based on the above, this study intends to explore the historical changes of Malaysian Chinese community's "Study in China" in the past 10 years and the brand image of "Study in China" from the perspectives of Malaysian Chinese.

## Literature Review

### Research on the image of China in overseas newspapers and periodicals

The analysis and study of China's image through overseas newspapers and periodicals will help us understand China's overseas image and external propaganda weaknesses, so as to put forward relevant suggestions and countermeasures. Therefore, this field has always been an important place for scholars to work hard. According to the incomplete statistics from the

author, the current research includes research on China's national image from different overseas media perspectives, such as the mainstream English-language newspapers in India, Chinese newspapers in Germany and Indonesia, "The China Press" in the United States, the British edition of the "Nouvelles D'Europe", "Eleven Media" in Myanmar, "Le Monde" in France, "Lianhe Zaobao" in Singapore, Chinese media in Africa, Japan, and Malaysia. Based on quantitative and qualitative research methods, combined with the theories and practices of history, journalism, communication, statistics, international relations and other disciplines, these studies interpret China's national image in overseas media, and put forward strategies and suggestions for China's external image construction. (Honggang, 2013: 34-35)

### Research on brand image of "Study in China"

At present, there is relatively little research on the brand image of "Study Abroad in China", mainly focusing on how to build, develop in a connotative manner, and strengthen the brand. Cui Bo (Bo, 2022: 44-47) comprehensively and dynamically analyzed the historical process and development trend of "Study in China" with a historical development perspective, which emphasized that China's study abroad industry has undergone an important transformation from "nothing to something, from small to large, from point to surface" and then "from emphasizing expansion of scale to focusing on improving quality and efficiency". International students studying in China are witnesses to China's development, and after gaining a deeper understanding of the real China, they will become the "civilian diplomats" who tell the story of China well. Therefore, to satisfy the needs of the times, the "Study in China" in the new era should focus on the promotion of the study in China activities in countries or regions along the "the Belt and Road", pay attention to the trend of education informatization, and accelerate the digital construction of the "Study in China" management front as well as the teaching front. Owing to some controversial events in recent years regarding "Study in China", Qu Qi (Qi, 2020: 54-59) proposed that the assimilation management of Chinese and foreign students should be strengthened, the application qualifications of international students should be strictly enforced. In the context of promoting the opening up of education to the outside world in the new era, create key and high-quality projects for studying in China, take multiple measures to promote the

connotative development of studying in China and strengthen the brand of "Study in China".

### Research on "Sin Chew Daily" and China's image

Sin Chew Daily, as one of the "three treasures" of the Chinese Community of Malaysia (Hua Tuan, Hua Pao, Hua Jiao), is the largest local Chinese newspaper in Malaysia. It has its own historical mission and responsibility in promoting Chinese language education and Chinese education (Weibu, 2008: 7-9). As an influential newspaper within the overseas Chinese media, it is an important way for many scholars to study China's overseas image. From the perspective of "Sin Chew Daily and China", some scholars analyzed the reports of certain policies of China (such as the "the Belt and Road" Initiative) in Sin Chew Daily, so as to obtain the overseas response to the policies. Luo Li (Li, 2017: 91-96) concluded that the overwhelming supportive responses from the Chinese community in Malaysia towards China's "the Belt and Road" initiative based on the relevant reports on "the Belt and Road" in the Sin Chew Daily from 2015 to 2017. The Chinese community generally believed that the "the Belt and Road" was an effective way of regional cooperation and a win-win path of cooperation to promote common development and achieve common prosperity.

Some scholars analyze the characteristics of foreign reporting during a certain period of time, in order to draw the key points of attention from overseas society towards China. For instance, Weng Qian (Qian, 2010: 46-48) utilized the framework theory and content analysis method to study the reporting framework of the "Beast Head Incident", and ultimately concluded that "Sin Chew Daily" has generally constructed a relatively objective and neutral news perspective, with the "human interest framework" being its main framework for reporting on China. Guan Huiqi (Huiqi, 2019: 43-45) took the 2018 report on Sin Chew Daily related to China as the research object, which confirmed that Sin Chew Daily has a high level of attention to China with relevant reports from Beijing, Hong Kong, and Taiwan being the main focus. The report portrays both positive and negative images of China.

Based on the above mentioned, there is a lack of research on the brand image of "Study in China" from the perspective of others in overseas Chinese newspapers and magazines, which provides space for this study. Therefore, this study aims to analyze the changing trends and

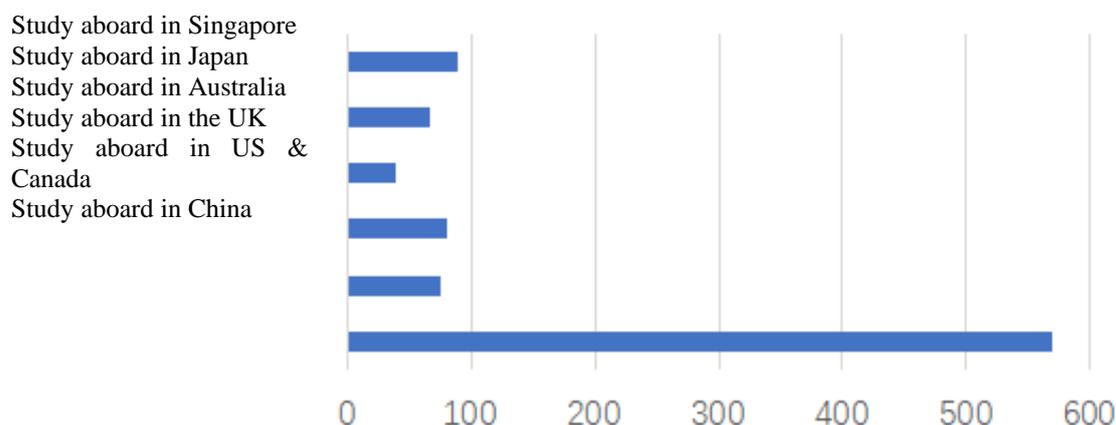
brand image of "Study in China" in Malaysian Chinese community based on the reports on "Study in China" in Sin Chew Daily from 2013 to present.

### Methodology

This research takes the E-resources of Sin Chew Daily in Malaysia as the research platform, and, by adopting content analysis, text analysis and case analysis as the main research methods, conducts an overall research according to the research ideas of data collection, issue classification and text interpretation.

In terms of sample selection, by searching relevant reports from November 2013 to March 31, 2023 with the keyword "Study in China", and then excluding homogenized news and repetitive news, a total of 569 reports about "studying in China" were obtained. In terms of reporting types, related news is divided into two categories: news and commentary, with a total of 492 news articles and 77 news comments. In terms of reporting tendency, the general tendency of related reports was divided into positive, negative and neutral (no obvious tendency was found). Positive reports are mainly objective, the full text of which holds a praise, support and affirmation attitude. The report with negative tendency mainly reveals, satirizes and negates. The neutral reporting means that the full text has no obvious expectations and attitudes, but holds a neutral spectator attitude.

Based on the data analysis, the author found that the number of reports on "studying in China" in this newspaper has remained at about 50 per year since 2013. Perhaps due to the closeness of language and culture, the reports on "studying in China" are far more than those on studying in other countries (see Figure 1). In the contents of the reports, they tend to report on the topics such as exchanges between Chinese and Malaysian universities, information exchanges in China and comments on the prospects of staying in China. Among the 569 news reports, only 12 reported negative information due to China's "zero clearance policy" during the epidemic period, which caused students to be unable to study in China, believing that China's "epidemic prevention changes" and the situation of online courses affected students' learning career. If news is the objective exposition of general facts, then commentary is highly subjective. In the 77 news comments, most Malaysian government officials and scholars gave full affirmation to studying in China, with 52 positive comments, accounting for 66% of the total comments.



**Figure 1.** Distribution of study abroad reports by country (unit: articles) in Sin Chew Daily.

## Results and Discussion

By categorizing the theme, interpreting the text, and comprehensively analyzing the relevant reports and comments on "Study in China" in Sin Chew Daily, it was found that its reporting contents mainly focus on the following aspects:

### Information and content reports on various educational exhibitions, lectures, and scholarship applications of "Study in China"

Sin Chew Daily timely predicts the development of education exhibitions related to "Study in China" and provides follow-up reports on the exhibition situation. For example, the "China Higher Education Exhibition" in Malaysia, which has a long history, has been organized by the United Chinese School Committees' Association of Malaysia since 2003, and held annually in spring at Chinese high schools in Malaysia alternatively with approximately 30 to 40 Chinese universities participating each year; the Association of Graduates from Universities and Colleges of China, Malaysia has been organizing the "Higher Education Exhibition for Studying in China" since 2015, as well as the subsequent "Bridge for Studying in China" China Higher Education Exhibition; the first "HSK China Study and Employment Exhibition" was jointly organized by the Han Culture Centre Malaysia and Chinese Testing International in 2022; the first China-Malaysia Vocational Education Exhibition was hosted by Tang Chinese Education in 2022. These reports provide timely and rich information for students and the public about Chinese and further education, expanding the channels for further education. In addition, there are also information and reports on online promotion conferences of Chinese universities organized by various institutions during the epidemic period, or

national university promotion conferences organized by a certain province in China, such as the "Heilongjiang Province Higher Education International Promotion Conference" organized by the Consulate General of the PRC in Penang and hosted by Heilongjiang University of Chinese Medicine on December 8, 2021. Representatives from 13 universities in Heilongjiang introduced the characteristics, rewards, and other related information of each university online to students from multiple independent and national high schools in North Malaysia. More importantly, it is quite warm that the newspaper will also report on some "New Student Exchange and Explanation Meetings", "Welcome Tea Party" etc., arranged by relevant Malaysian institutions.

In terms of scholarships, China has provided various types of scholarships to students from ASEAN countries, including Malaysia - Chinese government scholarships, Confucius Institute scholarships, Chinese embassy scholarships in China, ASEAN students studying in China scholarships, provincial government scholarships, vocational education scholarships, Chinese government scholarships on the Silk Road, Chinese vocational education scholarships, and scholarships to multiple universities in China, the "Self-Strengthening Scholarships" of the Asia Pacific Tsinghua CEO Chambers of Commerce and Industry. These scholarships are led by different institutions in Malaysia to assist in registration and application. Therefore, the Sin Chew Daily will also provide timely coverage.

From the above, it can be seen that Malaysia has a rich variety of educational exhibitions and lectures on "studying in China", which brings relevant information to Malaysian students and provides them with more possibilities for their

further study. At the same time, the scholarships provided by the Chinese government also provide more opportunities for some students.

### **Report on various training plans and project courses for 'Study in China'**

Sin Chew Daily also timely reports on various talent development programs, such as the "Boya Seedling Talent Development Program" promoted by the Peking University Alumni Association of Malaysia, which benefits independent Chinese high school students; the "Study in China with Scholarships Programs" is jointly promoted by the Malaysian Chinese Cultural Society, NCB Education and the China-ASEAN RCEP General Chamber of Commerce, which has been open to Malaysian students with SPM, STPM, and UEC diplomas since 2016. In addition, there are the "Malaysian Chinese Children's Study in China Guarantee Program" jointly promoted by the Malaysian Chinese Education Advisory Committee and the Association of Graduates from Universities and Colleges of China, the "China Technical and Vocational College Study Abroad Program" promoted by the Merdeka University Berhad, and the "Cultivating Talent Program" (2015) jointly organized by the Association of Graduates from Universities and Colleges of China and Chinese Language and Culture Education Foundation of China.

Sin Chew Daily also reports on timely China-Malaysian cooperative courses and projects. For example, on October 29, 2020, it reported that "The Malaysia Belt and Road Promotion Association, South China University of Technology, and Beijing Institute of Technology jointly organized the International Foundation Program (IFP) for Chinese universities, providing the most affordable study abroad opportunities for Malaysian students with SPM diplomas". On August 2, 2021, it reported that Malaysia Oneworld Hanxin College and Zhejiang Technical Institute of Economics launched a "Cross-border E-commerce" specialist dual-course program, introducing Chinese e-commerce theories, examples and experiences through academic education and vocational training to cultivate top talents in the industry. In addition, on June 30, 2022, it reported on the grand ceremony of the cloud signing and unveiling of the Malaysia International College jointly built by Tianjin Maritime College, Merdeka University Berhad and Malaysia Oneworld Hanxin College."

From the above, it is not difficult to see that various associations and alumni associations in Malaysia are continuously promoting various projects of "studying in China". For example, Peking University Malaysia Alumni Association, Malaysia Overseas Chinese Students Association, Malaysia Nanjing University Alumni Association, etc. Because Chinese education or Chinese education is not the mainstream work of the government education department in Malaysia, it is planned by the Chinese community itself. Therefore, in Malaysia, the role of alumni associations is more important. These institutions not only undertake the work of connecting with relevant Chinese universities, but also act as the "big parents" of Malaysian students going to China, effectively promoting the process of Malaysian students "studying in China" (Junfang, 2021: 45-47).

### **Reports on students studying in China**

Sin Chew Daily places close attention to the reports on students studying in China and contacts students through various means to interview their life experiences while studying in China. Apart from that, during the epidemic, Sin Chew Daily paid a lot of attention to students who were unable to return to China for offline education due to the epidemic. On the one hand, it reported on the government and institutions' appeals to China for promoting the return of Malaysian students to China for classes. On the other hand, it interviewed relevant students and told their stories of "online teaching". It can be concluded that as the largest local Chinese newspaper, it cares about people's livelihood and education. However, between the lines, other information and voices can also be interpreted. In the related reports, some students mentioned that "in the case of simultaneous online and offline teaching, overseas students who need to take classes online have become neglected minorities and helpless 'abandoned babies'." Some students said that they had tried to negotiate with the school whether they could take the online courses that were originally required to be taken offline or replace them with other courses for credits, but it was of no use. "Every time when I wait for an email reply, it takes about one or two days, and the answer is always to let me find other departments." Some students said that "in most cases where classes are presented to us in the form of recordings of classes, there is no system to limit when we must open those uploaded recording of classes, nor is there a visible and tangible peer group to create an uplifting environment for us. Many resources and materials are not as easily available as local

students. During the course selection, in order to avoid troublesome, we also need to observe the assessment methods and weigh them carefully other than our own preferences and abilities. We will confirm the online course situation in a careful manner with each teacher we have never met before and weigh every word and sentence again and again." Between the lines and between words, we can understand the dissatisfaction and helplessness of some students when it comes to "online learning".

Above-mentioned aside, Sin Chew Daily also invited students who have studied or who are studying recently at the Peking University to share their experiences of studying in China and Beijing, and set up a special column "Yan Yuan Chun Qiu" from December 11, 2019 to October 8, 2022. These students shared with readers from their own perspectives about the course teaching, teacher style, campus environment, interesting learning stories, and challenges of online classes at the Peking University. They also shared their perspectives on how Beijing's subway and China's subway have impacted the society that is closely connected with them, giving a new ecology to a place. Some students also shared the current situation of China's medical care and film industry based on their professional studies and internship experiences, as well as analyzed current political issues based on their professional backgrounds. The establishment of this column allows more Malaysians to learn about Chinese universities and contemporary China through the narration of their fellow countrymen.

Telling the story of China from the perspective of international students can bring a greater sense of credibility and authenticity. The "Yanyuan Chunqiu" column is a natural and effective way to tell the story of contemporary China to the people of Malaysia from the perspective of Malaysian students studying in China. Lin Weixian, a 19th-grade undergraduate student at the School of Physics at Peking University, mentioned in "Identity Recognition and Discussions on China" that "In the English-speaking world, many high-quality international reports can be read in newspapers, but there are often deviations when it comes to China... If you want to have a complete world view, it is necessary to correctly understand China." Why not use the voices of international students to tell the real story of China and eliminate prejudices against China in other countries? Nowadays, we can see more and more government departments and universities using various social media to tell the story of China to the world through rich and

colorful forms (such as short videos and text) and let international students speak out for China. This should be the sincerest expression of China's story in the new era. By sharing their experiences and perspectives, international students can provide a unique and valuable perspective on life in China, helping to bridge cultural gaps and promote understanding between nations.

### **Reports on policies related to students studying in China**

Sin Chew Daily emphasizes on China's policies for international students. For example, the policy issue of whether international students in China are allowed to work part-time. In August and September 2017, the newspaper reported on the interpretation of Order No. 42 by the Association of Graduates from Universities and Colleges of China, Malaysia, mentioning the changes in the Chinese government's treatment towards international students working part-time in China, from a complete ban to a "lifting of the ban". International students can participate in work-study activities during their studies in China, but are not allowed to work, do business or engage in other business activities. They can participate in social practice activities to improve their learning and living conditions, enhance their overall quality and support students from economically disadvantaged families. In addition, the newspaper also pays special attention to the interpretation of China's "vocational education" policy, interpreting China's "National Vocational Education Reform Implementation Plan" and introducing the characteristics of China's vocational education and the scope of vocational education. It believes that the reason for China's advanced technology is its solid and hard technology, and the strong backing of the entire technology industry is its "vocational education", which continuously provides timely and appropriate talents for various emerging industries. As Liu Weiyi, the director of Merdeka University Berhad said: "China has built the world's largest vocational education system, deepening the integration of industry and education, training 10 million high-quality skilled talents every year, providing strong human support for social and economic development.

Through relevant reports, it is discovered that the Malaysian Chinese community pays more attention to the internship and employment policies of study abroad countries because this concerns the direction and future of students after graduation. Wang Huiyao (Huiyao, 2022: 30-59) mentioned that "International students are also a

powerful driving force for innovation and entrepreneurship development in a country or region. Among US startups with a market value of \$1 billion, 1/4 of the founders are international students. For example, Elon Musk was once an international student from Pretoria, South Africa. He studied in the United States, interned, and started a business in Silicon Valley, and became the richest person in the world in 2021. In Canada, one out of every four small and medium-sized enterprises is owned or operated by immigrants or former international students." Therefore, taking the example of internships and entrepreneurship for international students coming to China, more internship opportunities and employment channels should be provided for international students who study in China in order to increase the attractiveness of "Study in China", and improve the country's innovation and entrepreneurship capabilities. Moreover, the development of vocational education in China is deeply in line with the current situation in Malaysia, and the two countries can engage in more cooperation and exchanges in this field.

#### "Study in China": navigation and reviews

"Study in China" has become a hot topic and trend in the Malaysian education circle. Therefore, Sin Chew Daily will open some columns to invite social figures to analyze, comment and navigate this phenomenon. For example, in Chen Zhicheng's (head of the Malaysian Study in China Center) commentary "Reflect on the Rapid Internationalization Policy of Chinese Universities" on August 4, 2019, he analyzed that China has recruited foreign students in a large amount under the "Belt and Road" policy. Nevertheless, due to the lack of experience and standards in recruiting international students, the rapid internationalization of international student policies has led to some problems and provoked dissatisfaction among the people. The Chinese government then made timely adjustments and implemented the "Convergence Management of Chinese and Foreign Students" policy and strictly reviewed the quality of international students. He believed that "high-quality academic education level in universities, coupled with advantageous

high-tech development and employment guarantee after graduation" make Malaysian students studying in China have a bright future and also bring a turning point for Malaysian Chinese education. Another commentary published on November 16, 2016, "A Good Time to Study in China" argues that China today is not the old one about 20 years ago. China today is rising that has opened its doors to international students. In addition, there are many educational navigation or commentaries involving China's "Belt and Road" policy and the heat of studying in China, China's vocational education and bright employment prospects.

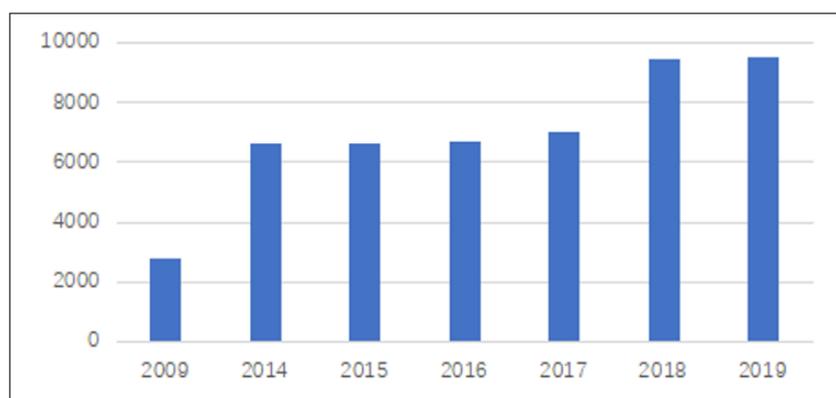
In general, Sin Chew Daily plays a diverse role in Chinese education in Malaysia. It is not only an information platform that provides various educational information for Chinese people, but also a "voice" platform that speaks out for Chinese education and Chinese people's educational issues. It is also a navigation platform that provides rational advice and thinking from different perspectives for parents and students, thus providing detailed and reliable references and guidance for the education and employment of Malaysian Chinese people.

#### Conclusions

Based on the classification of the focus of the 'Study in China' reports and the interpretation of the relevant report contents, the following conclusions can be drawn:

#### **The number of Malaysians studying in China is increasing, and 'Study in China' has broken through the 'myth'**

Through the analysis of multiple reports and commentaries, the positive attitude and outlook of the Malaysian Chinese community towards 'Study in China' is obvious. Everyone unanimously sees a bright future of 'Study in China', believing that it is not only beneficial to the development of students, but also to the development of Malaysia. Therefore, in recent years, the number of Malaysians studying in China has been increasing as followings.



**Figure 2.** Number of Malaysian students "Study in China" (unit: person)

As seen from the above figure, the number of Malaysians studying in China has increased from 2,800 in 2009 to 9,500 in 2019, and according to the annual 'Statistics on International Students in China' by the Chinese Ministry of Education, the number of Malaysians studying in China is always among the top 15. Nowadays, international students have become a backbone

force in China-Malaysian friendship and social development, reaching the highest level in history in terms of cultural or student exchange.

More importantly, from the titles of many news articles and comments, it is obvious that the Chinese community in Malaysia highly recommends "Study in China" (see Table 1).

**Table 1.**

*Reports and comments on "Study in China" of Malaysia from Sin Chew Daily.*

| No. | News/Comment Title   | Time       |
|-----|--|------------|
| 1   | Studying in China to Increase Employment Opportunities   | 2022.12.27 |
| 2   | More excellent universities in China, and the increasing number of independent middle school students studying in China  | 2022.12.25 |
| 3   | Technical Vocational Chapter of Studying in China Guide: Many choices for Technical and vocational students              | 2021.01.26 |
| 4   | Abundant Achievements and Promising Prospects for Education Cooperation between China and Malaysia                       | 2019.01.13 |
| 5   | The Myth of Studying in China - China's education has made great progress with the rapid economic development            | 2018.12.25 |
| 6   | The construction of the Belt and Road Initiative is thirsty for talents, and the prospect of studying in China is bright | 2017.12.24 |
| 7   | The number of students studying in China has grown by 150%. Liu Limin: Years of hard work and achievements               | 2017.04.23 |
| 8   | Good Time to Study in China  | 2016.11.16 |
| 9   | Large Space for Education Cooperation between Malaysia and China   | 2015.01.06 |
| 10  | Studying in China has become a new trend of globalization  | 2014.09.02 |

It is worth noting that on December 25, 2018, Sin Chew Daily opened a special edition to discuss the 'Myth of Studying in China'. The commentary analyzed the current situation of Malaysians studying in China and summarized the achievements made by China since its reform and opening up in 1978. It is believed that due to the stereotypes left over from the past, many Chinese Malaysians generally have the myth that 'Chinese universities are backward or closed', resulting in many Malaysian students missing the train to study at Chinese universities. However, the increase in the number of Malaysian students studying in China has proven that the Malaysian Chinese community has broken through the

barriers of such stereotypes. As a Malaysian educator said, "Times have changed, and we even have students studying in China! How unimaginable!"

### **Behind the positive brand image of "Study in China" is China's growing comprehensive national strength**

The good situation of Malaysians studying in China is not only due to the deepening of friendly relations between China and Malaysia, but also owing to the continuous strengthening of China's comprehensive national strength. For example, in a report on December 25, 2022, the CEO of the

United Chinese School Committees' Association of Malaysia Liang Shengyi said: "In recent years, more and more Chinese universities have been included in the top 200 of the Times Higher Education and QS World University Rankings, attracting the attention of independent Chinese high school parents and graduates. Meanwhile, the rise of China's film and television industry has also given students a better understanding and longing for China." In a report on April 24, 2021, Chen Zhengjin, chairman of the Merdeka University Berhad, said: "In recent years, domestic students have shown an increasing interest in studying in China, especially as China leads the world in areas such as comprehensive national strength, economic development, manufacturing, technological innovation and craftsmanship, attracting Malaysian students to study in China." There are countless such reports. In addition, the establishment of offices and branches by Chinese-funded enterprises in Malaysia has also given Malaysian students and parents a sense of promising employment opportunities. Therefore, the comprehensive national strength brought by China's economic development, education improvement, technological progress and cultural revitalization has attracted Malaysian students.

### **China is a responsible big country**

From the relevant reports, it is obvious that China provides diversified channels for Malaysian students to further their studies, from rich scholarships to various training programs. China has truly helped Malaysian students to study in China and change their lives. As Liang Shengyi said in an interview with Lian Shanen of Sin Chew Daily on December 25, 2022: "This is mainly because after the Chinese government proposed the 'Belt and Road' initiative, it provided many generous scholarships for outstanding international students from countries along the route. Chinese universities also have many scholarship application opportunities, such as provincial and municipal government scholarships and university scholarships. Some universities even cooperate directly with individual independent Chinese high schools to provide specific continuation quotas to recruit outstanding graduates." The fourth item of the United Nations Sustainable Development Goals (SDGs), "Quality Education," requires in its sub-item "4b": "By 2020, the world will continue to expand opportunities for higher education scholarships for students from developing countries - especially underdeveloped regions, island countries, and African countries - so that they can study vocational education, information

and communication technology, science and engineering technology in developed countries or other developing countries." (Sohu, 2022) China's "Belt and Road" policy benefits neighboring countries by funding international students from developing countries to receive higher education. This is also an important way for our country to assume international responsibilities, participate in global governance and build a community of shared future for mankind.

### **There is a long way to go to enhance the brand of "studying abroad in China"**

Although the pandemic has passed, the experience of "online learning" during that time has become an unforgettable memory for some international students. Reports from Sin Chew Daily, a Malaysian Chinese newspaper, present the confusion and helplessness of Malaysian students studying in China during those challenging days. Xue Tian'ai (Tian'ai, 2020: 32), who studied in a university of China, mentioned that "there is no system to limit when we must open those already uploaded recorded classes, nor do we have visible and tangible peers to create an upward environment for us". We must reflect on whether we have paid sufficient attention to the psychological and adaptive conditions of students' online learning while focusing on creating rich and diverse online courses. Have we provided detailed explanations for relevant online course exercises and assessments? Have we taken steps to alleviate students' anxiety about graduation? These students who provided feedback all attend institutions ranked at the top in China. If even these institutions have not created a well-organized environment for students' online learning, what about other schools? Although the pandemic has passed, in the face of special situations that may arise from time to time and the trend of educational informatization, we need to seriously consider how to improve international students' sense of participation in classes, activity experience, cultural adaptation, institutional clarity, and smooth interpretation through multiple channels. To improve the satisfaction of international students, universities must do a good job in humanistic care, institutional construction, and the improvement of informatization levels in subtle ways (Yajun, 2021: 89-90). It is important to focus on the details and provide support to international students in all aspects of their academic and personal lives.

Malaysian Chinese and Chinese people share the same roots and origins. Compared to other countries, their practices in promoting the process of 'Study in China' are worth learning from and commendable. At the same time, their voices also need to be listened to and reflected upon. Through the interpretation of 569 reports on "Study in China" from October 2013 to March 31, 2023 in the Malaysian Chinese newspaper *Sin Chew Daily*, the newspaper focused on multiple aspects such as information reporting on "Study in China", policy interpretation of "Study in China", and reflective commentary on "Study in China". From these reports, a positive attitude and positive brand image of "Study in China" among the Malaysian Chinese society can be interpreted. In addition, the improvement of the "Study in China" brand not only requires the perfection of its connotation but also needs to be examined, reflected upon, and improved from the perspective of others. This study provides suggestions and strategies for improving the "Study in China" brand with the aim of promoting its long-term construction and development.

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## The four-hand ensembles by Ludwig van Beethoven: search and gain

### Los conjuntos a cuatro manos de Ludwig van Beethoven: búsqueda y ganancia

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#### Abstract

The original four-hand ensembles by L. Beethoven have not received the proper attention of scientists. The aim of the study is to evaluate the composer's gain from the standpoint of the searches for new sonority and timbre variety. This approach reveals the process of the mutual influence of the two-hand and four-hand compositions in his piano heritage. The main method was musical analysis, using which Beethoven's notes and scores were examined, and their structure was investigated on the basis of analysis and synthesis. The principles of abstraction, specification and generalization are also used. The result is the semantization of the developed techniques, the modelling of various figurative-playing situations in the march genre, the variety of characteristic means as the ways of varying song melodies, the combination in the variation cycle of the features of amateur music-making and concert style. In conclusions it is shown, that assimilation of the experience accumulated in the four-hand literature and new capabilities of the instrument laid the foundation for a new type of composer thinking. As the example

#### Resumen

Los conjuntos originales a cuatro manos de L. Beethoven no han recibido la debida atención por parte de los científicos. El objetivo del estudio es evaluar la ganancia del compositor desde el punto de vista de las búsquedas de nueva sonoridad y variedad tímbrica. Este enfoque revela el proceso de la influencia mutua de las composiciones a dos y cuatro manos en su patrimonio pianístico. El método principal fue el análisis musical, mediante el cual se examinaron las notas y partituras de Beethoven y se investigó su estructura sobre la base del análisis y la síntesis. También se utilizan los principios de abstracción, especificación y generalización. El resultado es la semantización de las técnicas desarrolladas, la modelización de diversas situaciones de ejecución figurativa en el género de la marcha, la variedad de medios característicos como las formas de variar las melodías de las canciones, la combinación en el ciclo de variación de las características de la creación musical amateur y el estilo de concierto. En las conclusiones se muestra que la asimilación

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Variations on the Theme of Beethoven for two pianos by C. Saint-Saens are considered.

**Keywords:** Ludwig van Beethoven, four-hand piano ensemble, march, variations.

## Introduction

### *Research Problem*

Many composers, regardless of the genre in which they work, find inspiration in his creativity and stylistic solutions. Elements of the great master's music can be heard in various genres, from classical and romantic music to rock, jazz and modern electronic music. Beethoven's music overcomes language and cultural barriers. It has a certain universal power of communication, which is able to connect people regardless of their political views, nationality, religion, social status, and ethical beliefs. Beethoven's works have stood the test of time and continue to amaze listeners around the world even centuries after they were written. Beethoven's music is imbued with expressiveness and saturated with powerful emotions (Rücker, 2002; Telesko et al., 2020). His works reflect a wide range of emotions, including joy, sadness, pity, ecstasy and heroism. They create a deep emotional impression that can move the listener and cause reflection. It is difficult to imagine the history of musical art without Beethoven's work.

At the same time, not all information about this famous composer has been fully investigated. Certain elements of his creative legacy also need to be rethought, as ideas about music are permanently transformed, so the knowledge about their compositions and works in general also changes. Beethoven's work is no exception to this process. If the world-famous works of the master are under the constant attention of researchers, then less well-known achievements require increased attention.

### *Research Focus*

Therefore, the main focus of the study is on the analysis of the key features of the ensemble of four hands created by L. van Beethoven. Ludwig van Beethoven worked on the border of two centuries (1770-1827), this influenced the fact that the features of two eras - classicism and romanticism - were embodied in his work (Burnham, 1995). It is believed that it was in his

de la experiencia acumulada en la literatura a cuatro manos y las nuevas capacidades del instrumento sentaron las bases para un nuevo tipo de pensamiento compositivo. Como ejemplo se consideran las Variaciones sobre el tema de Beethoven para dos pianos de C. Saint-Saens.

**Palabras clave:** Ludwig van Beethoven, conjunto de piano a cuatro manos, marcha, variaciones.

work that the classical sonata type fully realized its potential and influenced the emergence of a new romantic style. The works created by the composer, considered only in the aspect of the development of the technique of four-hand playing, do not allow an unambiguous answer to the question: was it a tribute to fashion or playing 4 hands on one instrument revealed to the composer the timbre-register secrets of the new, in comparison with the harpsichord, instrument?

### *Aim and Research Questions*

Therefore, taking into account the importance of studying the creative heritage of Ludwig van Beethoven, the aim of the article is to analyze Beethoven's works intended for performance in four hands, to determine his creative searches and the results formed as a result of writing these compositions.

Accordingly, the main research questions are:

1. Characterization of the theoretical foundations of research, analysis of scientific literature.
2. Analysis of compositions in four hands by L. van Beethoven.
3. Description of his main innovations in musical art through a historical perspective.

## Theoretical Framework or Literature Review

The life and work of Ludwig van Beethoven (1770–1827) as a special cultural phenomenon continues to stimulate research thought. Scientists investigate the composer's life path, the features of the author's style, which give a special energy charge to his musical ideas (Greenfield et al., 1965). In particular, Geck (2017) characterized the features of the composer's formation, the change in his stylistic characteristics, and the evolution of his creative heritage. about the creative and life path of the famous composer is presented in the work of Caeyers (2020). At the same time, Clarke et al. (2015) described the complex issues of musical

empathy against the background of cross-cultural contacts. Bank (2020) identified key aspects of the formation of European musical art. Garrison (2019) characterized key motifs in Western music. In a collective monograph, Raposo et al., (2020) explored major trends in music and art.

Against the background of the grandiose designs of large-scale sonatas and variation cycles for solo piano, the four-hand ensemble occupies a modest place. This gave Kesselschläger (1941) a reason to write about Beethoven's lack of interest in the genre, discoveries of new ways of development in the four-hand presentation and style. Stoelzel (1984) brief mention of Sonata in D major op. 6 by Beethoven in the context of a detailed presentation of the features of four-hand sonatas by Muzio Clementi (1752–1832) is indicative. The musicologist notes the similarity of episode C in the Andante of the 2nd movement of Sonata E flat major op. 3 by the Italian composer and the episode in d-moll in Rondo of Beethoven's Sonata. If Clementi appears in it as a piano virtuoso, ahead of his time, Beethoven, with such a texture, does not reach a large scale (Stoelzel, 1984). The temporal distance separating the two research works did not affect the perception of Beethoven's piano ensembles by researchers. At the same time, Stoelzel (1991) analyzed Mozart's last four-handed Sonata in C major KV 521, completed in Vienna.

On the other hand, the modern researcher Lockwood (2012) created a detailed picture of the life and work of the great composer, described Beethoven's musical development and paid considerable attention to the historical, political and cultural background. Each new chapter in his work begins with a concise analysis of the most important biographical events that influenced the composer's development. Some other biographical data is described in the study of Bernhardt (2021). The influence of romanticism on musical art was characterized by Rummenhöller (1995). At the same time, modern researcher Jan (2022) analyzed the evolution of individual musical styles. Suvorov et al. (2022) researched the main features of training future musicians. Some casual reminiscences of famous musicians were described by Goodhart (1936). Jones (2014) described the evolution of the Viennese school of composers.

In the study of De Luca et al. (2019), the relationship between traditional musical art and modern art is traced. Şahin (2013) researched the music Entertainment culture Scripp & Gilbert (2019) characterized the problem of human

becoming through music. Newmark (2009) and Sedivy (2021) investigated the health problems of L. van Beethoven, characterized how certain diseases affected his life and work. A similar problem is also described in works by Kauffman-Ortega & Valdovinos-Díaz (2020) and Camargo & Bronzini (2015).

Kemner (n.d.) studied the work "Drei Equale" of L. van Beethoven. Rehfeldt et al. (2021) believe that the development of Beethoven's music was characterized by a set of products that "arising from a series of interconnected circumstances that created a high demand for his music" (p. 69). The analysis of these researchers revealed two levels of relational processes in the selection of Beethoven's music:

1. the relational repertoire "which allowed Beethoven to compose masterpieces when he was completely deaf" (Rehfeldt et al., 2021, p. 69).
2. the symbolic role of his works in promoting freedom and democratic values in various societies (Rehfeldt et al., 2021).

## Methodology

The research was implemented in several stages. At the first, an analysis of the literature was carried out, the main achievements of modern scientists were characterized. At the second stage, a thorough analysis of Ludwig van Beethoven's compositions was carried out. At the last one, the summary was carried out.

An important role in the research methodology is played by a systematic review of the theoretical literature base related to the topic. The research uses musical analysis, based on which notes and scores of L. van Beethoven's musical works are considered. Their structure, features of the melody and other important musical elements were studied with the help of analysis and synthesis. On the basis of contextual analysis, the connection of L. van Beethoven's ensembles with his other works, musical traditions of that period is traced. Separately, the principles of abstraction, specification and generalization were used in the study.

## Results and Discussion

### *Sonata D-dur op. 6* in the context of the established tradition

In the four-hand *Sonata D-dur op. 6* by Beethoven, many of the traditional methods of ensemble playing reveal their figurative and

drama function, causing a train of analogies both with the compositions of the composer himself and those of his predecessors. The two-movement cycle is built on the contrast of the actively-volitional *Allegro molto* (1st movement, miniature sonata form) and the lyrically-graceful *Moderato* (2nd movement, Rondo). The quasi-triplet rhythm formula of the theme of the main part is perceived by musicologists as a harbinger of the famous leading intonation of the *Fifth Symphony*. And at the same time none of the researchers notes the composer's reinterpretation of the initial unison. This kind of "inception" at the forte in a four-hand ensemble was characteristic of similar sonatas by Mozart, which distinguished them among the opuses of

contemporaries. If unison during the development of the technique of ensemble playing turned out to be an important way of "tuning" the ensemble members for joint music-making, in Beethoven's *Sonata* it became a means of expressing the general idea of *Allegro molto*. The first sentence of the main part contains an internal contrast, lining up on the principle of "question – answer". It is important to note the dialogical structure of the second half of the sentence. This kind of "personification" of thematism, on the one hand, explains the absence of contrasting lyrical imagery in the sphere of the side part, on the other hand, it stretches threads to the composer's two-hand works (see Figure 1).

**Figure 1.** L. Beethoven. Sonata D-dur op. 6. 1st movement (bars 1–12).  
Source: Beethoven (1952)

The opening octave unisons of the main part, which are expressing the energetically charged active imagery of the movement, will be further developed by Beethoven in the subsequent sonata opuses for solo piano (the main parts of the 1st movements of *sonatas D-dur op. 10 No. 3*, *C-dur op. 53*, *f-moll op. 57 "Appassionata"*). The composer uses full-sounding chords and

octave doublings in his solo sonatas not only embody powerful, authoritative or solemn images, but also lyrical ones. Consider, for instance, the type of texture in the main theme of the 2nd movement of *Sonata E-dur op. 14 No. 1*. It resembles four-hand literature projected onto two staves (see Figure 2).

**Figure 2.** L. Beethoven. Piano sonata op. 14 No. 1. 2nd movement (bars 1–8).  
Source: Beethoven (1952)

The roots of this phenomenon go back to the recent past, when, two-hand works could be performed in four hands, as well as those created for two claviers – on one instrument (this was

reflected in the subtitles of the works). However, among the fundamental elements of the work Stoele (1984) mentions doubling, leading the melody, and counterpoint which reflected the



typical properties of playing on one instrument. Beethoven avoids this kind of typed texture formulas in *Sonata op. 6*. He plays with the timbre roll-calls of two parts to create a surround sound. There is a parallel with *Sonata f-moll op. 2 No. 1* written between 1793 and 1795. In it the theme of the main part is presented in the timbre opposition of high and low registers, an active energetic ascending movement and softer, “feminine” motives, accompanied by a characteristic chord rhythm formula, which, owing to the lack of a strong beat of the measure, takes the form of an enlarged triplet. Beethoven’s approbation of the new imagery and means of expression in the solo sonata influenced the interpretation of the sonata form of the four-hand opus, making it possible to reduce what was found to structural and semantic formulas and shift the emphasis to the development to enhance the drama element. In turn, the practice of four-hand music-making opened the way to timbre diversity, sound density, brightness of register contrasts in the designs of sonatas for solo piano, with all the imperfection of instruments of that time.

Rondo of the 2nd movement reveals an influence of Mozart’s style. This is indicated by the dominance of melodic principle, which in the theme of the refrain resembles the stylistics of lyrical heroines of the operas of the Austrian Maestro, transparency of texture, predominance of soft quiet dynamics, only occasionally enhanced by the movement of more extended rhythmic groups, the presence of a quasi-improvisational ligament before the last performance of the refrain (Cooper, 2000). Some of the motive formations of the 1st episode (d-

moll) are marked by ambivalent properties. The off-beat octave moves to the top-source, accentuated by *sf* and a longer duration, evokes memories of dramatic exclamations from the middle section of the 2nd movement of the four-hand *Sonata C-dur* (KV 521), the quivering lyrics of the main part of the soloist of the 1st movement of *Piano Concerto d-moll No. 20* (KV 466); the gracefulness of the subsequent dotted motives give this music a danceable character. If Beethoven’s beginning in the 1st movement of *Sonata op. 6* is easily recognizable owing to the “rhythm of fate”, then in Rondo the bearers of the author’s individuality are numerous sforzando, including weak beats of the bar in the bass line of the Secondo part (the 1st episode), solemn dotted figure of the “precursor” to the octave bass, which creates a figurative contrast to the roundedness of the similar figure in Primo part. Beethoven’s orchestral thinking proves itself in this, as the iambic motive in the bass is perceived in the phonics of the trumpet, the doubled melody in Primo is associated with the sound of flutes or violins, while the triplet figurations in the Secondo right-hand part can be colored with a string group or a harp. Beethoven makes extensive use of double octaves in the bass, thereby generating an additional contrast between the refrain and episodes. The four-hand presentation of Rondo eliminates such weaknesses of the still imperfect piano as insufficient keyboard volume. This kind of problem, as evidenced by the second episode of Rondo, is easily resolved in the context of ensemble music-making, as the expanded passage in the Primo’s right hand part grows out of an imitative dialogue of similar motives transmitted from part to part (see Figure 3).



Figure 3. L. Beethoven. *Sonata D-dur op.6. 3rd movement (bars 60–67)*.  
Source: Beethoven (1952)

At the compositional level, this cadence construction performs the function of a ligament-transition to the last refrain. Thus, the ability to fill the entire volume of the keyboard when playing four hands using the achievements of the pianistic technique of that time gave Beethoven an understanding of the piano universalism and the role of timbre-register and textured means in the drama process.

### Dialogue with the experience of musical culture in variation cycles

The creation of the *Sonata in Four Hands* was preceded by *Variations on the Theme of Count von Waldstein C-dur* (WoO 67; 1791/92), often called as *8 Variations on the Theme of Count von Waldstein*. Beethoven inherits the developed patterns, although he is not limited to the tight framework of the rules, supplementing the cycle with an expanded ending. Several tempo changes affect the musical imagery, which gives this section an independent meaning (here for the first time the composer changes the metro-rhythm from 4/4 to 6/8).

The cycle is based on the theme (Andante con moto), striking in its ingenuousness and intonations naivety. The simplicity of its tunes evokes associations with the thematism of some of Mozart's variation cycles. Suffice it to mention *9 Variations on the Theme of "Lison Dormait" by N. Desede C-dur* (KV 264), *12 Variations on the Theme of "Ah vous dirai-je, Maman" C-dur* (KV 265), *10 Variations on the*

*Theme of the Arietta "Unser dummer Pöbel meint" G-dur* (KV 455), *6 Variations on the Theme of "Stadler Quintett" A-dur* (KV 581). Considering the fact that the 2nd half of the 18th century retains a connection with musical rhetoric, the intonation fund of which was the vocabulary of the era, this kind of coincidence can hardly be attributed to stylization or imitation. The non-squareness of the original material (14 bars) forms a simple three-movement form with the middle contrasting in the mode scale, which anticipates the minor Adagio (var. VIII). The play of chiaroscuro (major-minor) gives the music a special plasticity, as if conveying the change of the participants of the dance performance. The said is confirmed by the brevity of motives in accordance with the repetition and change of choreographic "pas". This principle is maintained in the subsequent variations. In contrast to the theme where Primo part takes the leading position, they open up broad possibilities for four-hand presentation. In the playful 1st variation, the contrast is intensified owing to the timbre recolouring of the varied initial motive of the minor middle. Placed in the great octave, against the background of sustained chords, it introduces elements of alertness into this light music. Beethoven enhances the ludic element of this music by shifting the phrasing accents in both parts. In combination with the lace of triplet figurations in the upper register of Primo, they create an additional counterpoint line that destroys the mechanistic nature of the given movement (see Figure 4).

**Figure 4.** L. Beethoven. Variations on a Theme by Count von Waldstein. Var. 1 (bars 7–11). Source: Beethoven (1952)

The technique of variation under the conditions of four-hand presentation allows the author to differentiate the timbre space, the role function of the playing voices, to reveal the tendency to expand the register palette. If we recall that the sounds h–c formed a kind of “border” between the two parts, then Beethoven is guided by the

desire to fill the entire volume of the keyboard as much as possible: the Secondo left-hand part is mostly in the big octave. The change in sound resources, the activation of the passage movement is supported by the dynamics of fortissimo, sforzando, the polarization of dynamic comparisons. The promotion of



Secondo as the soloist is presented in a new way. The organic integration of his passages into the overall sound volume does not create register switches so characteristic of alternating playing

of the ensemble members. The swift music of this variation is perceived as a single stream, stylistically recalling the motor skills of the etude genre (See Figure 5).



**Figure 5.** L. Beethoven. Variations on a Theme by Count von Waldstein. Var. 2 (bars 1–4).  
Source: Beethoven (1952)

L. van Beethoven thinks like an experienced strategist, enhancing the contrast between variations at the expense of the ensemble’s capabilities. In particular, in the 3rd variation, he brings Secondo part to the fore. It occupies the register space, traditional for two-hand literature, and sets out all the main thematism. Against this background, Primo part is entrusted with short motives in the high register, with the left hand being engaged only in the minor middle at the moment of pauses in Secondo part. This kind of ornamentation of a variable theme testifies to Beethoven’s orchestral performances, to his mastery of all the piano timbre colours. In each subsequent variation the composer enhances the

contrast, using dynamics, registration, rhythm, reception of dialogical roll calls, alternating playing, etc. Owing to this, some variations acquire the features of a song without words (var. III), a grotesque march (var. IV), a sparkling etude (var. VI), and a love-flirtatious duet of the heroes of the buffa opera (var. VII). This music seems to appeal to the practice of dance and choreographic action, allowing going beyond the prevailing standards of the genre and enrich it with the elements of theatrical character. The inclusion into the 7th variation of Adagio (6/8), written out in brevier, which is perceived as a kind of vocal “cadence” in the opera scene, is indicative (See Figure 6).



**Figure 6.** Beethoven. Variations on a Theme by Count von Waldstein. Var. 7 (bars 11–15)  
Source: Beethoven (1952)

The variety of genre analogies in *Variations on the Theme of Count von Waldstein* is complemented by an improvisational statement in Primo part at the end of the minor, 8th, variation. Anticipating the appearance of the final Allegro, it refers to the practice of fantasies

where such transitions-ligaments reinforced the contrast between the sections of the composition. At the same time, the free attitude to the integrity of the variation, the interruption of the musical process, based on dramaturgic goals, can be regarded as the first step towards the liberation of



the thinking of the composer, the creator of future *Sonatas d-moll op. 31 No. 2, As-dur op. 110*. The large-scale completion of the variation cycle summarizes the key thematic ideas and techniques of ensemble playing. This is evidenced by the further transformation of the theme in the dance rhythm of 6/8, the end of the sections at expressive fermatas, the invasion of two Adagio with the alternate promotion of each of the players to the fore, and, finally, the bright Presto, in which the juicy phonics of Secondo

part confirms the theme, while Primo part enriches the sound with ringing, trill-like figurations in the high register.

L. van Beethoven thinks *6 Variations D-dur* (WoO 74; 1779, 1803–1804) in a different way. They are distinguished by the presentation of the theme as a vocal model to the words of Johann Wolfgang von Goethe *Ich denke dein* (See Figure 7).

**Figure 7.** L. Beethoven. 6 Variations on “Ich denke dein”. Theme.  
Source: Beethoven (1952)

The concept of the variations and their design are clearly focused on the performance in a close home circle. The vocal melody does not exceed the range of one and a half octaves, its 2 sentences include a series of short motives. Their descending intonations express the sincerity of the lyrical statement; brevity of the structure takes into account the possibilities of an unprofessional vocalist. The 6 variations with coda at small scales allow demonstrating the pianistic skills of the ensemble members. The cycle is built on the principle of contrast, contains 2 slow variations (the 3rd – D-dur, the 5th – d-moll), which fully correspond to the character of Andantino cantabile song. The other variations are distinguished by mobile tempo, active movement, and cheerful mood. Beethoven’s orientation toward didactic literature is evidenced by the inclusion of the most typified

techniques by which one can show the results achieved in learning to play the piano. It gives rise to equal rights for the ensemble members who take turns to demonstrate their skills (Rumph, 2004). At the same time the series of variations created by Beethoven goes far beyond the educational pieces. The composer skilfully uses features of different genres to personalize each of the variations. For example, Primo and Secondo compete in passages of “etudes” (variations I and II, respectively); in the last of them, in Primo part a new stylistic element appears, associated with scherzo imagery; the appearance of the 4th variation is distinguished by imitation technique, and the dialogical change of the thematic initiative in a miniature form gives this variation a special dynamism (See Figure 8).



**Figure 8.** L. Beethoven. 6 Variations on “Ich denke dein”. Var. 4 (bars 1–8)  
Source: Beethoven (1976)

This technique intensifies the switch to a different emotional state: the minor, 5th, variation, sounding against the background of a pulsating chord accompaniment, brings a dramatic element into this cycle. A peculiar counterpart to it is the high lyrics of the 3rd variation, sustained in the spirit of the instrumental Adagio of the high baroque and early classicism era (Ott, 2019). The predominance of individualized thematism in each of the parts, the variability in the conduct of short but expressive phrases, and register matching strengthen the timbre associations. The composer’s maturity can be judged at the end of the variation cycle, in which all the most characteristic figurative-emotional complexes and playing techniques are summed up.

#### **Play modus of the march genre in Beethoven’s four-hand ensembles**

Beethoven’s legacy contains samples testifying to their orientation towards the amateur environment. *Three Marches op. 45 – C-dur, Es-dur, D-dur*, written in 1802–1803 are prime examples. The significance of the compositions of other genres written by this time confirms Beethoven’s mastery. Against this background, the four-hand marches show his connection with pedagogical practice; also, they show the creator of serious concepts “playing” with a widespread genre. Beethoven most accurately adheres to the genre characteristics in the *March C-dur*: the dominance of fanfare dotted turns, chanted repetition, and the power of chord sonority. Although in the middle of the 1st movement of a complex three-movement form, a melodic phrase of a lyrical nature, softened by minor colouring, homophonic-harmonic texture, and the piano dynamics, appears (See Figure 9).

**Figure 9.** L. Beethoven. March C-dur (bars 9–12).  
Source: Beethoven (1976)

The lyrical message is picked up in Trio, characterized by sparse texture, three-layer presentation (bass voice – triplet accompaniment

– expressive melody), and the transfer of the thematic initiative from Primo to Secondo (See Figure 10-11).

**Figure 10.** L. Beethoven. March C-dur. Trio (bars 1 4).  
Source: Beethoven (1976)

**Figure 11.** L. Beethoven. March C-dur. Trio (bars 9-12 ).  
Source: Beethoven (1976)

The four-hand ensemble allows Beethoven to fill the entire register space at the perfect alignment of the sonic balance. Despite the islets of lyrics,

*March C-dur* leaves an impression of bright, fanfare, victorious music.



The genre metamorphosis is palpable in the *March Es-dur*, maintaining the two-beat time, dotted figures, and dense chords. A large number of figurations, repetition, lengthy rehearsals,

brevity of motives with the avoidance of a strong beat, syncopé, and a stroke of staccato bring the features of a scherzo to this music (See Figure 12).

**Figure 12.** L. Beethoven. *March Es-dur* (bars 1–12).  
Source: Beethoven (1976)

These kinds of genre mixes were characteristic of the minuets in Mozart’s late symphonies, which deviated from the dance prototype. It is also facilitated by the tempo shift – *Vivace*. The variety of timbre-stroke palette evokes parallels with the playing of a symphony orchestra. The intended trend towards the genre transformation is continued in the *March D-dur*. The composer sharpens the dotted rhythm formula, emphasizing the pivot beats of the sforzando measures and the unison tutti characteristic of the beginning. The similar thematism will be

presented alternately in the parts of ensemble members, which enhances the atmosphere of competition. The presence of a triplet movement, passages, turns with a trill, a lively tempo of *Vivace* smooth the march nature, while endowing this music with buffoon features (See Figure 13). Thus, the march is conceived by the composer both within the boundaries of typical formulas and as the expression of the characteristic sphere. This is especially evident in comparison with the funeral march in the *Piano Sonata As-dur op. 26* (3rd movement).

**Figure 13.** L. Beethoven. *March D-dur* (bars 1–6).  
Source: Beethoven (1976)

### Beethoven's discoveries in a historical perspective

The composer's four-hand ensembles, seemingly not claiming to be discoveries in the field of ensemble playing, contain a scattering of finds that are recognized in the compositions of a later time. We should name the technique of genre variation, a variety of stylistic elements, all-encompassing of registers, semantization of timbres, brightness of contrasts within small scales, absolute equality of instrumental parts, their virtuosity, intricate skill in transforming tunes that are simple in melody and structure. One of the examples of the inheritance of this tradition can be *Variations on the Theme of Beethoven for two pianos Es-dur op. 35* (1874) by C. Saint-Saens (Saint-Saens, 2013). Two instruments fill the textured-register density characteristic of Beethoven's ensembles with a full sounding. For his composition the French

composer chooses the flirtatious and graceful theme of the Trio minuet from *Piano Sonata Es-dur op. 31 No. 3*. It is marked by the brevity of question-and-answer motives, built on the principle of opposing declamatory exclamations with long durations and light lyric-dance melodic turns. Neither Beethoven's scale nor the tone seriousness of the statement is guessed in the theme, on the contrary, the thematism is surprisingly simple and somewhat naive. The two-piano presentation does not violate Beethoven's original, since Saint-Saens follows the path of distributing individual lines by parts. But the composer exposes a personalized "monogram" in the introductory section, where the energetic octave motives in Piano I part are answered twice by the ascending arpeggios with a stop at the upper sound in Piano II part, perceived as an allusion to the beginning of *Sonata d-moll op. 31 No. 2* (See Figure 14).

Moderato assai

**Figure 14.** C. Saint-Saens. *Variations on a Theme of Beethoven op. 35* (bars 1–8).  
Source: Beethoven (1976)

This kind of reminder will appear before the grandiose fugue of the 9th variation (Allegro). The inclusion of the introductory material into the process of transforming the original material becomes a watershed between a series of characteristic variations and a large-scale completion, in which the fugue is complemented by toccata Presto with a reminiscence of one of the motives of Beethoven's Trio and the modified arpeggio of the introduction.

Saint-Saens (2013) is far from reconstructing Beethoven's achievements. He is the son of his time, so he uses the wealth accumulated by the European piano school. From this view, the *Variations* generate a wide field of associations. For example, the 4th variation (Molto allegro) with its chord presentation, repetitions, quasi-martellato is perceived as a tribute to the pianism of F. Liszt; the 6th variation (Presto leggierissimo), "cut" into short fragments,

reminds one of *Etude c-moll op. 25 No. 12* by F. Chopin; the 7th variation (Alla marcia funebre) appears as an ominously sarcastic modus of tragic music from Chopin's *Sonata b-moll* (in 1907 Saint-Saens transcribed this sonata for two pianos); the 1st variation (*Allegro*) brings to mind the sparkling pianism of C. M. Weber, and the unfolded powerful fugue of the 9th variation serves as a sign of admiration for the genius of Beethoven, the philosophical concepts of his later sonatas (Eberler, 1923). As if in continuation of Beethoven's inventio in this genre, Saint-Saens (2013) uses the polyphonic technique of inversion at a distance, thus creating a pairing within the cycle. For example, if we compare the presentation of the theme (Tempo di Menuetto) and the 3rd variation (Tempo del Tema), they are close in terms of texture, but also perceived as a mirror image of each other. This impression arises due to the change of the ascending movement of chord lines and

melodious turns in both parts for the descending one. The simplicity of the resources of variation used by Saint-Saens underlines the composer's wish to reveal the ludic nature of the piano ensemble, which creates additional connection with Beethoven's four-hand duets.

The score of *Variations on the Theme of Beethoven* by Saint-Saens (2013) from the standpoint of today is a kind of anthology of the 19th century piano styles. After the pearly 16th in the spirit of Weber (var. I) there is an excited, soulful lyrics of "Mendelssohn" song without words (var. II; Poco meno mosso). In it the material in both parts is almost completely identical, only being played with the help of the tessitura. To fill in all the registers, the French composer uses both the technique of an imaginary intersection of voices, by dividing the parts into a melody and accompaniment thickened by duplication, and the motivic roll-calls distant in the registers. The transparency of the ornamental style of the 5th variation (Moderato assai) unexpectedly plunges into the atmosphere of French harpsichordists' music, while recalling the exquisite, sophisticated design of instruments of the Rococo period, Antoine Watteau's "gallant festivities", and the dance divertissements at the court of French kings. The emerging echo of a distant era among allusions to pianism of generally recognized values in European art becomes a sign of worship for the achievements of national culture. The 8th variation stands apart in the cycle; it does not evoke any specific stylistic analogies. No coincidence that it is deprived of the author's tempo designations, clear intonation connections with the theme. Its textured relief is distinguished by an ostinato-sustained, monotonous figuration in hollow basses, creating a feeling of a hidden rumble, and interval-chord "spots" scattered throughout the keyboard. The contours of the borrowed original are guessed only in the picture of alternating sound points. The glamor variation is the smallest in the cycle; in comparison with the theme, it turns out to be its flip side: the gallantry of the dancing leaps and the softness of reciprocal bows seem to hypertrophy, while embodying the picture of the universal movement. It is seen as an indirect reflection of Schumann's ambivalence, carnival nature idea.

The figurative and stylistic metamorphoses of Beethoven's Trio in the *Variations* of Saint-Saens (2013) determined the technical complexity of the composition. They are connected not only with the requirement of the perfect equipment of the playing apparatus of both pianists. It is about the highest degree of

ensemble interaction, which provides the illusion of two-hand playing when transferring short pulsating chord groups, passages, arpeggios at a fast tempo from part to part at the shortest time distances. The search for the sound balance is no less difficult in conditions of melodic-textured unity, when the duplicate parts of Piano I and Piano II are located in a dense register space. The opposite pole is made by the imitation technique of the fugue, which requires a clear vocalization of all conceptions of the theme as well as the achievement of a bright climax with the relief of each of the voices. In turn, the final 10th variation, serving as the finale, opposes the dominance of linearity to the toccata nature of interval-chord structures. Their assertiveness at Presto tempo, dialogical lines, and the placement of the parts to the extreme points of the keyboard are designed for the instrumentalists' fluency in chord technique.

### Conclusions

The depth of thought and strength of mind, strong-willed message and heartfelt lyrics, tragedy and light – these are the unity and struggle of opposites that determine the essence and nerve of Beethoven's music. It is his portrait in the light of his innovative transformations in almost all areas of musical art. The enthusiastic perception of the things created by Beethoven-innovator for a long time left the music written on orders for home as a sign of a friendly affection without due attention. Not distinguished by obvious prophecies, the works of this kind bear the imprint of a great talent hidden behind the modesty of their volumes and design.

The figurative content of *Sonata op. 6*, the brightness of contrasts, the presence of intonation details, a variety of ensemble playing techniques at small scales of form require the performers to have a subtle understanding of the nature of this music. *Variations on the Theme of Count von Waldstein C-dur* seem to inherit the aesthetics of "deception" of the Baroque era. The figurative and stylistic metamorphoses of Beethoven's Trio theme determined the technical complexity of the work. In addition to the development of the playing apparatus of both pianists, a high degree of ensemble interaction is required when switching to other genre conditions or distributing thematism along the parts at a fast tempo. Rapid change in stylistics stimulates the emergence of contrasting figurative and semantic complexes dynamizing the musical process. The accumulated energy finds a way out in the grandiose final Allegro, marked by bright concert

features. On closer inspection, the apparent simplicity of *6 Variations D-dur* hides significant technical difficulties. The virtuosity of this cycle presupposes the developed fine technique of both partners, the consistency in the joint performance of trills, the search for the sound balance not only in the “relief – background” ratio, but also in the timbre-register colouring of individual motives. The composer sees the march as a field for the genre experiment and the realization of all the possibilities of a four-hand presentation with its motive comparisons, poly-stylistic complexes, timbre-register effects, and textured-dynamic contrasts within small limits. Despite musicologists’ lack of interest in Beethoven’s four-hand piano works, they have long gone beyond the classroom and entered the repertoire of the concert piano duets.

More than half a century separates the four-hand ensembles of Beethoven and the *Variations for two pianos* by Saint-Saens. Much of what Beethoven found was refracted in the brilliant concert style of the French composer. The ingenuity in the methods of variation, the variety of techniques of ensemble playing, the “interchange” of experience among the works for the solo piano and ensemble helped Beethoven to reveal the full potential of the instrument and lay the foundations for a new type of composing thinking.

The considered ensembles of the German master allow concluding that it was not so much the four-hand playing that was of little interest to the composer, as he turned out to be “cramped” in it. Having learned the timbre, register, and dynamic resources of the instrument in the conditions of the rapidly developing pianistic art, Beethoven transplanted many ideas into the field of solo piano music. The composers of subsequent generations took advantage of the improved mechanics capabilities, tuning in relation to each other, and overcame the constraint of movements of the ensemble members by playing two instruments, thus having “liberated” the multi-coloured timbre palette and register all-encompassing nature that Beethoven conquered from the sound space of his time.

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## Analysis of trends in the financial sector of the global fuel and energy complex

### Análisis de las tendencias del sector financiero del complejo mundial de combustibles y energía

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#### Abstract

Understanding the global impact of energy on the economy and the financial sector is crucial for improving their interaction, especially within the fuel and energy complex (FEC). This study aims to identify the primary investment drivers for the financial sector within the FEC. It incorporates opinions, conclusions, and forecasts from leading international organizations that monitor the financial sector and the FEC. Through comprehensive analysis, key investment drivers were identified, including renewable and nuclear energy, risks associated with nuclear energy usage, and the impact of traditional fossil fuel sources. The analysis revealed distinct clusters of investment drivers that shape the future development of the financial sector within the FEC. The study determined the rank, median, and relative ranking of investment attractiveness for each cluster and investment vector. This information is valuable for finance and economics specialists and holds scientific significance for experts studying

#### Resumen

Comprender el impacto global de la energía en la economía y el sector financiero es crucial para mejorar su interacción, especialmente dentro del complejo de combustibles y energía (FEC, por sus siglas en inglés). Este estudio tiene como objetivo identificar los principales impulsores de inversión para el sector financiero dentro del FEC. Se incorporan opiniones, conclusiones y pronósticos de las principales organizaciones internacionales que monitorean el sector financiero y el FEC. A través de un análisis exhaustivo, se identificaron los principales impulsores de inversión, que incluyen energía renovable y nuclear, los riesgos asociados con el uso de la energía nuclear y el impacto de las fuentes tradicionales de combustibles fósiles. El análisis reveló distintos grupos de impulsores de inversión que moldean el desarrollo futuro del sector financiero dentro del FEC. El estudio determinó el rango, la mediana y la clasificación relativa de la atracción de inversión

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globalization and energy sector trends. The complex cluster analysis used provides a structured system of potential investment drivers for the development of the financial sector within the FEC. This framework is applicable to related studies relying on expert opinions and forecasts.

**Keywords:** global, trend, driver, financing, energy, future.

## Introduction

The design and implementation of strategies for the development of the fuel and energy complex (FEC) are currently facing a number of challenges, including global climate change, reduced availability of certain energy resources, increased consumption, etc. These challenges directly affect the financial sector of the FEC, which is a key factor in the investment and development of the industry. In this regard, the study of trends in the financial sector of the global FEC is highly relevant (Marhasova et al., 2020; Polishchuk, Kornyliuk, Lopashchuk & Pinchuk, 2020; Nurpeisova et al., 2020). The first reason why the study of trends in the financial sector of the global fuel and energy complex is relevant is that this sector is an integral part of the global economy. It includes large international companies engaged in the extraction, production and sale of energy resources, as well as financial institutions providing financial services and investing in the industry. Therefore, an analysis of trends in the development of the financial sector of the fuel and energy sector allows us to assess its contribution to the economy and identify opportunities for its development and efficiency improvement (Sotnyk et al., 2021; Shkola et al., 2021; Shpak et al., 2022).

The second reason why the study of trends in the financial sector of the global fuel and energy complex is relevant is that this sector is a link between energy companies and investors. An analysis of trends in the financial sector of the fuel and energy complex makes it possible to identify opportunities for investing in the industry and assess the risks associated with investments. This can be an important factor for decision-making by investors and other market participants (Niyazbekova et al., 2021; Kerimkulova et al., 2021; Kolodii et al., 2019; Khutorna et al., 2021; Jalgasovna, Abduvakhobovna & Ramizitdinovna, 2023).

para cada grupo y vector de inversión. Esta información es valiosa para especialistas en finanzas y economía, y tiene una importancia científica para expertos que estudian las tendencias de globalización y del sector energético. El análisis de grupos complejos utilizado proporciona un sistema estructurado de posibles impulsores de inversión para el desarrollo del sector financiero dentro del FEC. Este marco es aplicable a estudios relacionados que se basan en opiniones y pronósticos de expertos.

**Palabras clave:** global, tendencia, impulsor, financiamiento, energía, futuro.

The third reason why the study of trends in the development of the financial sector of the global FEC is relevant is that this sector has a significant impact on the environment and climate change, as it is associated with the production and consumption of energy resources. An analysis of trends in the financial sector of the fuel and energy sector makes it possible to assess the environmental risks and opportunities associated with investing in the industry and to take measures to reduce the negative impact on the environment (Tulchynska et al., 2021; Manigandan et al., 2023; Ali, Jianguo & Kirikkaleli, 2023; Prokopenko & Shkola, 2012).

The fourth reason why the study of trends in the financial sector of the global fuel and energy complex is relevant is that the existing instability in the world markets is largely related to energy-related industries such as oil, gas, and coal. Analyzing trends in the financial sector of the fuel and energy sector will help predict possible changes in the market and develop strategies to minimize risks and maximize profits (Abbas et al., 2023; Ziolo, 2023; Achuo, Kakeu, & Asongu, 2023).

The fifth reason why the study of trends in the financial sector of the global fuel and energy complex is relevant is geopolitical risks. Geopolitical risks in the FEC may have various implications for the financial sector, including reduced access to capital, changes in market dynamics and changes in tariff policies. Also, such risks could lead to increased market competition and a change in the global balance of power (Dong et al., 2023; Ha, 2023; Chishti, Sinha, Zaman & Shahzad, 2023).

Therefore, an analysis of trends in the development of the global FEC financial sector in the context of geopolitical risks is critical to

understanding the global market situation and making informed investment decisions. The research can help investors and other stakeholders to take measures to minimize risks and protect their interests in the context of uncertainty and instability in the world markets.

In general, the study of trends in the development of the financial sector of the global fuel and energy complex is important for understanding the current state of the industry, assessing its potential and risks associated with investment, as well as for developing strategies for sustainable development and environmental protection.

The purpose of the study is to establish the financial drivers of the present and future development of the global FEC, considering the actual financial and economic picture of the world.

Research Objectives:

1. Analysis of the scientometric landscape regarding the links and mutual influence of the financial sector and the FEC.
2. Analysis of expert opinions, conclusions and forecasts regarding the development of the financial sector of the fuel and energy complex.
3. Establishment of probable drivers for the development of the financial sector of the fuel and energy complex.

The study on the financial drivers of the development of the global fuel and energy complex has both scientific and practical value. The scientific value lies in the identification of financial factors affecting the development of the fuel and energy complex and in their detailed analysis. This allows to deepen the understanding of the mechanisms of functioning of the FEC and to develop new theoretical approaches to the development of the industry. The practical significance of the research is that it allows identifying the most effective strategies for FEC development based on financial drivers. The analysis of financial factors also allows identifying the financial risks associated with the development of the fuel and energy complex, and to develop measures to reduce them. The results obtained can be used in the development of public policy and business strategies in the FEC industry, as well as for investment and decision-making in the financial markets.

## Theoretical Framework or Literature Review

Let us analyze the relevant and current publications of the leading scientometric databases on current trends in the financial sphere of the fuel and energy complex.

A study Colenbrander et al., (2023) found that the transition to a low-carbon economy could pose significant risks to India's financial system due to the changing geopolitical situation, declining demand for oil and gas, climate change, and rising health and security risks.

To mitigate the risks, it is recommended that sustainable development strategies include economic diversification, investment in clean energy and energy efficiency, and active engagement with the international community for financial support.

According to a study by Nibedita and Irfan (2023), energy diversity in the E7 economies lowers carbon emissions, especially when renewable energy is used.

However, dependence on coal, oil, and gas, as well as the high cost of investing in clean energy sources, can weaken the link between energy diversification and carbon reduction. Successful diversification requires sustainable development strategies that include investment in renewable energy, energy efficiency, and infrastructure improvements. The results of the study can be useful for investment decisions and sustainability strategies in E7 economies and elsewhere.

A new model, MATRIX (Multi-Agent Model for Transition Risks with Application to Energy Shocks), is presented in the research Ciola et al., (2023) to evaluate the risks associated with the transition to a low-carbon economy while accounting for energy shocks.

The main conclusions of the study are related to the application of the model to two countries - Italy and France - namely to the identification of risks associated with oil and gas market instability. The simulation results showed that the transition to a low-carbon economy can reduce the dependence on oil and gas and reduce the risks associated with the price volatility of these resources. It was also found that there is a difference in dependence on oil and gas between Italy and France, which emphasizes the need for an individual approach to each country. Overall, the study (Ciola et al., 2023) demonstrates that the development of integrated models can be useful for investment decisions and sustainable development strategies.

Using the UK as a case study, Caglar (2023) examines the importance of the nuclear budget in the shift to a low-carbon economy.

The study finds that increasing the budget for nuclear power can facilitate the transition to a low-carbon economy, especially in an environment where other renewable energy sources are not yet commercially viable. However, the risks associated with nuclear power, such as unforeseen accidents and the high costs of storing radioactive waste, must be considered. The results of the study may be useful for sustainability strategies in other countries, especially those with few renewable energy sources.

The relationship between macroeconomic and financial policies and climate change is examined in a study by Azam, Hunjra, and Taskin (2023).

The results of the study show that macroeconomic policies such as credit, fiscal and monetary policies have a large impact on carbon emissions and climate change. It also found that financial policies, such as investments in renewable energy and sustainable technologies, can reduce carbon emissions and have a positive impact on climate change. The study highlights the need to integrate macroeconomic and financial policies to achieve sustainable development and reduce the impact on climate change. The results can be useful for designing sustainable development strategies and macroeconomic policies that contribute to reducing carbon emissions and combating climate change.

Anu, Singh, Raza, Nakonieczny, and Shahzad (2023) conducted research on the impact of energy efficiency, green innovation, and financial inclusion on environmental productivity in both developed and developing economies. The results of the study show that financial inclusion, green innovation and energy efficiency have a positive impact on environmental productivity in both types of economies. However, these factors have a stronger impact on environmental productivity in developing economies than in developed economies. The results of the study underscore the need for measures to support financial inclusion, green innovation, and energy efficiency in both types of economies, especially in developing economies, in order to achieve sustainable development.

The relationship between money and the dangers related to climate change is examined in a study by Borio, Claessens, and Tarashev (2023). The authors note that the financial sector can play an important role in addressing climate change, but only if it manages expectations and takes action to reduce risks. The authors emphasize the need to better assess climate risks and to develop standards for accounting for these risks in financial reporting. It was also found that taking action to reduce climate change risks can lead to new opportunities for the financial sector, including in renewable energy, green bonds and other green investments. The results of the study can be useful for designing sustainability strategies that take into account the financial aspects of combating climate change.

The study Jia (2023) analyzes the impact of green financial policies on the level of decarbonization of economies using the examples of the United States, China and Russia. The results of the study show that green financial policies have a positive impact on the level of decarbonization of economies in all three countries. However, China is a leader in the implementation of green financial policies, while the U.S. and Russia are lagging behind in this aspect. The study emphasizes the need to strengthen green financial policies in all countries in order to achieve higher levels of decarbonization and combat climate change. The results of the study can be useful for the development of sustainable development strategies based on green financial policies.

Using agent-based integrated evaluation models, Naumann-Woleske (2023) proposes new techniques for evaluating the environmental effects of economic and energy policy. The author notes that agent-based models are more flexible and adaptive than traditional integrated models because they take into account a wider range of variables and interactions between them. It was also found that agent-based models can help in making more accurate economic and energy policy decisions that will contribute to more sustainable development and combat climate change. The results of the study can be useful for the development of sustainable development strategies based on agent-based models.

A study Xu et al., (2023) presents a new method for reconstructing international energy trade networks based on given marginal data. The authors apply graph theory to analyze the network structures of international energy trade flows, including oil, gas, and coal, in order to

identify the most significant nodes and links in these networks. The study shows that energy trade networks have a significant impact on the global economy and environment, and that their analysis can help make better decisions about energy policy and combating climate change. The results of the study can be useful for developing sustainable development strategies that take into account international energy trade flows and their impact on the environment.

Summarizing the results of the research, several key financial drivers for the development of the global fuel and energy complex can be identified. One of them is the transition to a low-carbon economy, which is becoming increasingly important considering the climate change problem. Another important driver is the financial involvement in the development of alternative energy sources, such as solar and wind energy, which are becoming more competitive every year. Geopolitical risks and sanctions, including those against the Russian fuel and energy complex, also have a significant impact on the development of the fuel and energy complex. Of great importance are financial risk analysis tools, such as risk assessment models and integrated assessment models, which make it possible to assess the impact of various factors on the development of the fuel and energy complex and to predict possible risks. In general, the financial drivers of global FEC development are becoming increasingly complex and multidimensional, requiring more in-depth analysis and the development of new strategies for sustainable development.

### Methodology

The following methods were used to achieve the goal and objectives of this study:

1. Correlation analysis regarding the mutual influence of the financial sector and the fuel and energy complex: correlation analysis is used to study the relationship between the financial sector and the fuel and energy complex. This method allows us to assess the degree of dependence between different variables and determine which of them influence the others. Correlation analysis is applied to identify the relationship between financial investments and investments in the fuel and energy sector, as well as to determine which factors may influence the development of these sectors in the future.
2. Method of assessment and analysis of expert opinions, conclusions and forecasts concerning the current state and probable scenarios of development of the FEC financial sector: this method allowed to analyze the works of leading expert organizations, which perform analytical and statistical research of the FEC financial sector. The results obtained were used to analyze the current situation, identify possible risks and trends, as well as to forecast the future development of this sector. This method is an important tool for making strategic decisions and developing action plans in the financial sector of the FEC.
3. Correlation analysis of forecast data of leading expert organizations of the financial sector of the fuel and energy complex: this method provided an opportunity to establish probabilistic drivers of development of the financial sector of the fuel and energy complex, such as changes in the regulatory environment, increased investment in clean energy and growth of demand for alternative energy sources. This method allows us to more accurately assess the likelihood of future trends in the development of the financial sector of the fuel and energy complex and to make appropriate decisions in risk management.

The expert basis, the analytical data of which were used in this study, was formed on the basis of the works of the following specialized organizations Table 1.

**Table 1.**  
Brief characteristics of expert organizations.

| Name of organization  | Brief description and reference   |
|---|---|
| International Energy Agency (IEA)                             | <p><i>The International Energy Agency (IEA)</i> is a key international agency that analyzes and forecasts the global energy market, including various aspects related to production, consumption, security and the environment. IEA is an authoritative source of information for many countries and regions, including the financial sector, which can use IEA forecasts and analysis when making decisions about investing in the fuel and energy sector. In addition, the IEA also provides valuable information and guidance on energy efficiency, increased use of renewable energy and reductions in greenhouse gas emissions, which can be useful for investors who are focused on financing environmentally friendly projects in the FEC. (<a href="https://www.iea.org/">https://www.iea.org/</a>).</p>  |
| International Renewable Energy Agency (IRENA)                 | <p><i>The International Renewable Energy Agency (IRENA)</i> is an international agency established in 2009 to facilitate the development and promotion of renewable energy sources (RES) worldwide. IRENA is a global platform for international cooperation with more than 160 member states, including the European Union. It promotes the exchange of knowledge and transfer of experience in the development and implementation of new technologies, increasing the efficiency and affordability of renewable energy, and supports the development and implementation of strategies and policies in the field of renewable energy. As part of its activities, <i>IRENA</i> conducts analytical research, including in the field of economics, finance and investment in renewable energy, which makes it a significant source of information and analysis for financial sector analysts in the fuel and energy sector dealing with investment in renewable energy (<a href="https://www.irena.org/">https://www.irena.org/</a>).</p>  |
| World Economic Forum (WEF)                                    | <p><i>World Economic Forum (WEF)</i> is an international organization that conducts research, organizes conferences and forums aimed at solving global economic and social problems. WEF is also a center for the exchange of views between business leaders, government officials, experts and academics, as well as representatives of international organizations. In the context of financial sector analysis of the energy sector, <i>WEF</i> conducts research and analyzes trends regarding investments and sustainable development in the energy industry. The organization also considers various aspects of energy policy, including the transition to cleaner energy sources, energy efficiency and risk management in relation to climate change. Drawing on its expertise and network of contacts, <i>WEF</i> acts as a platform for the exchange of experience between stakeholders who work in the financial sector of the fuel and energy sector and strive for sustainable and innovative development of the industry (<a href="https://www.weforum.org/">https://www.weforum.org/</a>).</p> |
| Organisation for Economic Co-operation and Development (OECD) | <p><i>The Organisation for Economic Co-operation and Development (OECD)</i> is an international organization established to coordinate economic policy and cooperation among its member states. In the context of financial sector analysis of the fuel and energy sector, the OECD researches and analyzes energy sector policy and regulation, including issues of energy security, efficiency, innovation and environmental sustainability. The organization provides data and analytical reports that help member states make effective energy decisions, including the financing of FEC projects. <i>The OECD</i> also engages in international cooperation and exchange of experience in the field of energy and finance (<a href="https://www.oecd.org/">https://www.oecd.org/</a>).</p>   |
| International Monetary Fund (IMF)                             | <p><i>The International Monetary Fund (IMF)</i> is an international organization whose main purpose is to ensure global financial stability and promote international trade by coordinating monetary policies and providing financial support. In the context of analyzing the financial sector of the fuel and energy sector, <i>IMF</i> has a number of publications and reports that analyze the impact of financial risks on the economic growth and stability of countries, including those dependent on oil and gas exports. <i>IMF</i> reports also include analyses of economic policy, regulation and measures to reduce greenhouse gas emissions that are important for the development of the fuel and energy sector (<a href="https://www.imf.org/">https://www.imf.org/</a>).</p>  |
| United Nations (UN)   | <p><i>United Nations (UN)</i> is an intergovernmental organization established to maintain peace, security and cooperation between nations. In the context of financial sector analysis of the FEC, the UN acts as a facilitator of coordination and regulation of the international financial system. The UN is also active in sustainable development issues, including the development and implementation of programs to reduce carbon emissions and improve access to clean energy. As part of its programs, the UN works with the financial sector, including international financial institutions, to support projects and programs related to sustainable development, energy efficiency, and greenhouse gas reduction (<a href="https://www.un.org/">https://www.un.org/</a>).</p>  |

|  |  |
|--|--|
| <i>World Bank (WB)</i>   | <p><i>The World Bank (WB)</i> is an international financial institution established to provide financial and technical assistance to developing countries in order to fight poverty and improve living standards. In the context of financial sector analysis of the fuel and energy sector, the World Bank is an important source of financing for energy and climate change projects. It also provides expertise in developing energy strategies and policies, as well as training in these areas (<a href="https://www.worldbank.org/">https://www.worldbank.org/</a>).</p>   |
| <i>European Bank for Reconstruction and Development (EBRD)</i> | <p><i>The European Bank for Reconstruction and Development (EBRD)</i> is an international financial institution established to support market reforms and democratic transition in Central and Eastern Europe, the Caucasus, and Central Asia. The EBRD works in various sectors, including energy, and actively supports the development of renewable energy projects in the region. It also provides financial and technical assistance to companies involved in the production of energy technology and equipment. In the context of FEC financial sector analytics, <i>EBRD</i> is an important source of data and information on energy and climate projects and investments in the region, and plays an important role in supporting the financing of energy projects (<a href="https://www.ebrd.com/">https://www.ebrd.com/</a>).</p>         |
| <i>Energy Information Administration (EIA)</i>                 | <p><i>The Energy Information Administration (EIA)</i> is the U.S. government's energy information agency that collects, analyzes and disseminates information on energy policy, consumption and production in the United States and around the world. <i>EIA</i> provides statistics, forecasts, and analysis that can be useful to financial sector analysts of the FEC as they can be used to forecast energy demand, energy prices, and changes in the structure of the energy sector (<a href="https://www.eia.gov/">https://www.eia.gov/</a>).</p>  |
| <i>European Commission</i>                                     | <p><i>The European Commission (EC)</i> is the executive body of the European Union, which is responsible for developing legislative proposals, monitoring the implementation of laws and managing the budget. In the context of financial sector analysis of the FEC, <i>the EU</i> works to develop and implement policies to promote savings, reduce greenhouse gas emissions and stimulate investment in cleaner technologies and production. <i>The EU</i> also works in the field of energy efficiency, supporting measures aimed at reducing energy consumption in industry, construction and transport. In addition, <i>the EU</i> develops rules and regulations to collect, analyze and disseminate information on energy use and greenhouse gas emissions (<a href="https://commission.europa.eu/">https://commission.europa.eu/</a>).</p> |

Source: Created by the author based on public data

The use of data from leading industry organizations, such as IEA, IRENA, WEF, OECD, IMF, UN, WB, EBRD, EIA and EU, in the analysis of the FEC financial sector provides meaningful information for decision-making in the field of investment, development and industry regulation. Each of these organizations contributes to the analysis of the financial condition and development prospects of the FEC by providing data on the current situation, trends and forecasts in the industry. Through the use of these organizations' data, financial institutions and companies can make better-informed decisions, taking into account the prospects for industry development and the risks associated with climate change and the transition to cleaner and more sustainable energy sources.

## Results and Discussion

The global economy is experiencing a steady growth in energy consumption based on high levels of industrialization, rapid population growth, and increasing economic activity in various regions of the world. Constantly growing energy consumption is an important component of economic development, especially in

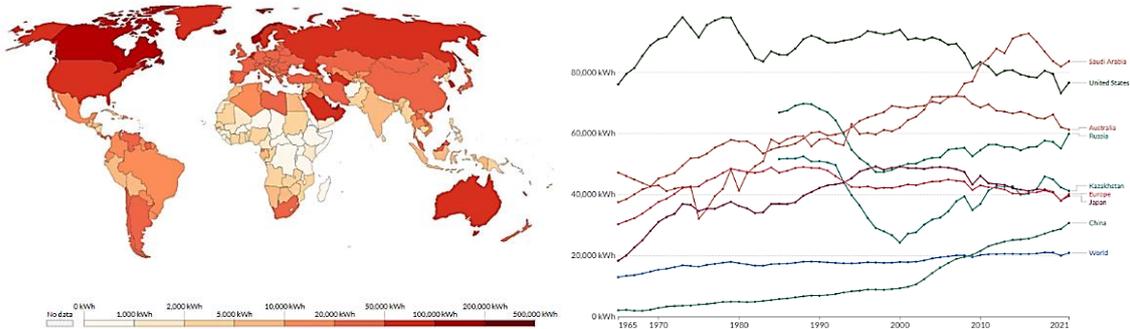
developing countries. Energy is a key factor of production in many sectors of the economy, such as industry, transport and housing. Moreover, population growth and rising living standards also lead to increased energy consumption as people need more energy to meet their needs (Rode al., 2021; Hassan, Wang, Khan & Zhu, 2023; Doytch, Elheddad & Hammoudeh, 2023) - Figure 1, Figure 2.

Increasing global energy consumption, especially through the use of fossil fuels, leads to increased emissions of harmful substances such as carbon dioxide, nitrogen oxides, and sulfur oxides into the atmosphere, resulting in global climate change and air pollution. These emissions are the main cause of the greenhouse effect, which leads to dramatic climate change, as well as deterioration of air quality, human health, and ecosystems. In addition, the extraction and use of fossil fuels can also lead to the pollution of water resources, soil, and the ecological destruction of natural animal habitats. These negative effects underscore the need to develop sustainable and clean energy sources as well as improve energy efficiency to reduce overall energy consumption and environmental

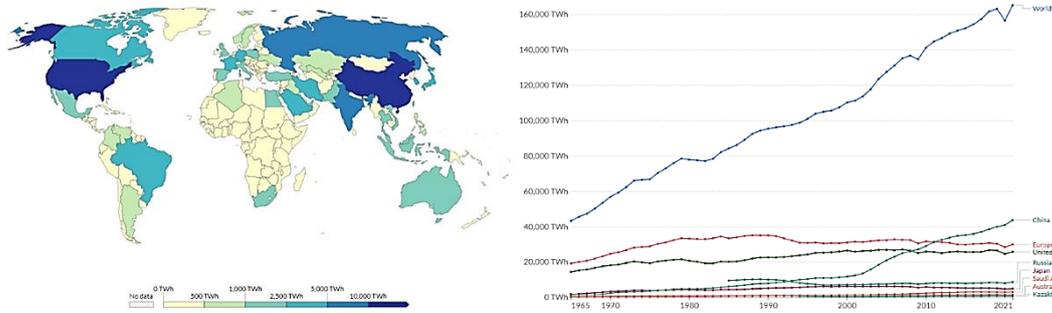
harm (Khan, Zakari, Dagar & Singh, 2022; Al-Shetwi, 2022; Adebayo et al., 2023). Figure 3.

Global energy consumption, which is provided by the fuel and energy complex (FEC), strongly influences climate change, especially global warming. Emissions of greenhouse gases such as carbon dioxide, methane, and nitrogen oxide, which are emitted during the extraction, transportation, production, and combustion of fossil fuels, lead to an increase in these gases in

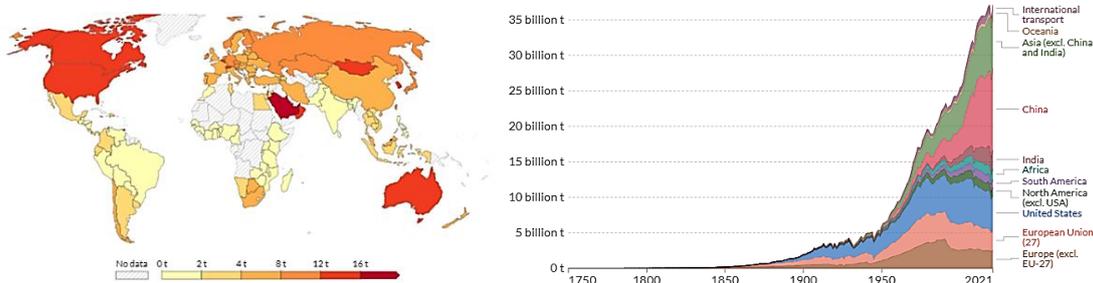
the atmosphere. This in turn leads to an increase in Earth's surface temperature and climatic changes such as area droughts, area floods, changes in the world's oceans, etc. Global warming can also destroy ecosystems and threaten human health. Therefore, it is becoming increasingly important to reduce greenhouse gas emissions and switch to renewable energy sources (Colgan & Hinthorn, 2023; Ballal, Cavalett, Cherubini & Watanabe, 2023; He, Khan, Ozturk & Murshed, 2023). Figure 4.



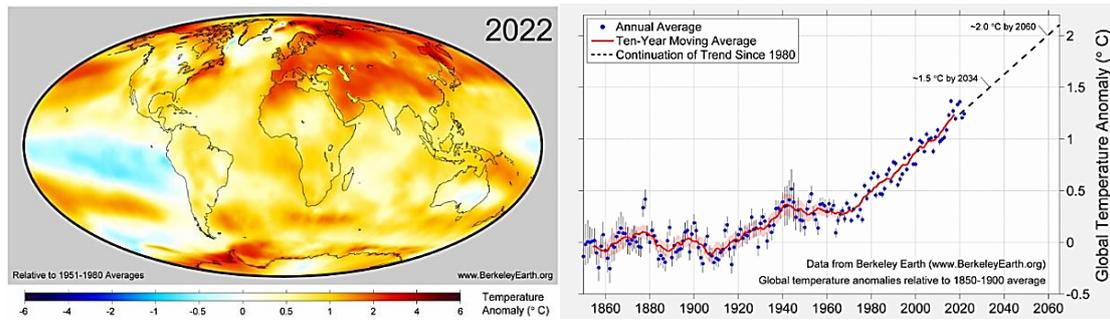
**Figure 1.** Growth dynamics of specific energy consumption (kWh/person)  
Source: Our World in Data (2023a)



**Figure 2.** Global energy consumption growth in absolute units (TWh)  
Source: Our World in Data (2023a)



**Figure 3.** Dynamics of carbon dioxide emissions increase.  
Source: Our World in Data (2023b)

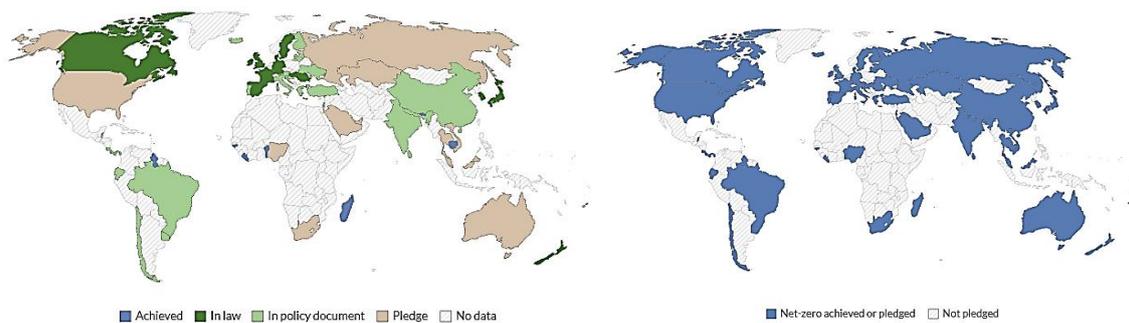


**Figure 4.** Evidence of Climate Change: The Dynamics to Increase Global Temperature on the Planet (Actual and Projected Figures)  
Source: Berkeley Earth (2021)

The problem of climate change has forced the world community to take action. International agreements to reduce greenhouse gas emissions have been signed to combat climate change.

One such agreement is the Kyoto Protocol, adopted in 1997. It provided for a 5.2% reduction in greenhouse gas emissions by 2012 compared to 1990 levels. However, the U.S. did not join the agreement, and some countries, including Russia, withdrew from it after the first period. In 2015, the Paris Agreement was signed, in which more than 190 countries agreed to reduce greenhouse gas emissions and set a goal of limiting global temperature growth to no more than 2 degrees Celsius above pre-industrial

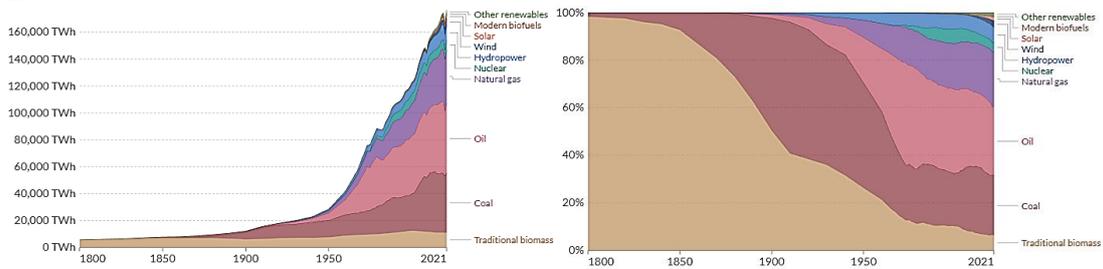
levels. Each country must develop its own national action plan to achieve this goal. Various international organizations and programs, such as the Global Environment Facility, Green Climate Fund, and Carbon Disclosure Project, have also been created to support and encourage efforts to reduce greenhouse gas emissions and switch to cleaner technologies. Despite this, reducing greenhouse gas emissions remains a pressing issue, as many countries continue to depend on energy sources that significantly pollute the environment. A number of countries have now adopted policies to reduce man-made gas emissions, Net Zero (Cheng, Luo, Jenkins & Larson, 2023; Wang et al., 2023; Groves, Santosh & Zhang, 2023). Figure 5.



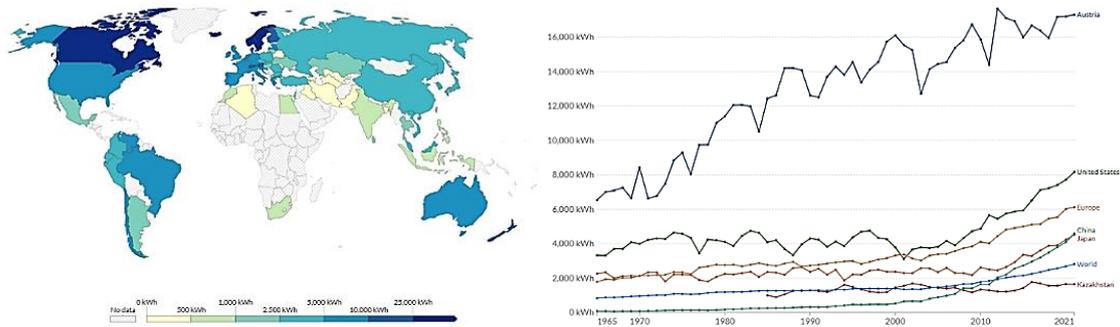
**Figure 5.** Current status of countries in relation to *Net Zero* policy.  
Source: Our World in Data (2023b)

Considering the growing problem of climate change and the growing awareness of the need to reduce greenhouse gas emissions, the global community has come to the conclusion that energy from fossil sources must be gradually replaced by energy from renewable sources. Renewable sources are defined as energy sources that use endless natural resources, such as solar, wind, hydropower, geothermal energy, and others. These energy sources reduce dependence on fossil fuels, reduce greenhouse gas emissions

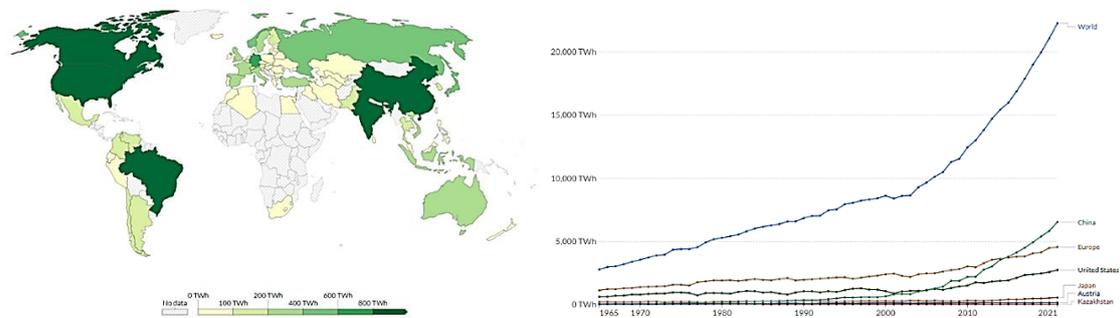
and reduce the environmental impact. In addition, the use of renewable energy sources allows for a more stable energy future and reduces the geopolitical risks associated with the extraction and transportation of fossil fuels. Many countries are currently developing and implementing programs to transition to renewable energy, and this is an important step in combating climate change (Sayed et al., 2023; Siddik et al., 2023; Hossain et al., 2023). Figure 6 - Figure 8.



**Figure 6.** Dynamics of the global energy balance.  
Source: Our World in Data (2023a)



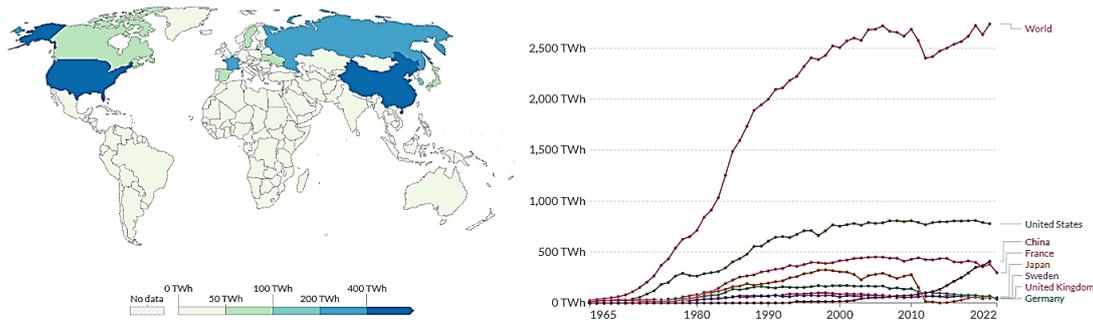
**Figure 7.** The dynamics of specific energy consumption from renewable energy sources (kWh/person)  
Source: Our World in Data (2023a)



**Figure 8.** Dynamics of global energy consumption from renewable sources in absolute units (TWh)  
Source: Our World in Data (2023a)

The issue of nuclear power raises mixed reactions in the global community. On the one hand, nuclear power is considered one of the most environmentally friendly energy sources that do not produce greenhouse gases. In addition, this energy is relatively cheap and provides a high level of reliability of electricity supply. On the other hand, the risks of nuclear accidents, including the 1986 Chernobyl disaster, raise serious safety concerns. In addition, the issue of disposal of radioactive waste, which has

retained its radioactivity for thousands of years, is a problem for many countries. Despite these concerns, many countries continue to use nuclear power, while others are trying to reduce their dependence on it in favor of renewable energy sources. Consequently, the global community continues to debate the future of nuclear power and tries to find the best balance between its potential benefits and risks (Sadiq et al., 2023; Simionescu, 2023, Chen, Jiang, Wang, & Wang, 2023) Figure 9.

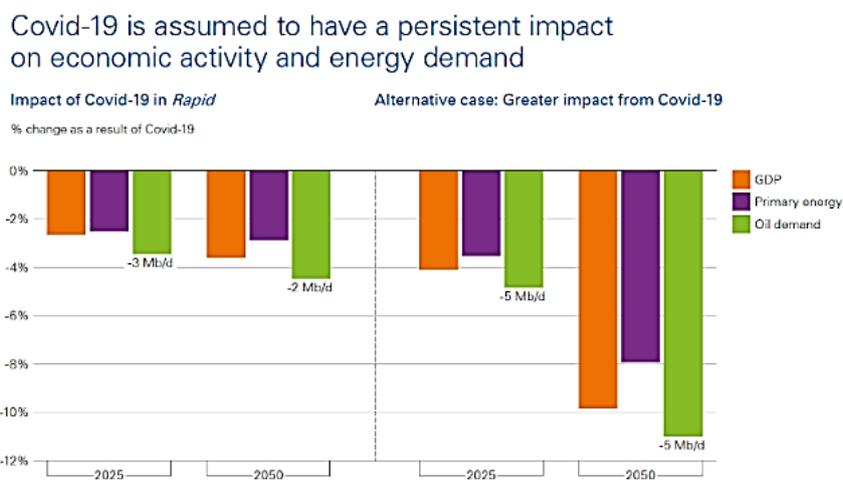


**Figure 9.** Dynamics of nuclear power development  
Source: Our World in Data (2023a)

The Covid-19 pandemic has had a significant impact on the global fuel and energy complex. Measures to control the spread of the virus have reduced energy consumption in many countries, leading to a drop in oil and gas prices and a reduction in energy production and extraction.

At the same time, the crisis caused an increase in investment in renewable energy and stimulated

the development of new technologies, such as digitalization and energy storage technology. In addition, the pandemic has caused changes in consumer habits, such as an increase in the proportion of working from home and a decrease in travel, which has also affected energy demand (Gollakota & Shu, 2023; Alam et al., 2023; Bhattacharya & Bose, 2023) Figure 10.



**Figure 10.** Assessing the impact of pandemic restrictions in the short and long term.  
Source: WEF (2020)

Thus, the analysis of open sources data allows us to draw conclusions about the main drivers of the current and future development of the economic sector of the fuel and energy complex (Figure 11):

1. First Rank Drivers - Reasons:

- a. Emission of man-made gases into the environment.
- b. Global climate change.
- c. Pandemic Constraints.
- d. The global economic crisis.
- e. Nuclear power.
- f. Armed aggression and military conflicts.

2. Second-order drivers - solutions:

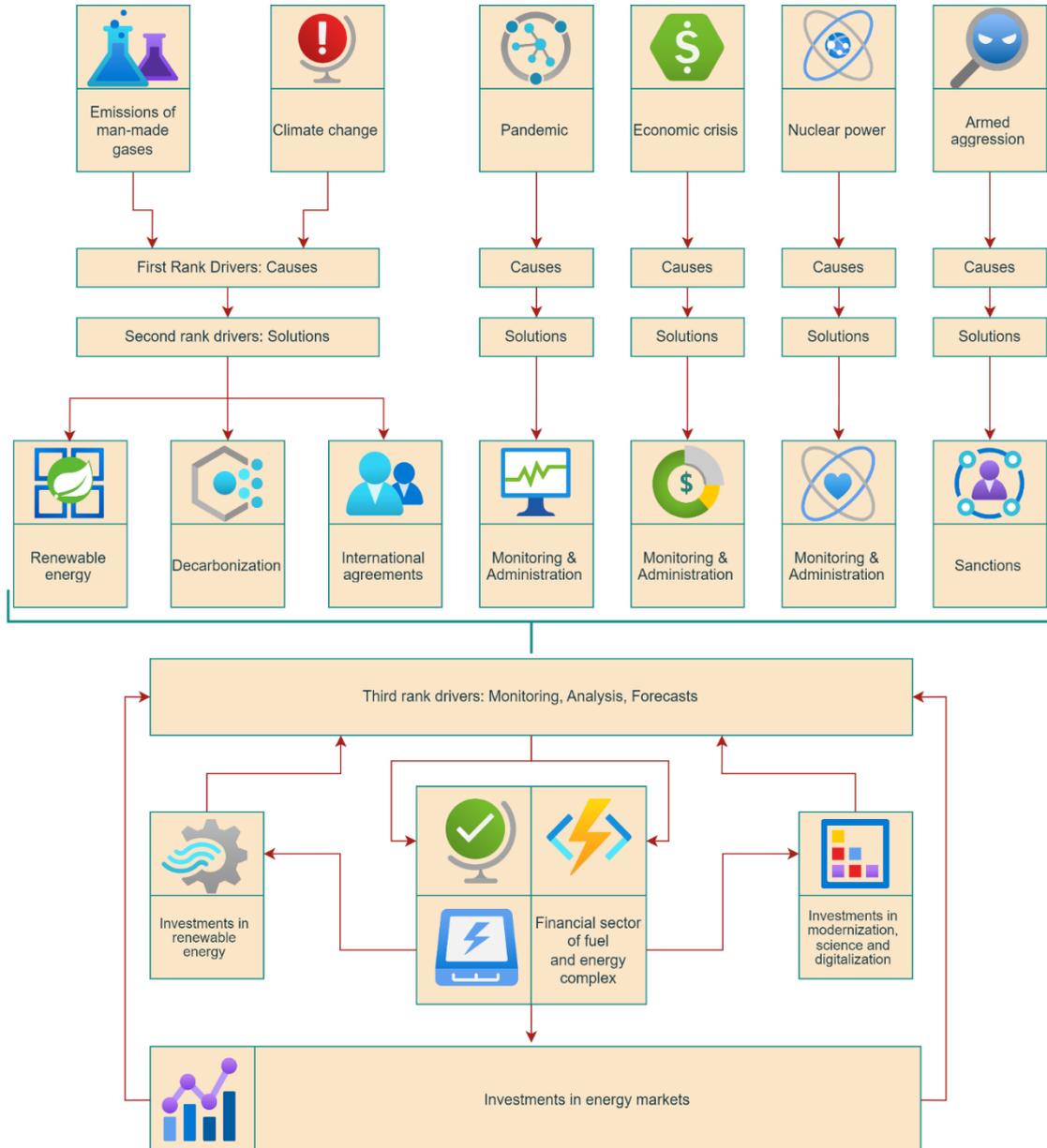
- a. Renewable energy, energy conservation, energy efficiency.
- b. Decarbonization Policy and *Net Zero*.
- c. International agreements in the field of energy cooperation.
- d. Monitoring and management.
- e. Sanctions against aggressor countries.

3. Third rank drivers - monitoring, analysis, forecasts (interrelated actions affecting the functioning and development of the financial sector of the FEC):

- a. Investments in renewable energy and *Net Zero* technology.
- b. Investments in modernization, research and digitalization of the energy sector.
- c. Investments in energy markets.

functioning and development of the financial sector of the fuel and energy complex, while setting the most probable trends of development of the financial sector of the global fuel and energy complex based on expert opinions and forecasts of the previously defined expert environment (Table 1).

The presented driver system (Figure 11) contains a wide nomenclature of factors and aspects of

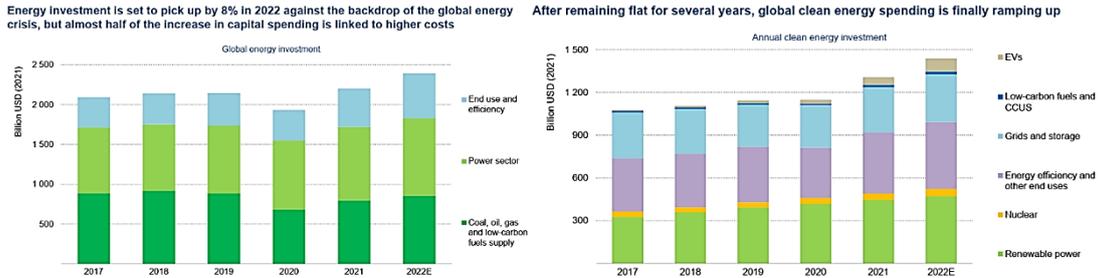


**Figure 11.** System of drivers for the functioning and development of the financial sector of the fuel and energy complex

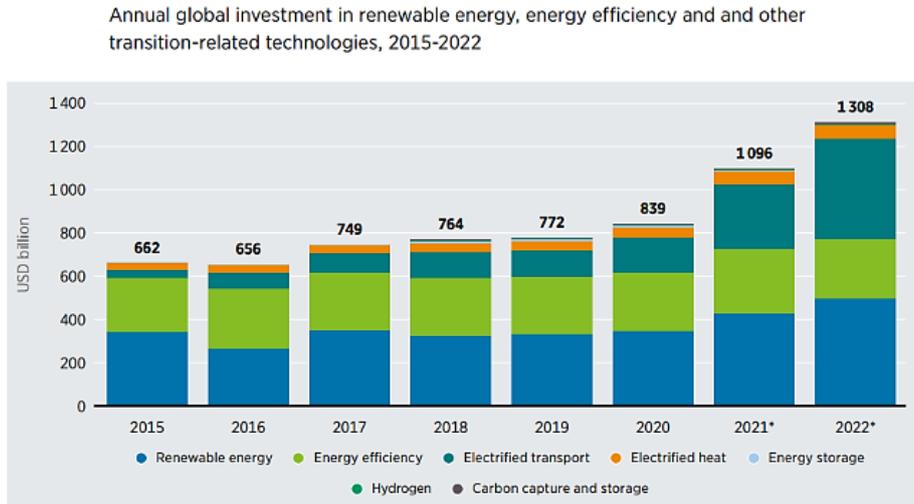
Source: Created by the authors

In particular, investment analysts and forecasts, such as the IEA (Figure 12), IRENA (Figure 13),

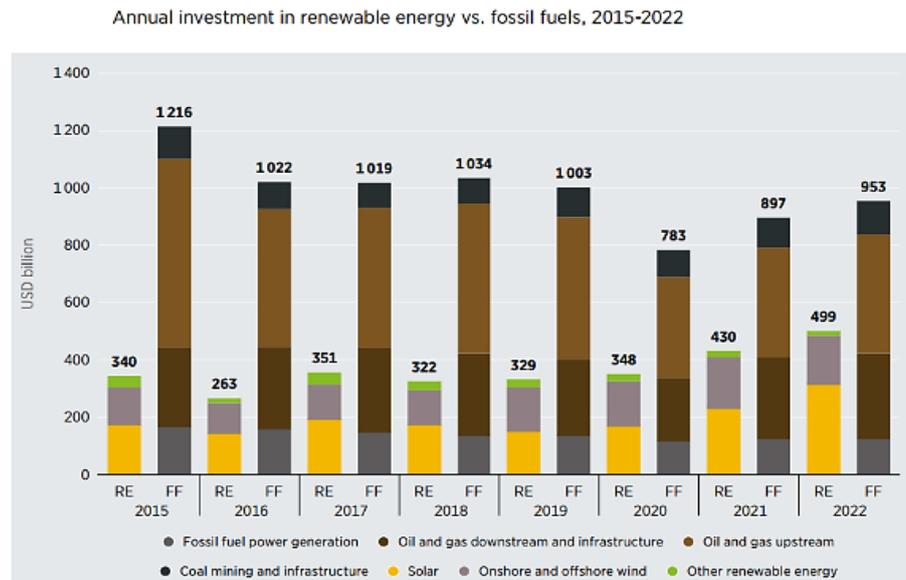
WEF (Figure 14), OECD (Figure 15), IMF (Figure 16), etc.



**Figure 12.** IEA Energy Investment Analysis  
Source: IEA (2023a)



**Figure 13.** Energy investment analysis from IRENA  
Source: IRENA (2023)



**Figure 14.** Energy investment analysis from WEF  
Source: WEF (2023)

Annual financial commitments in renewable energy, by technology, 2013-2022

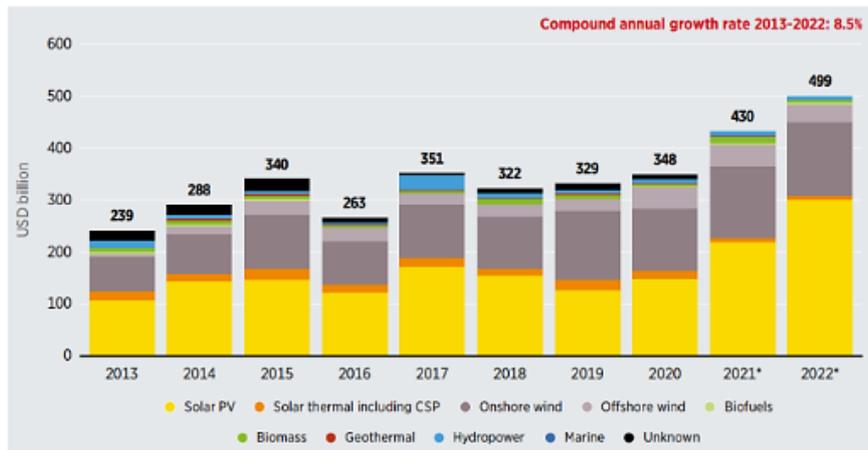


Figure 15. OECD Energy Investment Analysis  
Source: OECD (2023)

Fossil fuel investment in countries with and without net zero emissions pledges, 2015-22

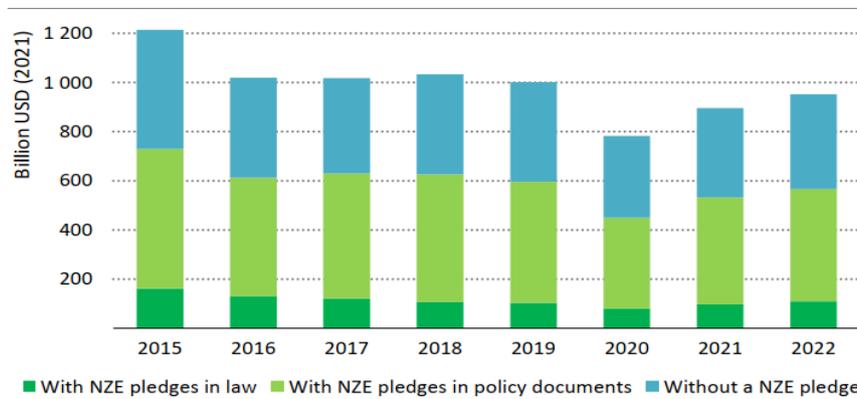


Figure 16. IMF Energy Investment Analysis  
Source: IMF (2023)

Each of the expert organizations, such as IEA, IRENA, WEF, OECD, IMF, UN, WB, EBRD, EIA, EU, has its own unique approach to the analysis and assessment of the functioning and development of the financial sector of the fuel and energy complex. Each organization defines its priority aspects and investment flows, which will determine the subsequent development of the subject area and form analytical proposals regarding the short-term and long-term prospects of the financial sector and the FEC as a whole.

This creates multiple perspectives on the development of the financial sector and the FEC and provides a multifaceted approach to solving the problems associated with them. It also helps expert organizations and governments develop more effective strategies and action plans to meet global climate, energy and sustainable development goals.

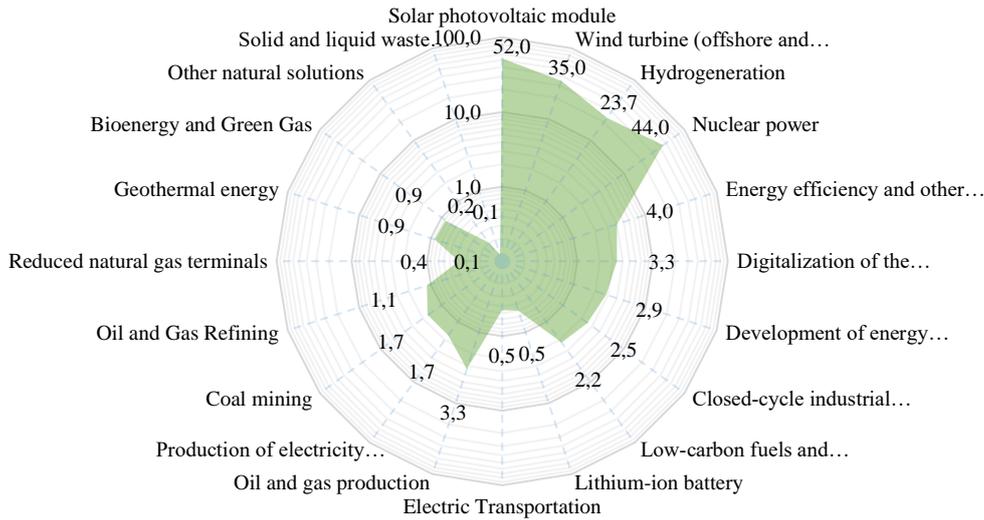
Based on the data of expert opinions and forecasts let's make a rating of likely drivers of development – Table 2, Figure 17.

**Table 2.**

*Comprehensive analysis of expert ratings of investment drivers for the development of the financial sector of the global fuel and energy complex.*

|   | IEA | IRENA | WEF | OECD | IMF | UN | WB | EBRD | EIA | EU | Median rating | Rank | Number of times top 1 | Number of times top 2 | Number of times top 3 | Number of times top-4 | Number of times top 5 | Relative investment rating |
|---|-----|-------|-----|------|-----|----|----|------|-----|----|---------------|------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|----------------------------|
| Solar photovoltaic module   | 1   | 1     | 2   | 7    | 6   | 1  | 9  | 1    | 2   | 2  | 1             | 1    | 4                     | 3                     | 0                     | 0                     | 0                     | 52,0                       |
| Wind turbine (offshore and onshore)                                   | 2   | 2     | 3   | 8    | 7   | 2  | 10 | 2    | 3   | 3  | 2             | 1    | 0                     | 4                     | 3                     | 0                     | 0                     | 35,0                       |
| Hydrogeneration   | 3   | 3     | 5   | 9    | 8   | 3  | 11 | 3    | 4   | 4  | 3             | 1    | 0                     | 0                     | 4                     | 2                     | 1                     | 23,7                       |
| Nuclear power   | 4   | 20    | 1   | 1    | 5   | 20 | 1  | 6    | 1   | 5  | 1             | 1    | 4                     | 0                     | 0                     | 1                     | 2                     | 44,0                       |
| Energy efficiency and other end uses                                  | 5   | 6     | 4   | 11   | 12  | 8  | 13 | 7    | 5   | 6  | 5             | 2    | 0                     | 0                     | 0                     | 1                     | 2                     | 4,0                        |
| Digitalization of the financial sector of the fuel and energy complex | 6   | 15    | 6   | 12   | 16  | 10 | 12 | 8    | 6   | 7  | 6             | 1    | 0                     | 0                     | 0                     | 0                     | 0                     | 3,3                        |
| Development of energy networks and storage facilities                 | 7   | 16    | 7   | 13   | 15  | 11 | 14 | 9    | 7   | 8  | 7             | 1    | 0                     | 0                     | 0                     | 0                     | 0                     | 2,9                        |
| Closed-cycle industrial solutions                                     | 8   | 19    | 10  | 14   | 13  | 12 | 15 | 15   | 8   | 13 | 8             | 1    | 0                     | 0                     | 0                     | 0                     | 0                     | 2,5                        |
| Low-carbon fuels and carbon capture technologies                      | 9   | 17    | 11  | 15   | 14  | 9  | 16 | 10   | 9   | 9  | 9             | 1    | 0                     | 0                     | 0                     | 0                     | 0                     | 2,2                        |
| Lithium-ion battery   | 10  | 7     | 8   | 16   | 17  | 13 | 7  | 11   | 10  | 10 | 10            | 4    | 0                     | 0                     | 0                     | 0                     | 0                     | 0,5                        |
| Electric Transportation   | 11  | 8     | 9   | 17   | 18  | 14 | 8  | 12   | 11  | 11 | 11            | 4    | 0                     | 0                     | 0                     | 0                     | 0                     | 0,5                        |
| Oil and gas production  | 12  | 9     | 12  | 2    | 1   | 16 | 2  | 16   | 17  | 1  | 12            | 6    | 2                     | 2                     | 0                     | 0                     | 0                     | 3,3                        |
| Production of electricity from fossil fuels                           | 13  | 12    | 14  | 6    | 3   | 17 | 4  | 17   | 18  | 12 | 12            | 4    | 0                     | 0                     | 1                     | 1                     | 0                     | 1,7                        |
| Coal mining   | 14  | 11    | 15  | 4    | 4   | 18 | 3  | 18   | 20  | 14 | 14            | 5    | 0                     | 0                     | 1                     | 2                     | 0                     | 1,7                        |
| Oil and Gas Refining  | 15  | 10    | 13  | 3    | 2   | 19 | 5  | 19   | 19  | 15 | 19            | 8    | 0                     | 1                     | 1                     | 0                     | 1                     | 1,1                        |
| Reduced natural gas terminals   | 16  | 18    | 16  | 5    | 11  | 15 | 6  | 20   | 12  | 16 | 16            | 6    | 0                     | 0                     | 0                     | 0                     | 1                     | 0,4                        |
| Geothermal energy   | 17  | 4     | 17  | 10   | 9   | 4  | 17 | 5    | 13  | 17 | 17            | 7    | 0                     | 0                     | 0                     | 2                     | 1                     | 0,9                        |
| Bioenergy and Green Gas   | 18  | 5     | 19  | 18   | 10  | 5  | 18 | 4    | 14  | 18 | 18            | 6    | 0                     | 0                     | 0                     | 1                     | 2                     | 0,9                        |
| Other natural solutions   | 19  | 13    | 20  | 20   | 19  | 6  | 19 | 13   | 15  | 20 | 19            | 5    | 0                     | 0                     | 0                     | 0                     | 0                     | 0,2                        |
| Solid and liquid waste management                                     | 20  | 14    | 18  | 19   | 20  | 7  | 20 | 14   | 16  | 19 | 20            | 8    | 0                     | 0                     | 0                     | 0                     | 0                     | 0,1                        |

Source: Created by the author based on expert data

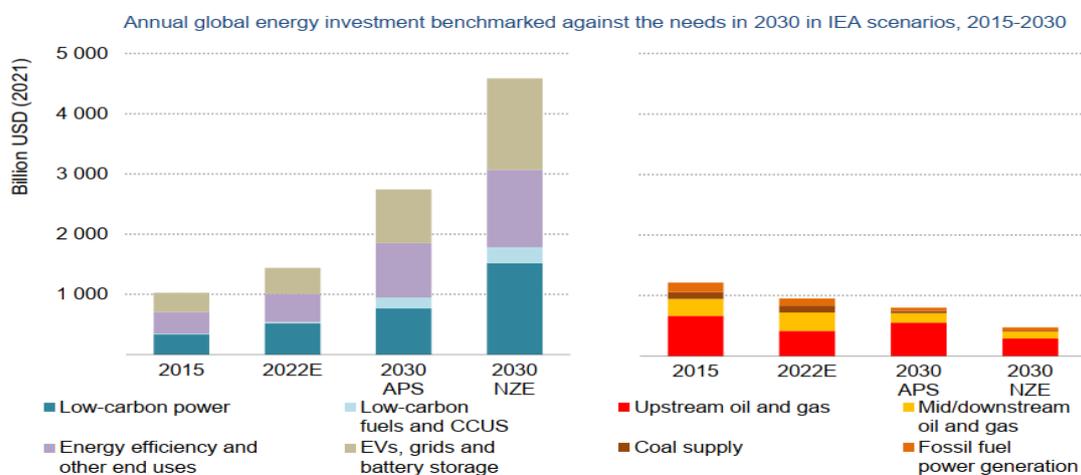


**Figure 17.** Determination of investment drivers of the global FEC financial sector development by the relative expert rating parameter

Source: Created by the author based on expert data

Based on the analysis of expert ratings and the formation of a median relative rating (Table 2, Figure 17), the correlation with the pre-established system of drivers for the functioning and development of the financial sector of the fuel and energy complex has been established (Figure 12). According to the results presented (Table 2, Figure 17), it was found that the surveyed expert environment highlights renewable and nuclear energy as a leader of investment attractiveness, indicating a gradual departure of the global community from the fossil hydrocarbon energy source to a more environmentally friendly and sustainable energy supply. Investment trends determined as a result

of the analysis of expert opinions, conclusions and forecasts directly affecting the functioning and development of the financial sector of the global FEC (Figure 12, Table 2, Figure 17), not only correlate with the views of the scientific community (regarding the prevalence of investment attractiveness for renewable energy - Laureti, Massaro, Costantiello & Leogrande, 2023; Kumar et al., 2023; Li et al, 2023; and regarding the significant potential and impact on the FEC of the future of nuclear power - Golgovici et al., 2023; Rehm, 2023; Bistline et al., 2023), but also share a tendency to bias with the projections of leading international energy organizations. Figure 18.



**Figure 18.** Analytical forecast regarding the reduction of fossil fuels in the investment balance of the financial sector of the FEC until 2050

Source: IEA (2023b)

However, a comprehensive analysis (Figure 12, Table 2, Figure 18) allows us to draw specialized conclusions:

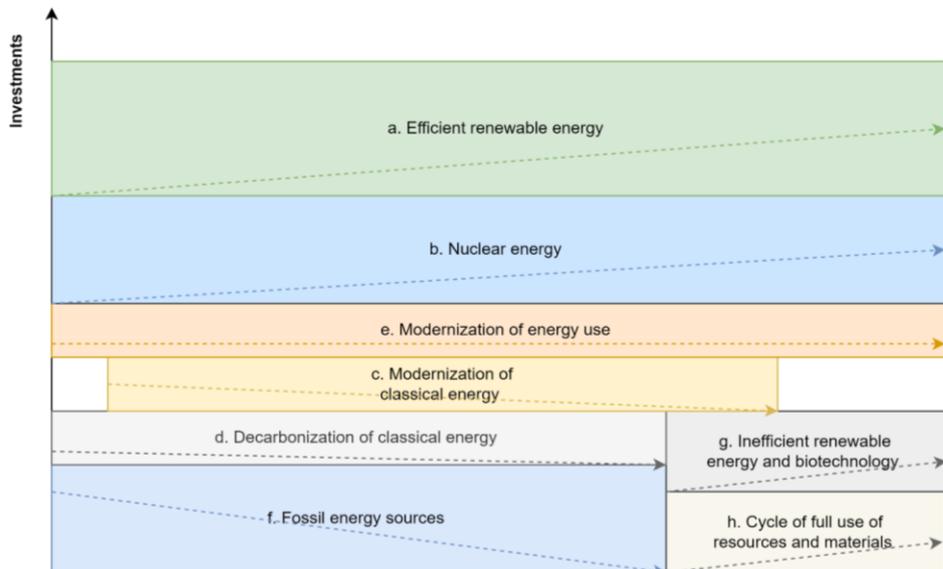
1. There is a clustering of investment drivers of the functioning and development of the financial sector of the global FEC, in particular, it is possible to identify the following clusters (Table 2, Figure 18) (Table 3):
  - a. Efficient renewable energy (rank 1).
  - b. Nuclear power (rank 1).
  - c. Modernization of classical energy (rank 1, 2).
  - d. Decarbonization of classical energy (rank 1, 2).
  - e. Modernization of energy use (rank 4).
  - f. Fossil energy sources (rank 5 - 8).
  - g. Low-efficiency renewable energy and biotechnology (rank 7, 8).
  - h. Cycle of full use of resources and materials (rank 8).
2. There is a chronometric divergence of the highlighted cluster groups with a gradual withdrawal of the fossil sources cluster and a large development of the renewable and nuclear energy cluster (Figure 19).

**Table 3.**

*Clustering of investment drivers for the functioning and development of the financial sector of the global FEC.*

| Cluster  | Composition of the cluster  | Median rating | Rank |
|--|---|---------------|------|
| a. Efficient renewable energy                        | Solar photovoltaic module   | 1             | 1    |
|  | Wind turbine (offshore and onshore)                                   | 2             | 1    |
| b. Nuclear power                                     | Hydrogeneration   | 3             | 1    |
|  | Nuclear power   | 1             | 1    |
| c. Modernization of classical energy                 | Energy efficiency and other end uses                                  | 5             | 2    |
|  | Digitalization of the financial sector of the fuel and energy complex | 6             | 1    |
|  | Development of energy networks and storage facilities                 | 7             | 1    |
| d. Decarbonization of classical energy               | Closed-cycle industrial solutions                                     | 8             | 1    |
|  | Low-carbon fuels and carbon capture technologies                      | 9             | 1    |
| e. Modernization of energy use                       | Lithium-ion battery   | 10            | 4    |
|  | Electric Transportation   | 11            | 4    |
| f. Fossil energy sources                             | Oil and gas production  | 12            | 6    |
|  | Production of electricity from fossil fuels                           | 12            | 4    |
|  | Coal mining   | 14            | 5    |
|  | Oil and Gas Refining  | 19            | 8    |
| g. Low-efficiency renewable energy and biotechnology | Reduced natural gas terminals   | 16            | 6    |
|  | Geothermal energy   | 17            | 7    |
|  | Bioenergy and Green Gas   | 18            | 6    |
| h. Cycle of full use of resources and materials      | Other natural solutions   | 19            | 5    |
|  | Solid and liquid waste management                                     | 20            | 8    |

Source: Created by the authors



**Figure 19.** Chronometric divergence of selected cluster groups with the gradual withdrawal of the fossil sources cluster and the large development of the renewable and nuclear energy cluster.  
 Source: Created by the authors

## Conclusions

Thus, an analysis of expert opinions and forecasts by leading international organizations shows that in the coming years the financial sector of the global fuel and energy complex will continue the transition to investing in renewable energy and reducing dependence on fossil sources. However, the global community remains divided about the future of nuclear power, which could become one of the alternative solutions to reduce the carbon footprint. Overall, an analysis of expert opinions and forecasts demonstrates that the financial sector of the global FEC will continue to adapt to changing environmental requirements and risk factors, given the trend toward sustainability and responsibility in investment decisions. Despite the general trend of increasing investment in renewable energy, there are regional differences in the attractiveness of different clusters. For example, in some regions of the world, such as the Middle East, there is still a high demand for fossil energy, while in other regions, such as Europe, there is a shift to renewables.

In addition, it can be noted that the effectiveness of investment in different clusters can vary significantly depending on a number of factors, such as technological progress, regulatory measures, political stability, and other factors. Therefore, continuous monitoring and analysis of the market is necessary to make informed decisions about investing in different clusters. The benefits of using the results of the clustering of investment drivers of the functioning and

development of the financial sector of the global FEC can be different.

First, this clustering can be used for decision-making in the field of investment in the FEC, allowing the selection of the most promising areas of development and reducing the risks of investing in less promising sectors.

Secondly, the results of clustering can be used to determine the priority areas of national FEC development and the formation of strategies and programs for the development of this industry.

Third, clustering can be used as a tool to identify trends and prospects in the global energy industry and shape international cooperation strategies.

Finally, the results of this clustering can be used to more accurately predict the future development of the FEC and financial sector, which can help improve the quality of decision-making and reduce risks for businesses and investors. For further study and analysis of the functioning and development of the financial sector of the global FEC, it is possible to use more diverse research methods, such as expert evaluations, multiple regression analyses, cluster analysis and other statistical methods.

It is also possible to consider various aspects that may affect the functioning and development of the financial sector of the fuel and energy complex, such as political, economic and social factors. It is important to take into account the interdisciplinary nature of the subject of research

and the involvement of specialists in different fields of knowledge for a more complete analysis.

In addition, it should be considered that the global FEC and financial sector are dynamic and constantly changing areas, so it is necessary to regularly update and revise the results and forecasts obtained in order to monitor changes and adapt to them. This can help to form more accurate and timely analytical recommendations and suggestions for investors and participants in the financial sector of the FEC.

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## Social Media Marketing as a tool for promoting services and goods on the internet

### Social Media Marketing como herramienta de promoción de servicios y bienes en Internet

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#### Abstract

This article provides an in-depth analysis of the role of social media as a powerful tool for promoting services and goods on the Internet in the conditions of impressions economy. The authors take a closer look at the role of social media in marketing strategies, its impact on consumers, and the effectiveness of campaigns. The main purpose of the article is to explore various strategies, tactics, and success factors of using social media to support a brand, engage the audience and increase sales. Analyzing various social media marketing strategies, the authors of the article emphasize the importance of creating interesting and meaningful content and engaging with the audience. It reveals the importance of creating a brand identity and supporting it through social media channels. The article also examines the impact of social media on customer purchase, conversion, and loyalty. Among the key success factors of social media marketing, the article identifies the choice of the right platforms, measuring performance, establishing effective interaction with the audience, and analyzing the competitive environment. The authors emphasize the need to combine traditional

#### Resumen

Este artículo analiza en profundidad el papel de los medios sociales como poderosa herramienta de promoción de servicios y bienes en Internet. Los autores examinan detenidamente el papel de los medios sociales en las estrategias de marketing, su impacto en los consumidores y la eficacia de las campañas. El objetivo principal del artículo es explorar diversas estrategias, tácticas y factores de éxito del uso de los medios sociales para apoyar una marca, captar la atención del público y aumentar las ventas. Analizando diversas estrategias de marketing en las redes sociales, los autores del artículo destacan la importancia de crear contenidos interesantes y significativos y de captar la atención del público. Revelan la importancia de crear una identidad de marca y apoyarla a través de los canales de las redes sociales. El artículo también examina el impacto de los medios sociales en la compra, la conversión y la fidelidad de los clientes. Entre los factores clave del éxito del marketing en medios sociales, el artículo identifica la elección de las plataformas adecuadas, la medición del

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and digital marketing strategies to achieve the best results.

This article is a valuable resource for marketers, entrepreneurs, and marketing professionals looking to increase their online presence and use social media to successfully promote their products and services, taking into account impressions of market subjects. The article provides important tips, strategies, and examples of successful campaigns that contribute to achieving greater success in digital marketing through social media.

**Keywords:** marketing strategies, impressions economy, digital economy, digital environment, business, innovation.

## Introduction

The relevance of this topic is due to the rapid development of technology and the growing popularity of the Internet, especially in the conditions of the impression economy. Today, social networks serve not only as a platform for personal communication but are also becoming an important marketing tool. One of the key elements of web marketing is the promotion of goods, services and the company's brand using innovative approaches. One of them is the use of social media to increase audience reach, increase brand loyalty and awareness, and use indirect advertising. Social media marketing (SMM) can be viewed as the process of driving traffic or attracting attention to a brand or product through a set of activities that use social media as channels to promote companies and achieve other business goals. Researchers perceive this concept as a process of building a loyal audience on social media by publishing useful information and interacting with potential consumers (Sivarajah, Irani, Gupta & Mahroof, 2020).

The main components of web marketing, as well as other forms of promotion, are:

1. Product or service that needs to be marketed through social media.
2. An offer that reflects the unique characteristics of the product or service being promoted and can have a beneficial effect for a potential client.
3. Target audience - a group of potential customers to whom the offer is directed.
4. Conversion - the process of turning social media visitors into your customers, which takes place through social media.

rendimiento, el establecimiento de una interacción eficaz con la audiencia y el análisis del entorno competitivo. El autor subraya la necesidad de combinar estrategias de marketing tradicional y digital para lograr los mejores resultados.

Este artículo es un valioso recurso para vendedores, empresarios y profesionales del marketing que deseen aumentar su presencia en Internet y utilizar las redes sociales para promocionar con éxito sus productos y servicios. El artículo ofrece importantes consejos, estrategias y ejemplos de campañas de éxito que contribuyen a lograr un mayor éxito en el marketing digital a través de las redes sociales.

**Palabras clave:** estrategias de marketing, economía digital, entorno digital, empresa, innovación.

5. Promotion - methods, forms, and strategies that are planned to be used to interact with the target audience to achieve maximum conversion (El Junusi, 2020).

Internet marketing is an economical and accessible means of achieving marketing goals. The use of social media in the conditions of impressions economy (SMM) is based on principles that stem from the rapid growth of the user audience (Dykan, Pakharenko, Saienko, Skomorovskyi & Neskuba, 2021). These principles include:

1. Low cost, which makes online marketing affordable for many companies.
2. Flexible advertising payment systems that allow you to effectively place ads.
3. Targeted targeting, which makes it possible to fine-tune advertising to a specific audience.
4. Quickly change the content of advertising messages to adapt to the changing needs and requirements of consumers.
5. Technical capabilities for using visual and audio elements in the presentation of information.
6. Accurate tools for measuring the effectiveness of advertising campaigns and collecting statistics.
7. Ensuring two-way online communication between advertiser and consumer.
8. Cost-effectiveness, which contributes to the growth of the popularity of marketing campaigns in social networks.
9. Attracting user interest and increasing demand for a product or service.

10. Development of the market of providers and services related to Internet marketing.
11. Increasing the youth audience and access to broadband Internet.

One of the features of promoting business through social media is the ability to communicate directly with the audience, which allows you to track their reactions in real-time. Daily contact with social media users has a significant beneficial effect, as they are willing to share information and spread brand messages. This helps to increase the activity of the audience, both online and offline, in relation to the company's product on social media.

However, it should be noted that although social media marketing has received considerable attention and recognition, there is a need for further research into some aspects. For example, more research is needed on the effectiveness of different social media marketing strategies and their impact on different types of businesses and audiences. It is also important to study the role of online personalities (influencers) in social media and their impact on consumer awareness and purchasing decisions. Further research in these areas can broaden the understanding of social media marketing, contribute to the development of more effective strategies and identify new opportunities to improve the effectiveness of social media marketing campaigns.

The purpose of the article is to study the role of social media in the modern marketing environment and determine its importance as an effective tool for promoting goods and services in the online environment in the conditions of impressions economy. The article aims to explore various strategies, tactics, and key success factors for using social media to support a brand, engage an audience and increase sales.

### **Theoretical Framework or Literature Review**

The article by Martynenko, Losheniuk, Demchenko, & Osypenko, (2023), reveals the development and implementation of future digital marketing strategies to improve the quality of a product or service and competitiveness in the market. The study emphasizes the need to adapt to changes in the marketing environment and use innovative digital approaches to improve the effectiveness of marketing strategies. The article offers a study of the prospects for the development of digital marketing strategies and practical methods to ensure the success of future campaigns.

Karapetov, & Rakhimov (2021), discusses future trends in the field of event marketing in the context of economic instability. The study emphasizes the importance of adapting event marketing strategies to changes in the social and economic environment, which requires specialists to find new approaches and tools. The article analyzes the predicted impact of economic factors on future effective event marketing strategies and recommends ways to improve their effectiveness.

Drummond, O'Toole, and McGrath (2020) explore the various strategies and tactics used on social media to promote goods and services. They identify the main factors that influence the effectiveness of social media marketing campaigns.

Ampountolas, Shaw & James (2019) examine the role of social media as a distribution channel for promoting pricing strategies. They analyze the impact of social media on price perception, consumer behavior, and competitive advantage.

Ebrahim (2020) examines the impact of social media marketing on brand equity and consumer loyalty. He highlights the role of trust in the effectiveness of social media marketing strategies and their impact on creating positive brand attitudes and consumer loyalty.

For this study, it is worth mentioning the work of Dolega, L., Rowe, F., & Branagan, E. (2021), which explores the impact of social media marketing on web traffic, orders, and sales in retail. The authors draw attention to the importance of digital communication channels for achieving sales results and identify the connection between social media activity and retail website metrics.

The article by Maria, Pusriadi, Hakim, & Darma (2019), investigates the impact of social media marketing, peer-to-peer, and advertising effectiveness on consumer brand awareness and purchase intentions. The study shows that the use of social media in conjunction with peer-to-peer and effective advertising increases brand awareness and purchase intentions.

Melović, Jocović, Dabić, Vulić, & Dudic (2020) examined the impact of digital transformation and digital marketing on brand promotion, positioning, and development of the network business in general. The study shows that the use of digital technologies in marketing helps to improve brand promotion in the market.

One of the most important unexplored issues in the scientific community is the study of the impact of interactive content on social media on consumer acquisition and retention. Little is known about how different formats of interactive content, such as polls, quizzes, or contests, affect consumer engagement and stimulate their participation in brand activities. The literature analysis showed that there is a need for further research on the effectiveness of personalization in digital marketing. Although personalized advertising messages and offers are becoming more common, it is necessary to determine which specific personalization strategies are most effective for different groups of consumers and what factors influence their reactions and perceptions. Given the above-mentioned unexplored aspects, further research can expand our understanding of the impact of digital marketing on consumers and identify new opportunities for improving marketing strategies.

### Methodology

This study used a wide range of methods to analyze the situation and prospects for the development of digital marketing in the field of promoting goods and services in the conditions of impressions economy. Our methodology was based on a comprehensive analysis of the scientific literature on digital marketing, as well as information from open sources.

To achieve the research objective, we used the methods of grouping, classification, and comparison to systematize the data and establish links between them. The method of comparison was used to analyze the experience, where data from different sources were contrasted with each other to draw conclusions about the effectiveness of digital marketing.

Also, the forecasting method was used to assess the prospects of digital marketing, which allowed us to make assumptions about the possibilities and directions of further development of this industry. Thus, the application of a set of theoretical research methods made it possible to carry out a detailed analysis of the state of digital marketing and identify the prospects for its development.

### Results and Discussion

The promotion of goods and services has become an integral part of the marketing strategy. One of the main factors contributing to the evolution of promotion is the development of information and telecommunication technologies and the creation

of a single global Internet network. The modern economy is in transition from the industrial model to the information model, in which impressions play a big role, so impressions of economy, how new directions. An information society is defined as a society in which information is a key element of economic and social life, and most people are engaged in the processing, collection, and dissemination of information, especially knowledge, which is its highest form. Information has become a commodity and is as important to society as other material resources, and it has become one of the main factors of production (Dubovyk, Buchatska, Zerkal & Lebedchenko, 2022).

The information technology sector is becoming dominant in the modern economy, knowledge is becoming an important capital and they should take into account the impressions of consumers and partners about products and services of enterprises. New products and services that require significant research and knowledge to develop are introduced to the market. To ensure a competitive advantage, it is necessary to constantly improve and update products, taking into account the reduction of their life cycle, as well as to be aware of market trends and respond quickly to incoming information. The development and introduction of new products, organization of production, and sales must be carried out at the highest speed to meet customer needs and ensure the expected results. In this process, modern information technologies play an important role, facilitating technological preparation of production, design, and development of higher quality and more competitive products.

The use of modern information technologies reduces the time and costs of product development, facilitating the rapid exchange of information and interaction between producers and consumers. Technological tools help to maintain close communication with the market, conduct research and analyze consumer demands and needs. In addition, these technologies contribute to the implementation of effective marketing strategies, in the field of digital marketing, which provides opportunities for precise targeting and personalization of communication with a mass audience (Vrontis, Makrides, Christofi & Thrassou, 2021).

Thanks to information technology, businesses can improve their products and services based on data and customer feedback. Analytical tools allow collecting and analyzing large amounts of data, which allows making informed decisions

about product improvement, pricing, advertising, and promotion strategies. In addition, digital communication channels, such as social media, blogs, and electronic resources, enable businesses to effectively interact with their target audience, build relationships, receive feedback, and provide the necessary information about their products and services (Nazir, Khadim, Asadullah & Syed, 2023).

Digital marketing opens up many opportunities to expand the geography of markets and attract new customers. With the help of e-commerce, websites, mobile applications, and other online platforms, businesses can easily penetrate new markets and offer their products and services to a global audience. This allows them to increase sales and expand business opportunities. The transition to the global information economy is made possible by the following achievements, which are shown in Fig. 1.



**Figure 1.** Conceptual model of modern achievements of the digital environment  
Developed by the authors of the article based on content analysis

In addition to the advantages mentioned above, the Internet provides marketers with unique opportunities to target specific audiences, taking into account not only language and location but also their specialization. For example, the Set tool allows you to collect complete statistical information in a video format that is easy to analyze, evaluate the effectiveness of your marketing program, and quickly make the

necessary adjustments. Such opportunities are especially relevant in the context of active use of popular social networks such as Facebook and LinkedIn, which allow you to reach a wider and more targeted audience. Table 1 shows the advantages and disadvantages of using SMM (Sanakuiev, Mykhalchenko, Semenda & Vdovichena, 2023).

**Table 1.**  
*Advantages and disadvantages of SMM promotion of goods and services*

| Advantages of SMM promotion  | Disadvantages of SMM promotion  |
|--|---|
| 1. Affordability: low costs compared to traditional forms of advertising.  | 1. Dependence on social media platforms and their algorithms.   |
| 2. Targeting: the ability to accurately identify and reach the target audience.                                  | 2. The possibility of receiving negative feedback or criticism in the public space.                             |
| 3. Interactivity: the ability to communicate with customers and receive feedback.                                | 3. The need to constantly monitor and respond to comments and messages.   |
| 4. Wide content options: use of various content formats.   | 4. Risk of insufficient control over the dissemination and perception of information.                           |
| 5. Effective measurement of results: availability of analytical tools to measure the effectiveness of campaigns. | 5. The need to constantly update strategies and techniques to maintain competitiveness.                         |
| 6. Global reach: the ability to reach audiences in different geographical areas.                                 | 6. The possibility of a negative impact on brand reputation in case of incorrect interaction with the audience. |

Developed by the authors of the article based on content analysis

Over the past decade, the Internet has become the most dynamic information medium of all time. Today, the number of users exceeds 2 billion, which indicates not only the prospects but also the existence of a completely new high-quality information and communication reality. Modern Internet technologies offer many methods for promoting organizations, products, and services online.

The main purpose of using Internet marketing methods is to attract visitors to an organization's web resource (website, social network, forum, etc.) and to stimulate their active participation on these platforms. These activities can include registration, regular visits to the resource, purchasing products or services, subscribing to news or newsletters, and active communication with company representatives and other users (Park, Hyun & Thavisay, 2021).

The use of the Internet as a marketing tool opens up great opportunities for organizations to unleash their potential and achieve success in the digital market. It should be borne in mind that the effectiveness of online marketing depends on

competence in its application and continuous improvement of strategies for interacting with the target audience in the conditions of impressions economy.

Speaking about the differences between Internet marketing and traditional marketing, some experts believe that Internet marketing is just the application of familiar marketing tools on the global network platform, while another group of experts argues that Internet marketing has its own uniqueness and peculiarities and should be considered as a separate category. Some marketing agencies consider it expedient to use exclusively Internet marketing tools, bypassing traditional methods. However, in practice, it turns out that successful company development is achieved through an effective combination of both Internet marketing and traditional marketing tools. For a more complete understanding of the similarities and differences between traditional and online marketing tools, the table below provides a comparative analysis of these two types of marketing. Table 2 shows a comparison of traditional and digital marketing (Dubovyk, Buchatska, Zerkal & Lebedchenko, 2022).

**Table 2.**  
*Comparison of digital and traditional marketing.*

| Feature                       | Traditional marketing   | Digital marketing   |
|-------------------------------|---|---|
| Main communication channel    | Television, radio, press, direct mail, exhibitions, meetings                    | Websites, social media, email, banner ads, contextual ads, video ads                      |
| Scale of audience coverage    | Local, regional, national, or global  | Global, the ability to reach an audience from anywhere in the world                       |
| Interaction with the audience | One-sided, few opportunities for interactivity                                  | Two-way, interaction, comments, feedback, discussion                                      |
| Directions of communication   | Brand-consumer, brand-brand, brand-retailer                                     | Brand-consumer, consumer-consumer, brand-brand to enhance impressions                     |
| Discussion of the results     | Difficult to measure effectiveness, more quantitative analysis                  | Easy to measure performance, detailed data analysis, ability to track conversions         |
| Response time                 | Some delay in response, more time to deploy campaigns                           | Quick response, instant connection with the audience                                      |
| Cost of advertising           | High cost of TV advertising slots and print advertising                         | Various opportunities for advertising with different budgets, flexible cost customization |
| Global reach                  | Limited geographic coverage, requires the deployment of physical infrastructure | Instant global audience reach   |

Developed by the authors of the article based on content analysis.

Comparing traditional and digital marketing, we can draw several conclusions about their characteristics and impact on business. One of the main differences between these two types of marketing is the main communication channel. Traditional marketing uses television, radio, press, and direct mail, while digital marketing is based on websites, social media, email, and

advertising formats that are present in the online environment. This indicates a change in the way we communicate with the audience, from more one-way to more two-way communication.

It is also worth noting the difference in the scale of audience coverage. Traditional marketing usually has a limited geographic audience, while

digital marketing allows you to reach a global audience from anywhere in the world. This enables businesses to expand their markets and attract customers from different countries.

Thus, it can be argued that social media performs an integrating function within the overall complex of marketing communications on the Internet. The use of SMM communications offers considerable advantages due to their low cost, the possibility of constant updating, a limited number of employees involved in their processing, methods for quickly determining effectiveness and receiving an instant response. It should be noted, however, that it is impossible to imagine online communication, starting with social media, without taking into account a company's website, as this is the place where potential customers come after viewing advertising messages. Consideration of any form of online communication is impossible without analyzing the effectiveness of the website as part of a marketing program that uses SMM tools (Wang, 2021).

Social media marketing (SMM) covers the process of driving traffic and attention to a brand or product through social platforms. A few years ago, the term Social Media Optimization (SMO) became known along with SEO (search engine optimization). Website promotion in social media is a set of activities aimed at attracting visitors from social media, such as blogs, social networks, and others, to a website.

Over time, SMO has been divided into two branches: optimization of the website itself (SMO) and promotion of the website in social media, such as blogs, forums, and online communities - this is social media marketing (SMM). Social Media Optimization (SMO) is the optimization of website content in order to make it as easy as possible to use in online communities such as forums and blogs.

In today's information technology environment, the Internet is becoming increasingly popular, and the number of its users is constantly growing. Experts define the SoLoMo concept, which includes social integration, localization, and mobility, as the main trends in the development of modern business. Mobility in the retail sector is associated with the development of mobile commerce, which has become possible due to the proliferation of smartphones and the introduction of mobile acquiring, which allows smartphones to be used as payment terminals for electronic payments. Changing consumer culture also plays an important role in this. Localization is directly

related to the development of mobile applications that allow to determine the geolocation of a customer using GPS or Foursquare technologies. Social integration in online commerce has become possible thanks to online social networks. Global retail leaders have a significant number of followers on social media. Social integration is a key element of social media marketing and is based on Phygital technology, which combines digital technologies with personal communication with consumers. It enables interaction between brands and consumers across the physical and digital worlds to understand and meet consumer needs and preferences, including social and personal relationships (Fernandez & Shaw, 2020).

The development of information technology and the growing popularity of the Internet are affecting the business environment, changing the way companies and customers interact. The use of the SoLoMo model, which includes social integration, localization, and mobility, is becoming a necessity to maintain business competitiveness (Riabov & Riabova, 2021).

Phygital technology, combining digital and physical elements, creates a unique experience of interaction with brands. It allows combining the benefits of digital tools, such as online sales and personalization, with the personal communication and emotional connection that comes from physical interaction. This opens up new opportunities for brands to identify and meet consumer needs, taking into account their social and personal aspects.

Mobility is driven by the expansion of mobile commerce, where smartphones act as payment terminals and provide a convenient way to make online purchases. Localization, through mobile applications and GPS technologies, allows brands to customize their presence and provide personalized solutions for local consumers.

## Conclusions

The article explores the role of social media in marketing and its impact on the promotion of goods and services in the online environment of impressions economy. The authors of the article examine various strategies, tactics, and key factors that influence the effectiveness of social media marketing campaigns.

One of the main topics covered is the role of social media as a distribution channel for promoting products and services. They find out how social media affects price perception,

consumer behavior, and competitive advantage. The results of their research show that social media can be an effective tool for promoting goods and services by providing a wide audience and the opportunity to interact with it.

The second aspect is the impact of social media marketing on brand equity and customer loyalty. They highlight the role of trust in the effectiveness of social media marketing strategies and their impact on creating positive brand equity and consumer loyalty. Research shows that social media can help increase brand trust and strengthen the connection between the brand and the consumer.

In addition, the article emphasizes the importance of combining traditional and digital marketing tools for the successful development of a company. Today, successful business development requires an integrated approach, where social media is only one of the tools of the marketing strategy in the conditions of impressions economy. Traditional marketing provides an opportunity to reach audiences through television, radio, press, and direct mail, which can be effective in attracting local audiences or emphasizing a national brand. Digital marketing, on the other hand, allows for global reach and interaction with audiences through websites, social media, email, and other online tools.

It is important to note that both approaches have their advantages and disadvantages. Traditional marketing can be expensive and has limited performance measurement capabilities, while digital marketing allows you to accurately measure results and customize your advertising campaigns based on your budget. Both approaches have their role in the modern business environment and can complement each other. The general conclusion is that social media marketing is an essential tool for promoting services and goods on the Internet. They allow reaching a wide audience, attracting the attention of consumers, and establishing communication with them. The following research should be aimed at comparing the effectiveness of traditional and digital marketing tools.

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## Identity and physical elements in the formation of architecture of traditional bazaars (Case study: Tabriz-covered Bazaar & Istanbul Kapalı Charshi)

### Geleneksel çarşı mimarisinin oluşumunda kimlik ve fiziksel unsurlar (Örnek: Tebriz Kapalıçarşısı ve İstanbul Kapalı Çarşısı)

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#### Abstract

Bazaars have a special meaning in the countries of the Middle East region, especially Iran and Turkey, which have a deep-rooted history in bazaar construction. No bazaar has been built without a purpose or without considering its performance. Bazaars form the backbone of cities. In addition, the bazaars mentioned in the study, the architecture of the region, reflects the dynamic and progressive internal features called identity. Due to the architectural features of the historical bazaars and their strategic geographical location, they left effective traces on the east-west trade route on the Silk Road. Bazaars with traditional architecture play an important role in the daily life of cities, in the past and today, with their different architectural features. In the research, library, and field research were conducted with a descriptive-analytical approach to understand the features, characteristics, and physical and social relationships in the spatial formation of the selected area in the commercial areas of Tabriz and Istanbul. Analysis was made by considering graphs, tables, or detailed information about architectural spaces.

**Keywords:** Ancient architecture, Traditional Bazaar, Physical elements, identity, Tabriz Rasteh Bazaar, Istanbul Covered Bazaar.

#### Introduction

The aim of the scientific comparison between the historical Grand Bazaar and Raste Bazar in Iran

#### Özet

Çarşı yapımı konusunda köklü bir geçmişe sahip olan başta İran ve Türkiye olmak üzere Ortadoğu bölgesi ülkelerinde çarşıların özel bir anlamı vardır. Hiçbir çarşı amaçsız ve performansı dikkate alınmadan yapılmamıştır. Çarşılar şehirlerin omurgasını oluşturuyor. Ayrıca, çalışmada bahse konu olan çarşılar, bölgenin mimarisi, kimlik adı verilen dinamik ve ilerici iç özellikleri yansıtmaktadır. Tarihi çarşıların mimari özellikleri ve stratejik coğrafi konumu nedeniyle İpek Yolu üzerinde doğu-batı ticaret yolunda da etkin izler bırakmıştır. Geleneksel mimariye sahip olan çarşılar farklı mimari özellikleri ile geçmişte ve günümüzde, kentlerin günlük yaşamında önemli bir rol oynamaktadırlar. Araştırmada, Tebriz ve İstanbul ticari kesiminde seçilen alanın özellikleri, karakteristiği ve mekansal oluşumundaki fiziksel ve sosyal ilişkisinin anlaşılması için tanımlayıcı-analitik bir yaklaşımla kütüphane ve saha araştırması ile birlikte mimari mekanlarla ilgili grafikler, tablolar veya detaylı bilgiler ele alınarak analiz yapılmıştır.

**Anahtar Kelimeler:** Antik mimari, Geleneksel Çarşı, Fiziksel unsurlar, kimlik, Tebriz Rasteh Çarşısı, İstanbul.

and Turkey is to determine the similarities and differences between these two historical and

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culturally important bazaars, to explain the characteristics and history of both bazaars and to offer the reader a deeper understanding. In this research, information is given about the historical origin, establishment, and development of the bazaars, while detailed information is given about their features, structure, and design in terms of architecture and design. In addition, information such as the trade history of both bazaars, which sectors they exist in, their cultural and social impacts, and how they contribute to visitors and the local society are also examined.

The traditional bazaars of Iran and Turkey with their ancient history, in addition to being commercial buildings, also have an active social, cultural, and religious role. In this way, the old bazaars have simultaneously been an important communication, economic, and cultural axis of the city and had an important role and dignity in social life. From ancient times until today, the bazaar is the central core of the city. Even today, bazaars are the center of goods exchange, production of goods, and accumulation of social activities, and in terms of location, they are considered the heart of big cities. In general, bazaars with various economic, social, and religious functions are a perfect manifestation of civil foundations that have been formed over the centuries.

A bazaar in Iran or Turkey, in its real sense, is a collection of shops that are connected by a covered space, and in its virtual sense, it includes a wide range of meanings. From credibility to power, from merit to prosperity, from adornment to confrontation and self-presentation of the space in which goods are offered for sale or production. At the same time, the bazaars are the places where cultures are produced, the originator of traditions, the space to produce new words in literature, identifications, constructivism, and the production of social education methods.

The secret of the covered bazaars is not a single thing, but rather a combination of history, culture, and commerce. Covered bazaars are large bazaars that are roofed over and have many shops and stalls selling different kinds of goods. They are found in many cities in Turkey and other parts of the Middle East and Central Asia. Covered bazaars in Iran and Turkey have different sections for different kinds of goods, such as carpets, spices, jewelry, handicrafts, books, and more.

Dedicating each of the artisans or artificers to trade in indoor bazaars also has its own philosophy and necessary business discipline. That's why it is impossible to see all kinds of products together in the same row in the covered bazaars. Coppersmith's Bazaar, Gold Seller's Bazaar, Silk Seller's Bazaar, Shoemaker's Bazaar, Spices' Bazaar, Carpet Seller's Bazaar, Cloth Seller's Bazaar, etc. are all located in the same row and another section. The type of replacement of these types in a large and long indoor bazaar has its reasons. For example, you cannot see the guild of goldsmiths on the south side of a bazaar that has little light. Most of the shops carpet sellers, silk sellers, and paper sellers are located on the west side of the big bazaars so the sunlight makes their products and goods fade due to sunlight.

At the same time, the guild of cobblers or spice sellers is in timches, which are considered the entrance gates to large bazaars. "Misir Charshisi" (Egyptian bazaar) in Kapali Charshi Istanbul and Safi Bazaar in Tabriz Covered Bazaar are examples and proof of this claim.

One of the most famous covered bazaars is the Grand Bazaar in Istanbul, which is one of the oldest and largest covered bazaars in the world. It was built in the 15th century by Sultan Mehmed II and expanded over time with new sections and buildings. It has over 3000 shops and 61 streets, as well as mosques, fountains, and caravanserais. The Grand Bazaar attracts millions of visitors every year who come to buy souvenirs, antiques, spices, carpets, jewelry, and more.

The secret of the covered bazaars is that they are not just places to shop, but also places to experience the rich history and culture. They are places where you can see the architecture, art, crafts, and traditions of different periods and regions. They are also places where you can interact with the local people and learn about their stories and lifestyles.

### Functionality of Grand Bazaars

There are different reasons why the old bazaars were covered, depending on the region and the period. Some possible reasons are:

- To protect the traders and shoppers from the sun, heat, rain, or snow. This was especially important in the Middle East, where the climate is often hot and dry.
- To create a more comfortable and pleasant atmosphere for shopping, with natural light,

ventilation, and decoration. Some covered bazaars have domes, arches, frescoes, and other architectural features that enhance their beauty and charm.

- To increase the security and order of the bazaar, by having gates, walls, and guards that control the access and prevent theft or vandalism. Some covered bazaars also have religious or legal institutions within them, such as mosques, courts, or schools.
- To reflect the economic and political power of the rulers or merchants who built or sponsored the bazaar. Some covered bazaars were part of larger complexes that included palaces, caravanserais, or mosques. They were also symbols of the city's prosperity and influence on trade routes.

Covered bazaars were not only functional but also cultural and social spaces that expressed the identity and values of their communities. They were places where people could exchange goods, information, ideas, and beliefs.

### **Structural similarity of Tabriz and Istanbul Grand Bazaars**

Tabriz Raste Bazaar and Istanbul Grand Bazaar are two of the most famous and historic covered bazaars in the world. They share some similarities in their architecture, such as:

- They are both made of brick structures with domes, arches, vaults, and skylights that create a spacious and well-lit interior.
- They both have a complex layout of interconnected streets, alleys, squares, and courtyards that divide the bazaar into different sections for different kinds of goods and services.
- They both have caravanserais, which are large buildings that provide accommodation and storage for travelers and merchants. Some of these caravanserais also have mosques, schools, or baths inside them.
- They both have Charsugs or Charshi, which are large domed halls that mark the intersection of major routes or the entrance to important sections of the bazaar. These halls are often decorated with frescoes, tiles, or calligraphy and serve as focal points for social and religious gatherings.

However, there are also some differences between the two bazaars, such as:

- Tabriz Bazaar is older than Istanbul Grand Bazaar. It was built in the 15th century and expanded over time, while Istanbul Grand

Bazaar was built in the 16th century and completed in the 17th century.

- Tabriz Bazaar is larger than Istanbul Grand Bazaar. It covers an area of about 30 hectares and has over 3000 shops and 61 streets, while Istanbul Grand Bazaar covers an area of about 20 hectares and has over 4000 shops and 58 streets. (Pourjafar, Samani, & Pourjafar, 2012, pp. 42-47)
- Tabriz Bazaar has more diversity in its architectural styles and influences. It reflects the history and culture of different periods and regions of Iran, such as the Safavid, Qajar, Zand, Afsharid, and Qajar eras. It also shows the influence of Turkish, Mongol, Russian, and European cultures. Istanbul Grand Bazaar has a more uniform and consistent architectural style that reflects Ottoman culture and art.

### **Methodology and the Scope of the Research**

To examine the topic research and organize the correct answers, one can first look at the most important historical bazaars in Iran and Turkey, and then examine the effects of urban elements and socio-cultural variables on the development of bazaars. Then, the general process of the structural development of the historical bazaar of Tabriz and Istanbul and its spread to different periods will be clarified by examining historical documents and research. As a result, by analyzing the collected data, it will be possible to understand the nature of the impact of the centers and spatial elements on the structural development of Tabriz Rasta Bazaar and Istanbul Grand Bazaar.

The type of the study is basic-theoretical and has a historical-interpretive approach; The necessary data and information were collected through library studies, historical documents, and field studies. Existing data is analyzed based on qualitative analysis and secondary data is produced showing the impact of urban elements on the formation and development process of the historical bazaar structure throughout Iran and Turkey.

The method of this research is a kind of comparative analysis of architectural culture among the countries of Iran and Turkey, both of which are located along the Silk Road. This research is done through library studies, including searching books, articles with background knowledge of the subject and research questions. Also, attention is paid to the details, views, and performance of the bazaars of Tabriz and Istanbul through different plans,

sections, and views. These cities are in the middle part of the Silk Road is located, which connects the East to the West. And still, the covered bazaars of Tabriz and Istanbul named "Rasteh Bazaar" and "Kapali Charshi" have many uses.

In this research, the scientific method is used, and first by specifying the purpose of the research, the required resources, referring to the authoritative texts, and performing related analyses following the findings of the study and research, the physical elements and components of indoor bazaars are mentioned. The goal is to know the reasons for their durability in terms of architecture and functionality and the need to give importance to oriental architecture.

As data analysis, graphs, tables, or statistics highlighting the similarities and differences between the two markets were used. Previously conducted similar comparative studies and expert opinions are also taken into consideration in the literature review of the research, and theoretical explanations based on data supporting scientific findings also enrich the framework of the study.

**Finding and innovation:** The innovative part of the research is important in the article. The existence of social-cultural factors between the bazaars and the cities constitute the factors that create bilateral interactional effects in the creation of the bazaars. Therefore, it is necessary to examine them and to know the influence of existing elements and urban spaces on the formation of historical bazaars. Bazaars also form the identity of the city and its inhabitants. This identity emerges from both national and religious factors. The existence of grand bazaars in Iran and Turkey is also known, as is the spatial organization of the cities. Bazaars are not only commercial-economic spaces but also become the focus of social activities and political protests.

**Research objective:** The aim of this research is to comprehensively examine the structure of the historical bazaars of the two countries in order to shed light on the history of architecture and design in the history of Iran and Turkey, and also to try to determine the internal and external factors that are effective in the formation and development of the bazaars. The findings of this research can help in making the conservation plans of Tabriz Rasta Bazaar and Istanbul Grand Bazaar comprehensive and scientific.

## Result and Discussion

In this section, after examining the previous research on Istanbul Grand Bazaar and Tabriz Rasta Bazaar, detailed information is discussed to address the missing issues. The interior architectural elements of the Tabriz Grand Bazaar (Raste Bazaar), the most important historical bazaar of Iran, and also the Istanbul Grand Bazaar, and the similarities and differences in the structures and designs of the bazaars are the subject of discussion. While the obvious similarities between the two bazaars show how close the two nations are in cultural and social terms, the differences in the urban factors and urbanism ideas of the two countries reveal new findings and results. By examining these factors and elements, a new understanding of this process is tried to be reached.

### The issue of identity in the architectural structure of indoor Bazaars

Identity expresses the characteristics of each person or phenomenon and the result of mental feelings from the daily existence of a person and extensive social connections that need a place for formation. This causes the creation of similarities between individuals, one nation with another, or one nation with another nation. At the same time, the same issue makes the distinction between individuals, groups, and societies clear. In clearer words, the identity of a nation can be found in historical and cultural buildings, and the bazaar is one of the places that express and explain the identity of a nation. The historical and traditional cities of Iran have the spirit of the ancestors of this land, which are the indicators of identity.

It should be mentioned that the cities of present-day Turkey are remnants of the 14th century AD and after the rule of Turkish-Islamic tribes and governments, the most prominent of which is the Ottoman Empire era. As history says, the Turks who came from Central Asia migrated to Anatolia through the North-East of present-day Iran and the Khorasan region and transferred everything they had learned from Iran's Islamic and national culture to Anatolia. Along with literature, business sciences, mathematics, astronomy, philosophy, and mysticism, the sciences related to innovative industries and engineering, including architecture, have also been transferred to Anatolia. The obvious similarities between the general structure of the bazaars in Iran and Turkey are the result of this historical influence.

Therefore, it is necessary to understand the identity of the environment, to get to know the places, their continuous presence in the people's culture, their dynamism, lack of change, or negative developments in the type of architecture. Because physical conditions, materially and spiritually, can create a special identity for humans. It is from this identity that one can understand the type of beliefs, cultural values, and the type of human interaction in society. For this reason, bazaars are considered a prominent place in the introduction of people's values and beliefs, from which the physical identity of the society can be understood.

Today, cities are considered one of the greatest achievements of culture and civilization and one of the most pervasive social phenomena of the present age.

The traditional bazaars in Iran and Turkey are considered to be relics of the Islamic period in the two lands. The bazaars of these two countries often have commercial structures that are placed in a compact space in the middle of the city as a homogeneous and interconnected complex, and they still evoke the main feature of the Islamic city despite their external transformations. (Wirth, 1991, pp. 50-92) The bazaar is considered the central part of Islamic cities in the Middle East region and is the center of economic gravity and the center of the capital productivity system. This place, with buying and selling, production and distribution, and extensive industry, is known as the center of economic and financial leadership of the city and has had a pivotal position in politics and religion. At the same time, bazaars in all cities of Iran and Turkey, and especially the historical Silk Road, are considered a place to exchange cultures, influenced by the language and literature of nations, and the center of ethnic and national communication. The institutional bazaar is considered the equivalent of the central neighborhood of today's big evil transactions.

Covered bazaars in Turkey and Iran are not only the center of economic guidance, but also the social and spiritual infrastructure, and the Islamic-Turkish and Iranian spirit can be seen in the architecture of the bazaars. Covered bazaars are spaces where the roots of Iranian-Islamic or Turkish-Islamic culture can be found in historical periods. The architectural structure of the bazaar, khans, and Timches in its way expresses the degree of technical and scientific progress of the business in the division of classes. The type of lighting of the bazaars, busy routes or alleys overlooking the rows in the covered bazaars, and

also the side places in the bazaar show that the architects of that time were able to produce places based on cultural, social, and religious views and the type of architecture-urban planning. that their importance has continued until today. (Jayyusi, 2008, p. 94) Throughout history, bazaars have also been the center of directing and managing political-social movements. Even today, covered bazaars in Iran have real use in national-religious ceremonies and are considered a place for people to gather to hold ceremonies.

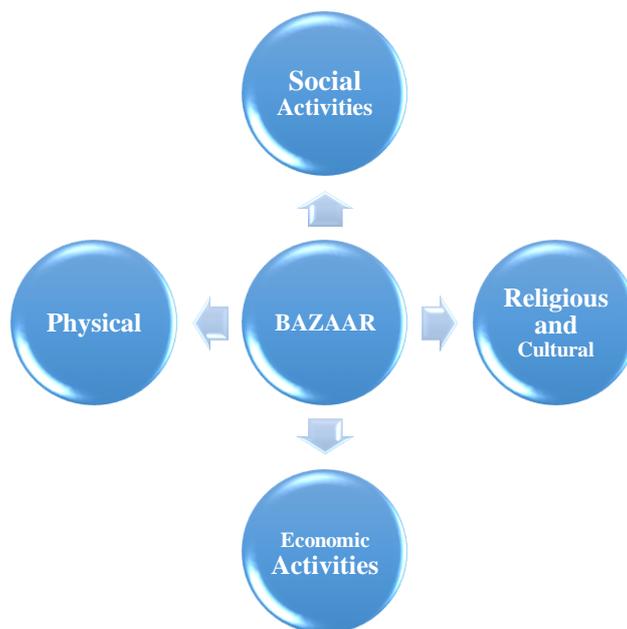
The bazaar in Iran and consequently in Turkey is a space that is intended for buying and selling and supplying various goods in a continuous communication path. Some researchers have defined the bazaar as follows: The bazaar is a place where a special social and cultural dependence is seen, and its main factors are the seller and the buyer. (Shkouie, 1977, p. 114) Traditional bazaars in big cities of Iran and Turkey are considered the central core of the city. Today, in addition to commercial and economic use, Iran and Turkey are considered as gathering places for social activities.

The word Bazaars in Middle Persian is defined as "Wazar" with combinations such as "Vazarg" (Bazaar), "Vazargan" (merchant), "Vazarganiyeh (merchant), "Vazarbad" (head of the bazaar). Also, the word "Rasteg Vazar" (Rasteh Bazar) can be seen in old literary texts. The word "Party Vazar" or "Pazand Vazar" in Armenian is also derived from Persian, which means commercial bazaar. (Dekhoda, 1974)

The most important areas that can be effective during the formation of bazaar architecture are specified in the following diagram.

- **Social Activities:** In general, the concept of the bazaar and the purpose of its formation in Iranian and Turkish society is known based on its various functions. Bazaars between two nations with different economic, social, and religious functions are considered a perfect manifestation of civil foundations that have been formed over the centuries. The most important areas that can be effective during the formation of bazaar architecture are specified in the following diagram.
- **Religious and cultural:** Religious ceremonies, mourning related to the months of Muharram and Ramadan, placement of mosques inside bazaars, trade union meetings, and social protests.

- Physical: Mosques, libraries, bazaars, Timches, rasteh, cells, shops, taverns and water-houses, coffee or tea houses, association offices
- Economic: Wholesale and retail business activities, specialized trades such as copper smithing, carpet sales, goldsmithing, dyeing, silversmithing, etc.



*Fig. 1.* The role of the bazaar in various physical activities.

### Physical elements of bazaars as cultural heritage

Various physical elements in the traditional bazaars of Iran and Turkey have an independent and yet interdependent identity. In addition to being considered the city's business center, bazaars also house and strengthen social, cultural, and political activities. This communication feature gives a special physical shape to the traditional bazaars, which, despite the changes and introduction of the modernized system in architecture, still does not reduce the importance and value of the traditional bazaars.

The elements that make up their identity and guarantee them as cultural heritage are: a) the type of architecture and the division of bazaars. b) the complementary role of bazaars in providing the social, subsistence, and welfare needs of society.

The bazaars of Iran and Turkey are designed and built in terms of location in the center of the city in such a way that they are placed in the form of a broken line on the east-west route of the central cities. That is, bazaars are not built parallel to the entrances on both sides of the city. Because the security of the bazaars and their protection is very important. Bazaars are not only the place of inventory and storage of the necessities and

needs of the people of the city, but at the same time they are safe places for secret communication and hiding in the event of political-social crises and people's protests the governments or attacks by attackers on the city. The location of the Tabriz bazaar line is from the north (Shotorban region) to the south of the city (Meydan-e Namaz), and it is exactly a continuous and interrupted line that cuts off the main entrance to the city from the east to the west in the form of a covered bazaar. That is, the main gates of the bazaar are from north to south.

The traditional bazaar of Kapali Charshi in Istanbul is also like this, and it is built from north to south. However, the main way to enter the city of Istanbul is from the east (Eminönü) and the west (Surlar).

The physical elements of bazaars have main passages which are called rows. These are very long, covered corridors that connect small commercial areas. Caravanserai, Timches, holes or khans, char souqs, shops, as well as open courtyards for people to rest are connected to the bazaar from the right and left sides.

Other elements that are considered in the bazaars to meet people's needs in the construction of bazaars and their architecture are among the important issues that are related to people's daily

life. Baths (traditional Hamams), mosques, designated sections for each class, and specific goods in the bazaars (such as shoemakers' holes, carpet sellers' holes, coppersmiths' holes, etc.) are among the elements that make up the skeleton of the bazaars.

### The importance of the Silk Road in the formation of cultural commonality and architectural structure

As the main trade highway between the East and the West, the Silk Road, which is mostly located inside the current borders of Iran and Anatolia, has been the path between the Iranian and Turkish communities since ancient times. From this path, in addition to various sciences and customs, the way of trading and ossification of the bazaars has also become like a significant extent. Therefore, if today there is not much difference between the culture and traditions of the people of Iran and Turkey, or there are many

commonalities and similarities in the architecture of the bazaars between the two countries, it is the result of this historical path. The nations who have a common language and culture and live on the same piece of land want to bring their values to new generations to keep their members together and maintain this unity. (Tekmen, 2019, pp. 471-478) In other words, the main guarantor of the creation of common bazaars in the two countries as a cultural heritage is the Silk Road.

The Silk Road was an ancient trade network, connecting the East to the West. The Silk Road trade system was created by interactions between China B.C.E and their western neighbors. The Silk Road was not one road but many; it was a network of roads, generally going from east and west, but with spurs into southern Iran, the northern Eurasian steppe, and south over the Hindu-Kush to the Indian subcontinent. (Pourjafar, Samani, Pourjafar, & Hoorshenas, 2012, pp. 42-47)

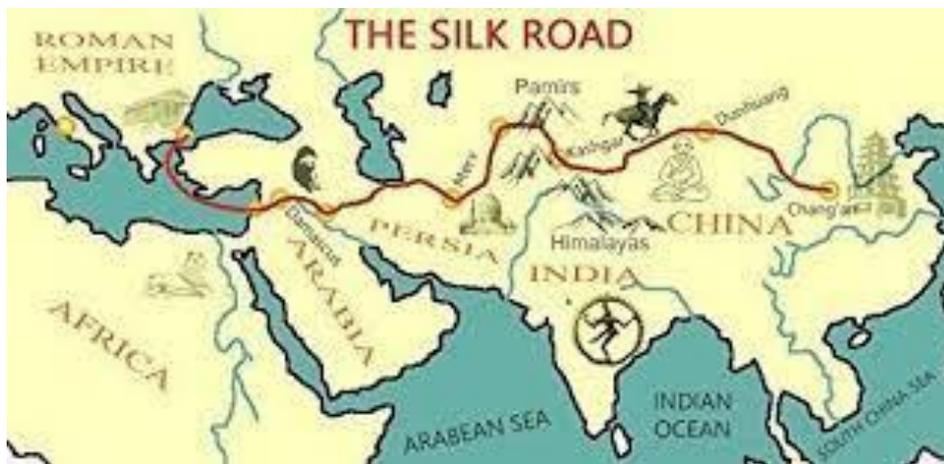


Fig. 2. The Ancient Silk Road.

### Tabriz Bazaar

The bazaar is always directly related to people's lives and is considered the center of social and economic attraction. The bazaar guarantees economic conditions. The role and position of the bazaar in Persian and Turkish cities and societies is completely defined and is considered a recognized identity in the world. So that the Tabriz-covered bazaar named "Rasteh Bazar" is among the places that have been recognized in the list of tangible works and cultural heritage of UNESCO. Tabriz Bazaar has long been considered a center for important economic and commercial exchanges and even dealing with cultural and political affairs. It has been a place for gatherings and exchanging ideas. Traditional bazaars, as they have maintained their effectiveness, have proven their importance and

value as a national-cultural indicator, and today, in addition to being a place of business, they are a place of travel for domestic.

Among famous travelers, who visited and described Tabriz bazaar in different centuries are Moqaddesi in the 4th century, Yaqoot Hamavi in the 7th century, Marco Polo in the 7th century, Ibn Battuta in the 8th century and Hamdollah Mostofi in the 8th century. In addition, Sharden gave detail about it. He considered it the largest bazaar in Asia with 15,000 shops. (Babazade Asbagh, 2018, pp. 37-47) A large part of the Bazaar area is in the south of the Mehran Rood River. (Khamachi, 2009) The existence of the river has caused the formation of bridge-bazaars (Bazaars created on bridges) along the "Rasteh", leading to the north of the Bazaar. Many entrances are one of its important and

outstanding elements. (Chenaghlou, Ebrahimi, Shahbazi, Kheirollahi, & Mohammadi, 2017, pp. 1-7) Although Persian Bazaars were established in the Achaemenid era. Religious

places like mosques for Muslims are usually built in Bazaars too. (Pourjafar, Nazhad Ebrahimi, & Ansari, 2013, pp. 272-282)



**Fig. 3.** Tabriz Historic Bazaar Plan & View-  
Source: (Özdemir, 2019, pp. 28-33)

What has happened throughout history is the changes and evolution that happened in the structure of the bazaar of Tabriz and its development and expansion according to the needs of the society. During the past eight centuries, the use of the Tabriz bazaar has not only not decreased, but it has been able to develop day by day according to the conditions, needs, and applications of the bazaar. Below can see the historical development of the Tabriz bazaar.

- **Literature Review Timeline: Tabriz City Development Timeline History**

**12th century:** Began to grow as a commercial and economic center.

**13th century:** The Tabriz city became the country's capital. (Reached the social and economic life peak because of its location on the Silk Road in 1316-1331.)

**14th & 15th centuries:** The Tabriz city became an effective administrative center due to the popular crossroads.

**16th century:** The Tabriz City became the capital of the empire by the Safavid's appointment.

**17th century:** It entered an economic depression. It was demolished by the most devastating earthquakes in 1780.

**18th Century:** Ottoman expansion efforts in the 18th century led to political instability. (1. The mosque and the city caused extensive damage due to the second earthquake in 1817. 2. "Abbas Mirza" ordered a map of Tabriz to be drawn up in 1880. 3. It was restored in 1896 by Naser Uddin Shah's Qajar, a decision with a full detailed map. 4. The map transformed into the Western-style culture through his journey to Western countries. 5. Tabriz city shifted from Sahib-abad which is placed on the North of Mehranroud River.

**19th Century:** It emerged as the center of Iran's constitutional revolution in 1906. (1. The bazaar has been closed and people started protesting the government causing the first parliament establishment by the king. 2. Modernization appeared at the end of the Qajar period in 1925 by the start of the Reza Shah dynasty. 3. On December 11, 1925, the shopping area started to build around residences by communities due to society's cultural changes. 4. Urban development in Tabriz was suspended by the II. WW from 1941 to 1946. 5. New roads and contemporary buildings resumed in 1950.)

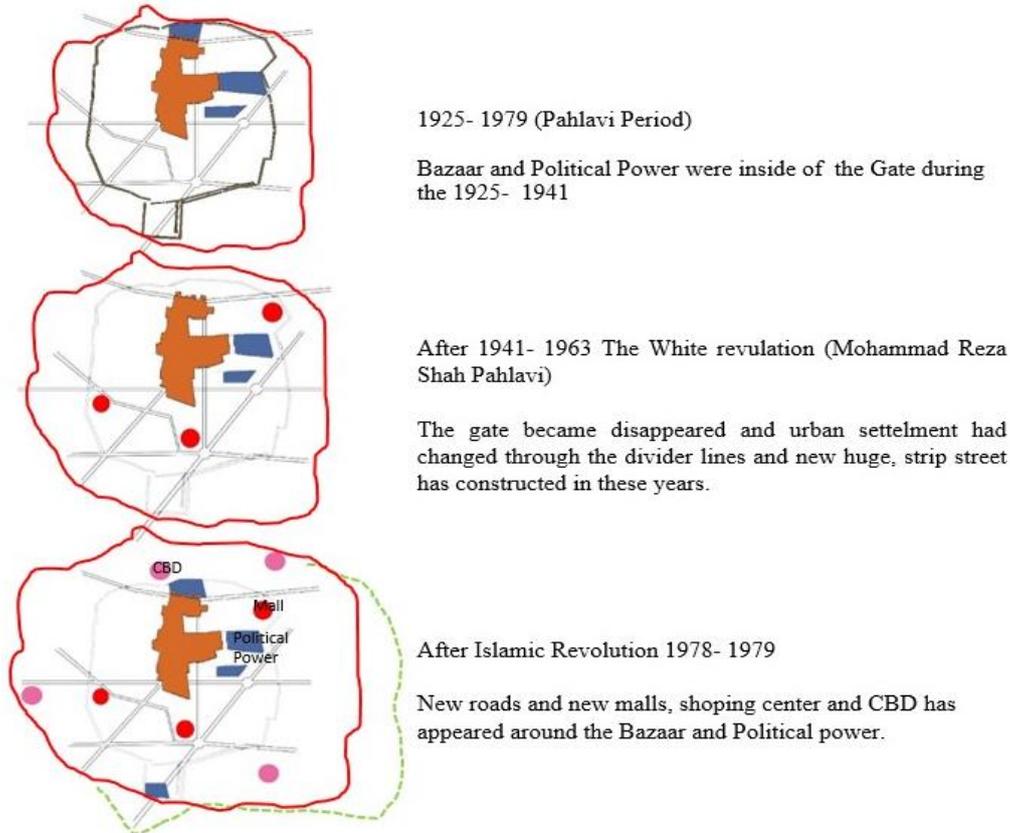
**20th Century:** It emerged as the center of Iran's constitutional revolution in 1906. (1. Islamic revolution's imposition of religion and tradition in an Islamic manner. 2. Urban and architectural perspectives have alerted through the new economic and political order they established.)

**21st century:** The development of Tabriz city and the provision of amenities, including the

creation of metro stations and passing through Tabriz bazaar, and paying attention to the restoration and reconstruction of the bazaar, as well as the development around Tabriz bazaar. In order not to disrupt the classical style order of Tabriz Bazaar, modern construction and the creation of shopping centers or malls around Tabriz Bazaar are prevented. Also, during this

period, the Tabriz Bazaar was registered as a national and world cultural heritage by UNESCO.

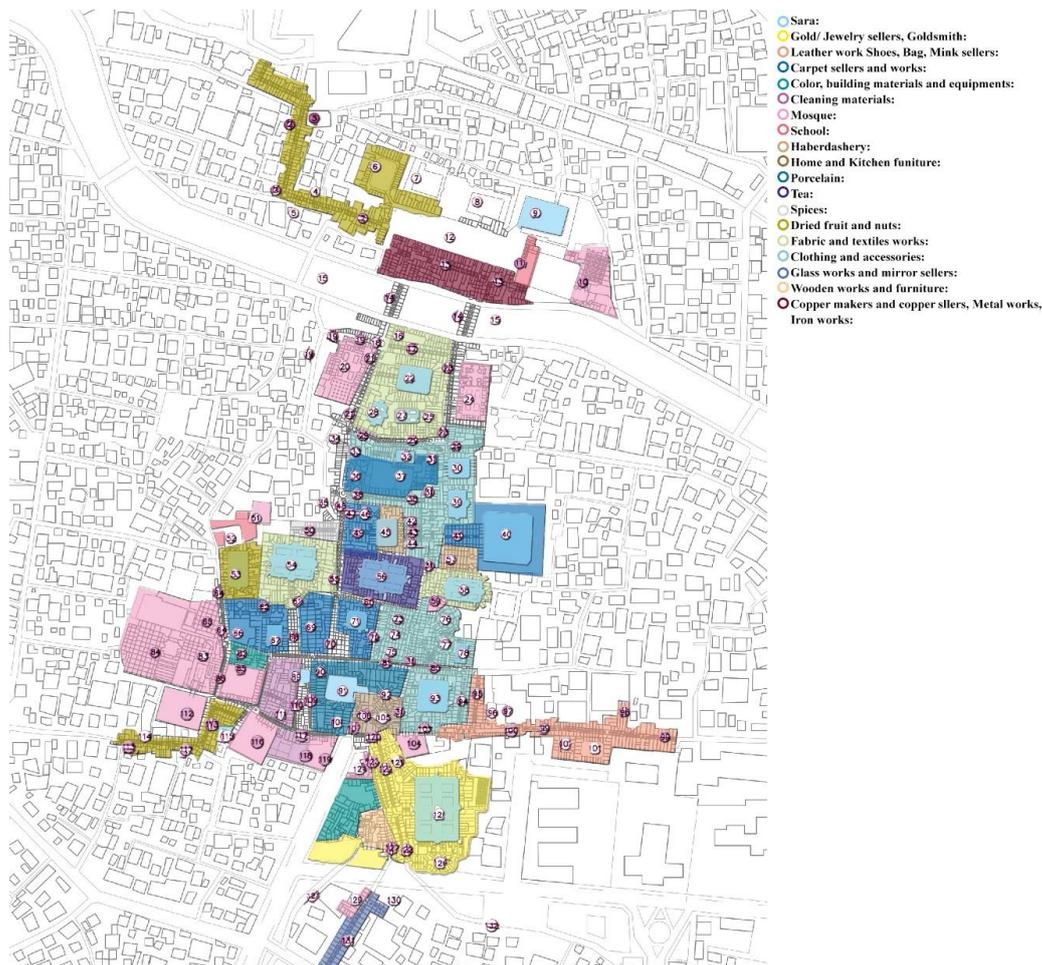
Figure 4 & 5 shows how urban development and the formation of the large and covered bazaar map of Tabriz in the past periods until now.



**Fig. 4.** Changes and developments in Tabriz Grand Bazaar and urban development. Source: Dergipark (Kavraz & Yildirim, 2020)



**Fig. 5.** The changes and restoration of the Tabriz Bazaar building can be seen in the picture above. The old and restored form are comparable.



**Fig. 6.** New map of Tabriz covered bazaar and location of holes, Timches, mosques, rasteh, etc.  
Source: Tabriz Central Library (Farhad, 1384)

### Kapali Charshi- Istanbul

Built by Fatih Sultan Mehmet, one of the Ottoman Emperors, in 1460, the Grand Bazaar has a shopping bazaar and a structure covered with domes and is also known as "Çarsu-yı Kebir" (grand bazaar). Two bedestens form the main backbone of the historical area.

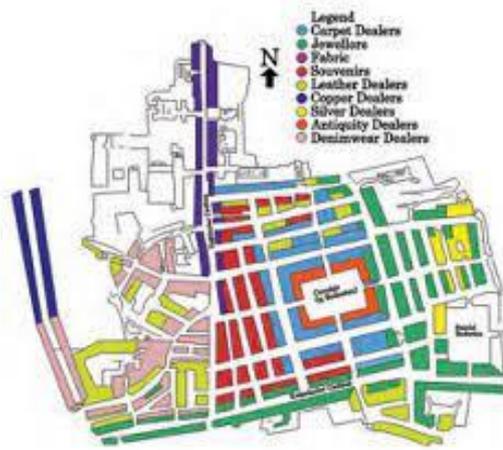
The Grand Bazaar attracts attention with the Cevahir Bedesten rather than a colorful building at the first entrance. Bedesten consists of 15 sections and each section is covered with a dome.

Although it may seem complicated at first glance, it has a settled order in itself. The area between Aynacılar and Agha Streets at the entrance attracts attention with its attractive views of financial shops. Timche, inn, caravanserai, and secluded shops, where various

tradesmen and craftsmen are located, are all connected to the main road - the arasta, which is considered the backbone of the bazaar.

There are mosques unique to each caravanserai and timches of the covered and big bazaar. Today, the surroundings of the Grand Bazaar have been changed and there are universities, small new bazaars, and shops rather than houses. However, the Grand Bazaar has not lost its existence in any way and thanks to the restoration, it is on the world heritage list today.

In the past, this age is not only a bazaar in terms of social, economic, and political aspects but also a place where the people are located, where the protests are shaped and organized. The Grand Bazaar has the same identity and features as the Tabriz Rasteh (covered) Bazaar.



**Fig. 7.** The plan of the Grand Bazaar and its current appearance.  
Source: [https://imturkey.com/tr/kapali-carsi\\_](https://imturkey.com/tr/kapali-carsi_) (Turkey.com, 2023)

### Conclusion

The bazaar is an institution that includes religious, commercial, political, and social elements. The bazaars of Iran and Turkey are considered more than the local bazaars as the central part of the economy of the big cities that were once considered the capital. The shape and symbol and structure of the bazaars and the passages connected to it and the placement of the bazaars in the cities of Tabriz and Istanbul show that such places are not only national and international trade centers; rather, they are considered urban spaces and prove the identity and national and cultural indicators of two Persian and Turkish societies, and with their common features, they indicate the existence of cultural, religious, and political commonalities close to each other.

The placement of the bazaars of Tabriz and Istanbul on the Silk Road route is in its way telling that these two bazaars with their common and identical aspects show that in the commercial route, only financial and economic issues have not undergone changes and mutual effects; rather, these two bazaars are important poles in the Middle East that have been able to serve as centers of culture transfer, language relations, political insight, lifestyle and other common styles in human life. These are urban spaces where political news and gossip are shared. Religious and national symbols are usually displayed, and different social classes are intermingled.

Comparison of the bazaars of Tabriz and Istanbul have many similarities in terms of architectural configuration, and social network. The parameters relative to each other and their performance in different traditional urban spaces

show that in addition to diversity and elements of spatial arrangement, they have influenced each other and shaped the identity of Persian and Turkish society.

The similarity of nouns such as: "Rasteh", "Arasta", "Charshi", "Charsouq" and "Caravanserai or Timche" are among the key factors in the formation of the same meaning and the same meaning of Persian and Turkish bazaars. Bazaars are not only places where craftsmen or artisans reside, but also places that reveal meaningful or social relationships.

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