EXPLORING THE ROLE OF COGNITIVE AND CREATIVE FACTORS IN CAREER SELECTION FOR PROSPECTIVE UNIVERSITY STUDENTS

EXPLORAR O PAPEL DOS FACTORES COGNITIVOS E CRIATIVOS NA SELECÇÃO DE CARREIRA DOS FUTUROS ESTUDANTES UNIVERSITÁRIOS

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Abstract. The article presents a practical analysis of career choice among future higher education students. In particular, it highlights the trends in cognitive-creative aspects during the career selection process. The attitudes of prospective students at higher education institutions towards contemporary professions from 2019 to 2023 were analyzed using a custom-designed questionnaire. It was found that factors influencing career choice across various fields of knowledge include cognitive-creative (internal), socio-economic, and socio-political (external) factors and military events in the country. The critical factor in determining the future of each young person has become the adaptation phenomenon to current conditions (pandemic, martial law, the status of internally and externally displaced persons). During the research on cognitive-creative aspects of career choice, a trend showed a strong preference for the legal field, as observed in responses to all questions in the custom-designed questionnaire. Respondents from 2019–2023 who chose the legal direction regard the profession of a lawyer as prestigious and aspire to earn substantial income as advocates. The military events in 2022 prompted respondents to choose the most profitable specialization due to the necessity for honest and highly competent specialists in law. Technological progress, high salaries, and demand for software specialists were critical factors in choosing an "Information Technology" profession. Interest in the chosen profession was further enhanced by flexible mobility and the possibility of remote and distance work with stable pay during global quarantine measures related to the spread of COVID-19, martial law, and internal and external displacement of Ukrainian citizens, among other factors. Analysis of the respondents' answers revealed that, following the fields of law and programming, the most popular professions were in "Social and Behavioral Sciences" and "Management and Administration". It was emphasized that young people demonstrate rapid adaptation to negative changes in life, which directly correlates with their career choices.

Keywords: career choice; secondary school graduates; higher education applicants; cognitive-creative aspect; cognitive and creative motive

Resumo. O artigo apresenta uma análise prática da escolha de carreira entre os futuros estudantes do ensino superior. Em particular, destaca as tendências nos aspectos cognitivo-criativos durante o processo de seleção de carreira. As atitudes dos futuros estudantes de instituições de ensino superior em relação às profissões contemporâneas de 2019 a 2023 foram analisadas através de um questionário concebido à medida. Verificou-se que os fatores que influenciam a escolha da carreira em vários domínios do conhecimento incluem fatores cognitivo-criativos (internos), socioeconómicos e sociopolíticos (externos) e acontecimentos militares no país. O fator crítico para determinar o futuro de cada jovem passou a ser o fenómeno de adaptação às condições atuais (pandemia, lei marcial, estatuto dos deslocados internos e externos). Durante a investigação sobre os aspectos cognitivo-criativos da escolha da carreira, verificou-se uma tendência para uma forte preferência pelo domínio jurídico, tal como observado nas respostas a todas as perguntas do questionário concebido à medida. Os inquiridos de 2019-2023 que escolheram a direção jurídica consideram a profissão de advogado prestigiada e aspiram a obter rendimentos substanciais como advogados. Os acontecimentos militares de 2022 levaram os inquiridos a escolher a especialização mais rentável devido à necessidade de especialistas em direito honestos e altamente competentes. O progresso tecnológico, os salários elevados e a procura de especialistas em software foram fatores determinantes para a escolha da profissão de "Tecnologia da Informação". O interesse pela profissão escolhida foi ainda reforçado pela mobilidade flexível e pela possibilidade de trabalho remoto e à distância com remuneração estável durante as medidas de quarentena global relacionadas com a propagação da COVID-19, a lei marcial e a deslocação interna e externa de cidadãos ucranianos, entre outros fatores. A análise das respostas dos inquiridos revelou que, a seguir aos domínios do direito e da programação, as profissões mais populares são as das "Ciências Sociais e do Comportamento" e da "Gestão e Administração". Foi sublinhado que os jovens demonstram uma rápida adaptação às mudanças negativas da vida, o que está diretamente relacionado com as suas escolhas profissionais.

Palavras-chave: escolha de carreira; diplomados do ensino secundário; candidatos ao ensino superior; aspeto cognitivo-criativo; motivo cognitivo e criativo

1. INTRODUCTION

The Law of Ukraine "On Higher Education" dated 01.07.2014 No. 1556-VII defines the purpose of higher education as the preparation of "...a competitive human capital for the high-tech and innovative development of the country, self-realization of the individual, and meeting the needs of society, the labor market, and the state for qualified specialists" (Higher Education, 2014). Numerous amendments to this law cause instability in its representation.

By the current Law of Ukraine, "On Higher Education", which aligns with the standards of the European area, the training of specialists is carried out through educational or scientific programs at the following levels of higher education:

- Initial level (short cycle) of higher education;
- First (bachelor's) level;
- Second (master's) level;
- Third (educational-scientific/educational-creative) level;
- Scientific level.

General secondary education is a prerequisite for higher education (Article 17 of the Law of Ukraine "On Education").

The post-pandemic period marks a gradual recovery in the education sector in Ukraine and Eastern European countries, whose representatives have reported on the situation with school closures and vaccinations. It plans to resume work with renewed vigor. Unfortunately, in Ukraine, the post-pandemic burden has been compounded by the devastating period of martial law, which has had a profoundly negative impact on the educational process as a whole.

The issues currently facing the higher education system in Ukraine, caused by the aftermath of the pandemic and the full-scale invasion by the Russian Federation, concern the following criteria: insufficient efficiency of higher education, the need to reconsider the financing of the higher education system, the search for effective management of educational resources, the relevance of increasing the level of social responsibility, equality, and autonomy of higher education institutions (Truba et al., 2024).

According to the Strategy for the Development of Higher Education in Ukraine for 2022–2032 (2022), the trends in the development of higher education in Ukraine must meet modern civilizational processes characterized by their complexity, dynamism, and scale. These processes precede the challenges of the system of preparing individuals for life. The expansion of cross-border education increased academic and labor mobility opportunities, and the growing relevance of informal education has intensified competition within the higher education system.

Automation of production, the gap between employer demands and higher education institutions' offerings, rapid urbanization, population movement in search of work in wartime conditions, the unprecedented spread of information technology, digitalization, the expansion of the European higher education area, inclusivity, innovation, and the trends toward acquiring future-oriented professions are becoming the basis of motivation and prestige in choosing the future career path of a modern secondary school graduate – a future higher education student.

Thus, young people's choice of a future profession, the influence of personal, creative, and cognitive aspects on this choice, the understanding of the future profession, and the market demand for it give rise to the problem of choosing a future profession, especially in today's challenging conditions. This problem is the focus of our research.

2. LITERATURE REVIEW

According to the critical positions of the Strategy, a key mechanism for forming a highly educated individual is higher education, which becomes a factor in a person's social, economic, political, cognitive-emotional, and creative security. The trends of global development in the information society, in terms of digitalization and high-tech economy, require widespread awareness of higher education and, as a result, the formation and development of a highly educated, cultured, and competent modern person capable of critical thinking. In the current wartime realities, higher education has become an essential, irreplaceable strategic element of security and post-war development of society (Strategy for the Development…, 2022).

Every young person who attains primary secondary education and completes general secondary education contemplates the choice of a future profession. It is fortunate when interest and talent for a particular field emerge from childhood, and when choosing education after school, the child clearly understands which specialty is close to them. For various reasons, it is common for adults to change their profession.

Despite the difficulties caused by the COVID-19 pandemic and the consequences of the large-scale Russian Federation invasion of Ukraine, employers and job seekers were forced to adapt to the imposed conditions.

According to the accredited educational agency “Karandash” (Nesen, 2021), in 2020, the most in-demand jobs were those related to sales. The top professions on recruitment websites were salesperson, sales manager, customer service manager, supervisor, head of the sales department, and sales representative. The professions mentioned above can safely be classified as creative, requiring high speed and maximum flexibility of thought processes.

During the height of the pandemic, most business, educational, and informal communications took place on the Internet. Competent specialists in the IT field were needed to create and maintain the technologies that enabled this communication: web developers, AI specialists, Full-Stack Engineers, front-end developers, QA engineers, and PHP programmers.

The coronavirus pandemic sparked a global demand for the profession of a doctor and other medical workers in medicine and pharmaceuticals: people began to take care of their health more actively, visit doctors more frequently, and buy masks and antiviral drugs. Thus, during the pandemic, people were required to take PCR tests for COVID-19 in special laboratories for travel abroad and many other purposes.

The most popular professions in the medical field are dentist, cosmetologist, surgeon, family doctor, pharmacist, pharmacist-technician, certified nurse, and practicing nurse (Nesen, 2021).

Ukrainian trends in the popularity and demand for specialties and professions differ minimally and tend to mirror global trends.

Overall, the portal's top 10 most in-demand professions in the world include logistics manager, credit expert, auxiliary medical staff (physician assistant, pharmacy technician, carer), equality manager, digital marketing specialist, certified practicing nurse, intensive care nurse, teacher, content manager, podcaster, blogger, personal trainer, business coach, and fitness trainer (Nesen, 2021).

Contemporary practice shows that the most in-demand professions in Ukraine at present are mid-level and senior managers (directors and heads); highly specialized professionals; specialists proficient in English; marketers, IT professionals, HR, secretaries, sales managers; lawyers, auditors, advocates, financiers, logisticians, business analysts; engineers, chemists, pharmacists, agronomists, microbiologists, locksmiths, and mechanics (Hrubryna, 2024).

To achieve demand in the labor market in Ukraine and globally, young people, prospective students, higher education seekers, graduates, and professionals must adapt to current, often unstable conditions. Progressive career consultants of today emphasize the importance of possessing essential competencies: developing so-called soft skills, being flexible, effectively organizing their work, negotiating and arguing their position, finding unconventional solutions, being resilient to stress, and demonstrating non-standard approaches to solving tasks.

At the same time, in addition to cognitive, communication, and creative skills, a good specialist must have professional competencies at a high level in their chosen field: being “in the know”, ideally having a relevant education, keeping up with innovations in the field, attending training sessions and lectures to enhance qualifications, and maintaining continuous internships (Nesen, 2021).

The need to provide highly qualified specialists for the national socio-economic system, strengthen the state's defense capability, create an intellectual reserve for society in the post-war reconstruction period of Ukraine, and adhere to the principles of sustainable education development imposes specific requirements and priorities for planning and implementing the educational process in our country. Thus, the primary focus of Ukraine's educational strategy is to organize an effective admission campaign for secondary school graduates, profile the educational process, and conduct practical career guidance, all of which precede the conscious choice of a future higher education seeker (Strategy for the Development…, 2022).

For the third year in a row, the admission campaign in Ukraine has been conducted under martial law against the backdrop of a full-scale invasion of the Muscovites into our state's territory. From 2022, applicants can take the National Multi-Subject Test (NMT) instead of the External Independent Assessment (ZNO), as in 2019–2021. Along with the NMT results, applicants must submit motivational letters or take creative exams for each higher education institution and specific specialties (Zub & Zhezhnych, 2022).

Additionally, preferential categories of applicants were identified: 10% for those affected during the Revolution of Dignity, orphans, children deprived of parental care, persons with disabilities, and combatants, and 10% of budget places for applicants from dangerous areas, occupied territories, and internally displaced persons.

In 2023, the state allowed applicants to strengthen their admission prospects using the weighting coefficient for subjects in the natural sciences and mathematics cycle (biology, chemistry, physics) and Ukrainian history. The essence of the weighting coefficients, awarded based on NMT subject results, lies in giving more weight when applying for a related subject specialty. The applicant familiarizes themselves with the weighting coefficients and select the most priority results for admission to the chosen specialty (Published Coefficient, 2023).

A conscious understanding of professional aspirations by senior students is impossible without considering the individual qualities and specific traits of teachers, parents, and the graduates themselves in the context of the personal prerequisites for future development, harmonious self-realization, and future growth in a particular profession that is in demand and well-paid in society and globally. The process of personality formation, with new aspects, aspirations, and statuses, occurs gradually under the influence of the immediate environment and societal factors, which affect the awareness of professional aspirations. Any activity must be creative because, without this, it is impossible to remain in a particular profession due to a lack of interest, creative potential, and self-realization.

According to academician Romenets and Manokha (2017), creativity is when the world is revealed from within the personality, as it represents a "living mirror" of the universe. Through the personality, one can see this world. Moreover, according to the scholar, an appropriate emotional state is needed for an active, creative process—an internal resonance as a change in the mental state. This results in the act of behavior, and the personality acquires a new meaning of situational, motivation, activity, and post-action (Romenets & Manokha, 2017).

Today, research by neuropsychologists and neuroanatomists, dedicated to studying the differences in the brains of creative people compared to ordinary people in various aspects, is gaining popularity. For instance, researchers in human physiology have found a correlation between the level of creativity and the volume of grey and white matter in the brain, as well as the "neurochemistry of creativity" (Jung et al., 2010; Takeuchi et al., 2010b; Byrkovych et al., 2023). Specifically, Jung et al. (2010) discovered a correlation between the thickness of grey matter and the level of creativity using magnetic resonance imaging. This can be measured using tests for divergent thinking or by assessing respondents' creative achievements through a special questionnaire by Carson et al. (2005).

These researchers suggest that cognitive abilities and creative (creative) abilities develop simultaneously in individuals. They believe this is likely related to the presence of grey matter in certain parts of the brain, which should be thinner. Perhaps this ensures the generation of new, fresh, original ideas.

In particular, Takeuchi et al. (2010a) notes that the regional volume of grey matter in subcortical areas depends on the level of creativity. Researcher Gansler et al. (2011) claims that increased grey matter volume in the right inferior parietal region is associated with a higher level of creativity.

Takeuchi et al. (2010b) also emphasizes that the leading pathways of white matter enhance the creative process by integrating received information and the individual's higher cognitive functions, such as sustained attention, flexibility, idea generation, and working memory. This supports the theory that interhemispheric interaction is valuable for spreading creative intentions and thoughts and integrating received information (Mihov et al., 2010; Bakhmat et al., 2023).

Regarding the "neurochemistry of creativity", in studies of the "creative brain", the concentration of N-acetyl aspartate is often used as an indicator. This is due to its metabolic function, active involvement in physiological processes, and role as a marker of neuron health (Baslow, 2003; Jung et al., 2010; Moffett et al., 2007; Arden et al., 2010).

Teachers diligently influence graduates' cognitive components. Due to their influence, senior students increasingly take an active interest in learning, understanding the need for quality knowledge to successfully pass the external independent assessment (ZNO/NMT) and with aspirations to enter the chosen field of higher education.

The communicative motive, which manifests in the desire to communicate, is also essential. It should be noted that this is often lacking both at school and outside of it due to limited face-to-face communication during lessons. An individual's communicative space is fundamental, within which communicative discourse is realized. As a result, in such a social space, future

higher education applicants start to take a greater interest in learning and express their creative potential to create a unique activity product.

Senior school students, future applicants with high academic achievement, tend to be interested in intellectual professions and spiritual reflection, pondering questions like “What can I do for society if I choose a specific profession?” and “What will I gain personally?” These students more consciously identify their inclinations towards certain professions and their interest in specific fields of activity. They better assess their abilities and skills, their self-assessment as future professionals improve, and their sense of their uniqueness in performing complex tasks becomes more refined. They also improve their ability to evaluate which personal qualities contribute to future achievements. As a result, their stability in accomplishing tasks increases, as does the creative component of doing something interesting in new conditions. Senior students with average or low academic performance show less developed self-regulation skills, their future professional interests are vague, they lack spiritual and emotional direction, and they are more oriented towards productive goals. Such students do not put in significant effort when completing tasks; they are unable to consistently complete necessary work; they lack understanding of what they should strive for; they are not familiar with the specifics of different professions; they do not see themselves in a particular field of activity; and they rely on quick success or sudden luck.

The features of self-regulation in a future higher education student, which correspond to the psychological capabilities of a person as an individual, are closely related to the individual's abilities, which are prerequisites for forming and developing independent thinking in educational activities. The development of intellectual abilities and a consciously chosen strategy for dealing with difficulties affect the quality of learning. Additionally, the development of special abilities based on general abilities occurs through the acquisition of operational mechanisms for adapting to educational activities; criteria for achieving short- and long-term goals; formulating personal rules and recommendations in specific situations (such as uncertainty or a new, unknown situation); and creating a plan for realizing a dream or specific task. Therefore, further abilities are developed as one gradually and creatively tackles new tasks.

Creative aspects exist in every individual, so the expression and realization of creative potential make a person mentally healthy. The conditions of the environment in each individual's life can influence their engagement in the creative process, even if it is antisocial. For instance, the ability to take risks, display originality in certain circumstances, or play a social role or multiple roles may emerge.

However, scholars hold other views. Some interpret creativity as a process of self-realization of the spiritual component of the personality.

According to Skovoroda (2023), external stimulation, in which the world understands the person and the person understands the world, leads to creativity being manifested in the process of finding work that is true to one's soul, and as a result, the person finds happiness.

Research by R. Atchley suggests that both hemispheres solve creative tasks in highly creative individuals. In contrast, only the right hemisphere is active in those with low creativity (Atchley, 1999).

The results of neuroimaging studies of visual and artistic creativity are consistent with electroencephalographic data and support the idea that creativity requires interhemispheric interactions and is not confined to any specific hemisphere (Bengtsson et al., 2007; Berkowitz & Ansari, 2008; Brown et al., 2006; Kowatari et al., 2009; Semenets-Orlova et al., 2023).

Preparation for university entrance requires significant internal resource expenditure. Prolonged and intense preparation for the chosen profession can lead to the disorganization of academic activities due to fatigue, lack of sleep, and exhaustion.

Moreover, stress develops in a young body's mental state, which can be destructive for an immature personality. Significant support for a young person in a state of heightened tension can come from the social support of family, their environment, experience in coping with stress, self-control skills, and the ability to overcome difficulties and not give up in the face of failure.

Preventing unpleasant functional states involves identifying stress to reduce emotional load and tension in activities to avoid undesirable consequences. In normalizing the functioning of the personality, it is worth engaging in recovery processes that promote the mobilization of one's resources and the organization of light physical activities. This could include Pilates, fitness, stretching exercises, neck and back muscle exercises, massaging the ears, scalp, and face with fingertips to reduce the harmful effects of laptops, computers, and mobile phones, to avoid strain while focusing on tasks, and to activate brain function, unwind, and relax. This will help create conditions for high-quality work capacity in mastering knowledge and performing tasks and future professional activities.

For the self-regulation of activities of a future higher education student under conditions of uncertainty, it is necessary to rely on the formation of self-control, self-responsibility, and self-assessment, which requires a foundation of spiritual and intellectual potential. Interpersonal relations and material factors in the educational process are also significant. Building a professional activity project in senior school helps reduce uncertainty's negative impact. Senior students who have chosen are more motivated in their actions, demonstrate creativity in completing tasks, and engage in additional preparation (lessons with tutors, participation in national and international competitions, Olympiads) to enter their desired higher education institution.

The research aims to investigate the problem of choosing a future profession by applicants to higher education institutions (HEIs) in Ukraine, particularly cognitive-creative (internal) and socio-economic and socio-political factors (external), as well as military events in the country.

3. METHODS

To achieve the stated aim, the study employed a range of methods: general scientific methods – theoretical analysis of psychological and pedagogical scientific literature, normative-legal and legislative documents of Ukraine and the European Union, and data generalization; and specific scientific methods—naturalistic, open observation, surveys, and interviews.

To identify trends in the cognitive-creative aspect of choosing a future profession and/or socio-political and socio-economic factors, the attitudes of prospective higher education students towards contemporary professions from 2019 to 2023 were analyzed based on the results of a questionnaire survey authored by the researcher. This questionnaire contained three questions: “In your opinion, what is the most in-demand specialty today?”; “In your opinion, what is the most lucrative profession today?”; “Which profession do you plan to choose?” The data from the study were processed using empirical data processing methods: comparison, analysis and synthesis, and generalization of independent characteristics.

In analysing the survey responses from 2019 to 2023, the study used methods of comparison, analysis and synthesis, and generalization of independent characteristics. These empirical approaches enabled the researchers to identify trends in respondents' career preferences across different periods. The survey data was further processed using quantitative comparisons across age and demographic groups, which provided insights into shifts in students' attitudes towards high-demand professions in Ukraine.

4. RESULTS

The study focused on applicants aged 16 to 24 in the regional Centre of Kropyvnytskyi in 2019, 2020, 2021, 2022, and 2023 (see Figure 1). The research was conducted in July 2019 and 2020 and June 2021, 2022, and 2023.

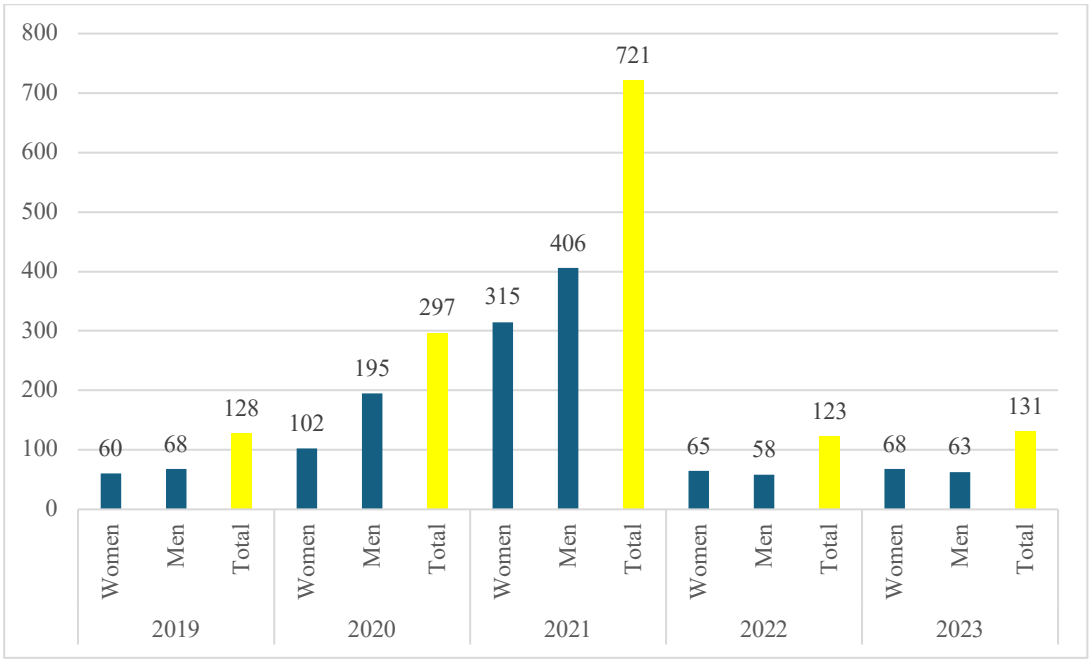

Figure 1. Number of respondents surveyed during 2019–2023
Source: compiled by the author

When answering the question "In your opinion, what is the most in-demand profession today?" (see Table 1), the vast majority of respondents in 2019 preferred the legal field (lawyers, advocates, judges, prosecutors, police officers). 88% of respondents favoured the field of Law. Most respondents in 2020 believed that the most popular profession at that time was IT technologies and cybersecurity. Scientific and technological progress, high salaries, and the demand for software specialists were critical factors in the career choice of 38.7% of applicants. The flexibility, mobility, and the possibility of remote and distance work with stable pay during the global quarantine measures related to the spread of COVID-19 also increased interest in the chosen profession.

When answering the first question, the 2021 results combined the results of previous years in the legal field (20.3%) and the IT technologies field (43.4%). High salaries, communication, and the demand for remote intervention became vital in respondents' choice of these professions.

Respondents also noted the basis for possible future political activities, which could be achieved through mastering professional legal competencies (see Figure 2).

In 2022–2023, the most in-demand professions, as indicated by respondents, were somewhat confused with positions and statuses: politician, deputy, diplomat, economist, psychologist, web designer, blogger, and military personnel (see Figure 3).

In 2022, the profession of psychologist became attractive (10%). Respondents also included police officers, tractor drivers, pilots, drivers, journalists, builders, biotechnologists, and chemical engineers (see Figure 4).

Popular professions mentioned by respondents in the ranking after the fields of law and programming included the fields of "Social and Behavioural Sciences" and "Management and Administration". Notably, the most popular specialty was "Economics", with 4.7% (2019), 11.3% (2021), 18.6% (2022), and 19.4% (2023). Thus, in response to the question "In your

opinion, what is the most in-demand profession?" supporters of the economic direction in 2021 answered that these are economists, financiers, banking specialists, and stock traders (see Figure 5).

Table 1. Results of respondents' answers to the question "In your opinion, what is the most in-demand profession today?"

Respondents Field of expertise	2019			2020			2021			2022			2023		
	Women	Men	Total	Women	Men	Total	Women	Men	Total	Women	Men	Total	Women	Men	Total
Law	54	59	113	39	81	120	75	71	146	2	6	8	12	8	20
Information technology	1	4	5	23	92	115	100	213	313	6	8	14	5	21	26
Management and administration	-	-	-	6	9	15	20	5	25	-	-	-	9	7	16
Social and behavioral sciences	3	4	7	6	3	9	51	50	101	27	8	35	16	9	25
Social work	-	-	-	20	5	25	9	-	9	13	7	20	10	6	16
Healthcare	1	-	1	-	-	-	10	13	23	2	5	7	5	2	7
Production and technology	-	-	-	-	-	-	7	-	7	-	-	-	-	-	-
Civil security	-	-	-	-	-	-	2	1	3	-	-	-	-	-	-
Education/pedagogy	1	-	1	4	-	4	20	7	27	-	-	-	-	2	2
Culture and arts	-	-	-	-	-	-	3	1	4	-	-	-	-	-	-
Service sector	-	-	-	-	-	-	2	-	2	-	-	-	-	-	-
Architecture and construction	-	-	-	-	2	2	1	6	7	1	1	2	-	-	-
Agricultural sciences and food	-	-	-	-	-	-	-	9	9	-	2	2	-	-	-
Transport	-	1	1	-	2	2	2	9	11	-	1	1	-	-	-
Journalism	-	-	-	-	-	-	3	-	3	4	-	4	-	-	-
Chemical engineering and bioengineering	-	-	-	-	-	-	-	1	1	-	2	2	-	-	-
Electrical engineering	-	-	-	-	1	1	-	1	1	-	2	2	-	-	-
Humanities	-	-	-	4	-	4	6	-	6	5	2	7	8	1	9
Veterinary medicine	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-
Military sciences, national security, state border security	-	-	-	-	-	-	-	7	7	4	13	17	3	7	10
Could not provide a clear answer	-	-	-	-	-	-	4	11	15	1	1	2	-	-	-
Total:	**60**	**68**	**128**	**102**	**195**	**297**	**315**	**406**	**721**	**65**	**58**	**123**	**68**	**63**	**131**

Source: compiled by the author

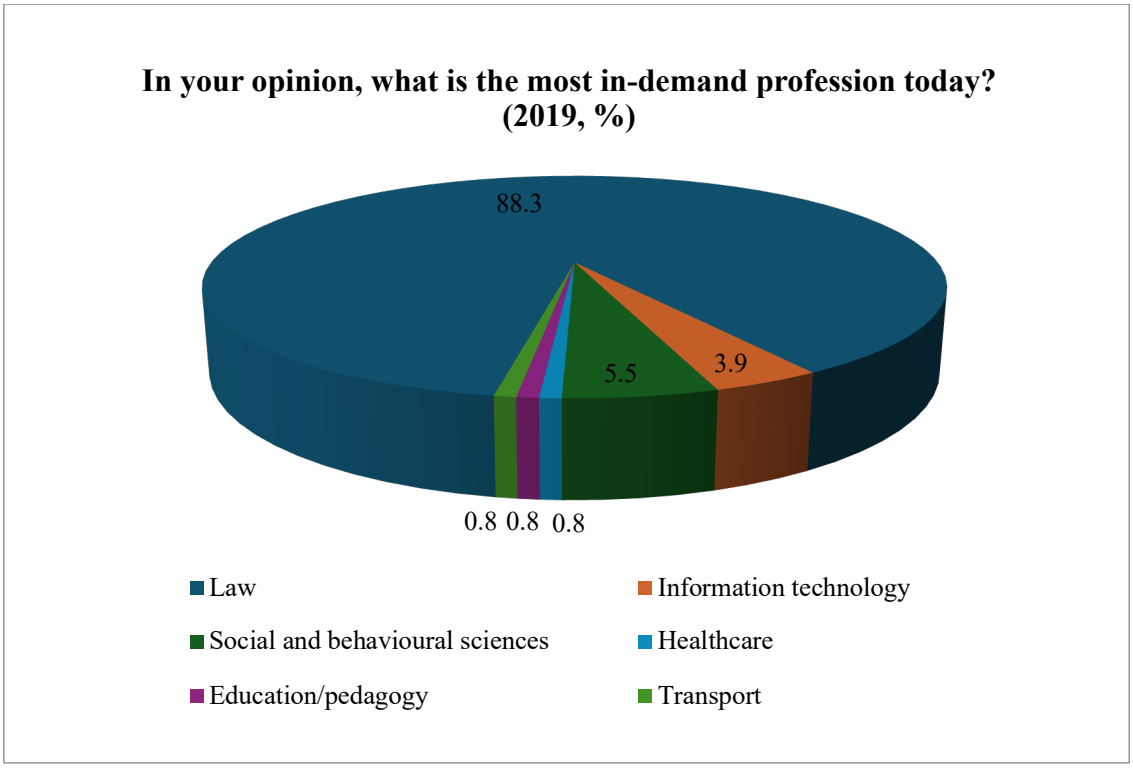

Figure 2. Results of respondents' answers to the question "In your opinion, what is the most in-demand profession today?" (2019, %)
Source: compiled by the author

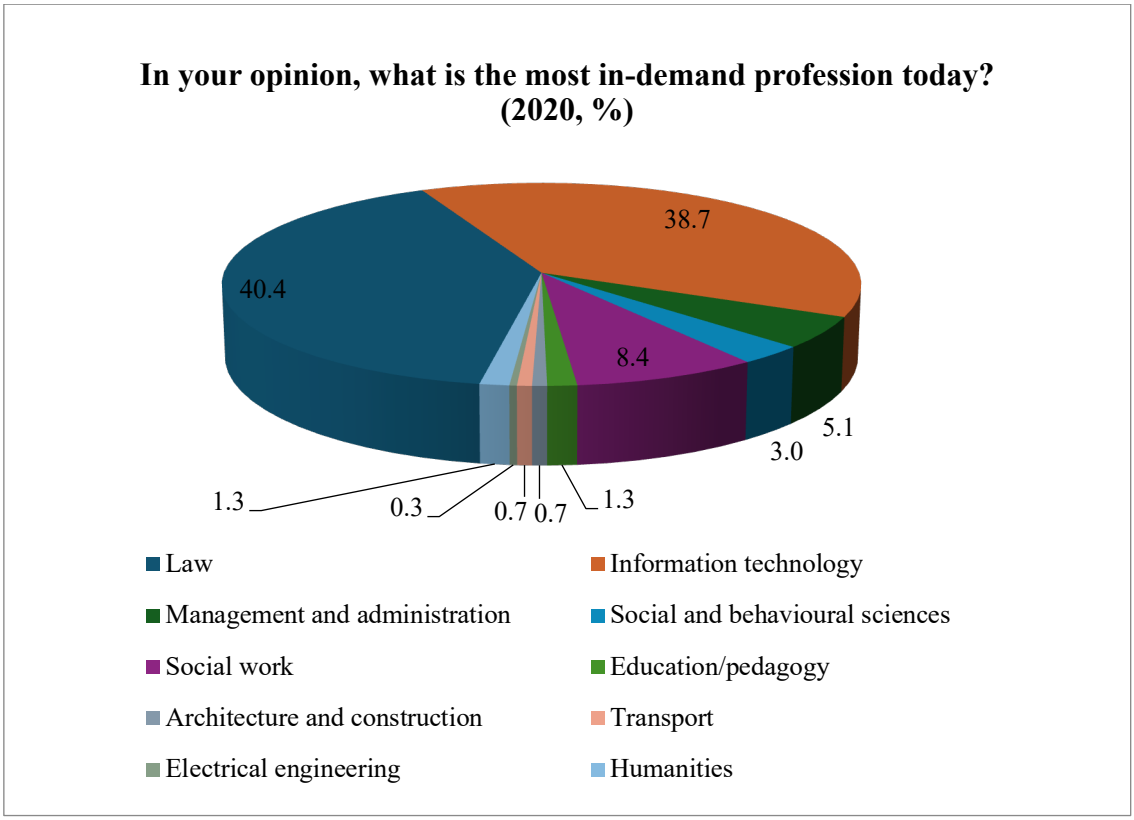

Figure 3. Results of respondents' answers to the question "In your opinion, what is the most in-demand profession today?" (2020, %)
Source: compiled by the author

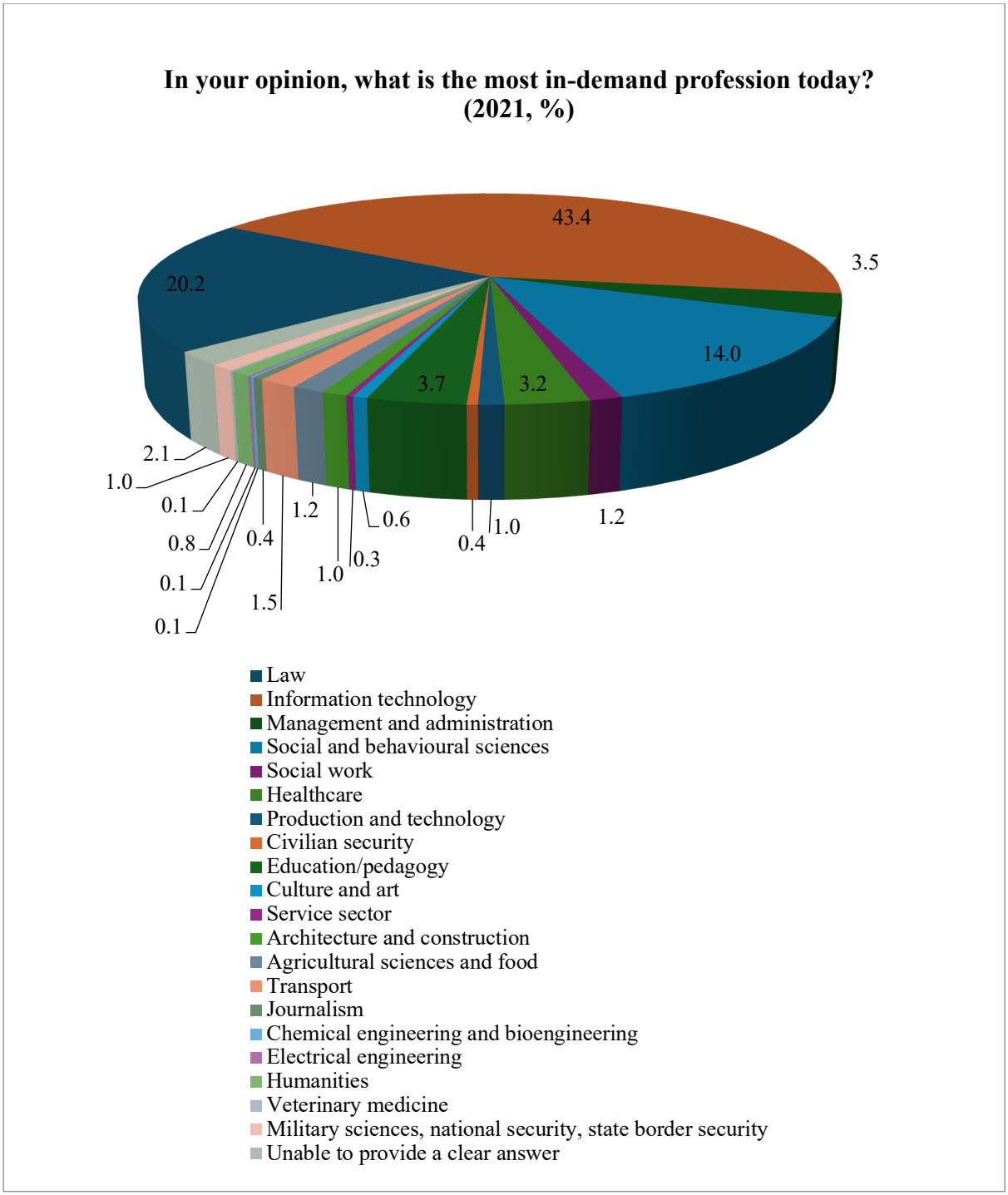

Figure 4. Results of respondents' answers to the question "In your opinion, what is the most in-demand profession today?" (2021, %)
Source: compiled by the author

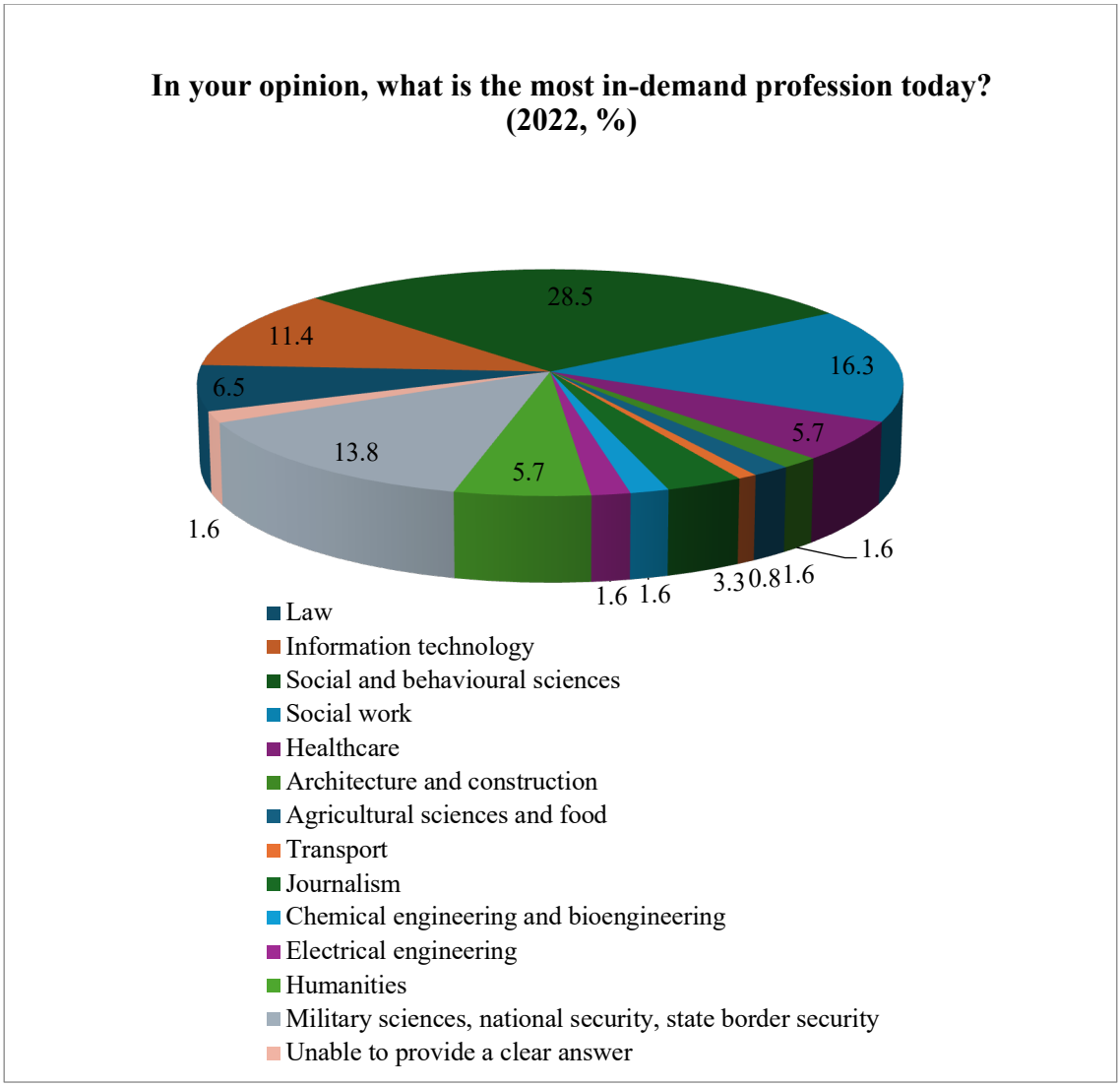

Figure 5. Results of respondents' answers to the question "In your opinion, what is the most in-demand profession today?" (2022, %)
Source: compiled by the author

Social work became the popular profession for the surveyed respondents in 2022-2023 (25.2% in 2022 and 21.3% in 2023) due to the war events in Ukraine.

In 2022–2023, in addition to the consistently popular specialties such as "Law", "Psychology", "Management", "Computer Science", "Software Engineering", and "Cybersecurity", respondents in the city also added "Philology" (study of foreign languages) from the field of "Humanities" (8.6% in 2022, 11.1% in 2023) and "Medicine" from the field of "Healthcare" (8.6% in 2022, 9.2% in 2023) to the list of in-demand specialties (see Figure 6). Once again, applicants largely attribute this choice to the ongoing war in Ukraine.

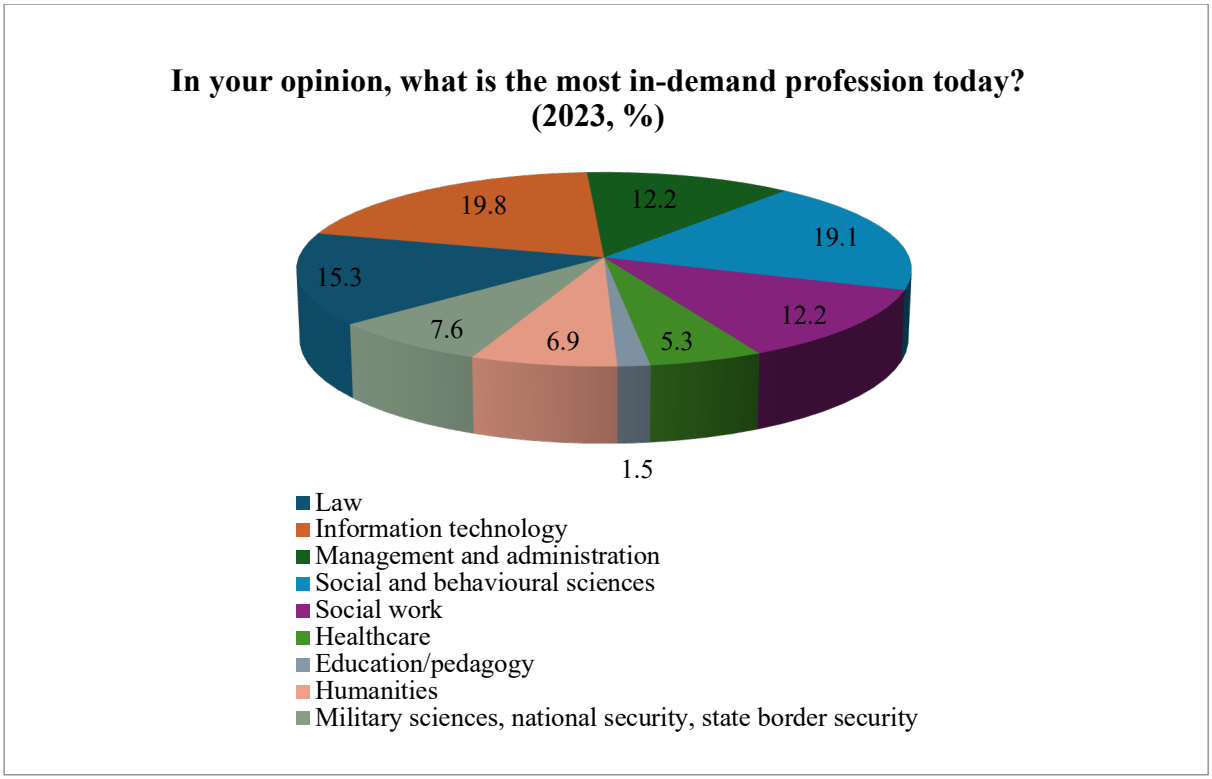

Figure 6. Results of respondents' answers to the question "In your opinion, what is the most in-demand specialty today?" (2023, %)
Source: compiled by the author

The question "In your opinion, what is the most in-demand specialty today?" revealed an intense competition between personally chosen specialties and those genuinely in demand in Ukraine today, such as welders, engineers, and social workers. Among the least popular professions in 2019, based on the analysis of the second question, were: military personnel (0.78%), aviation pilots (0.56%, all of whom were male), psychologists (1.2%), social workers (0.8%), and teacher of a specific subject (1.0%).

The least popular professions in 2020 were "Agrarian Sciences and Food", "Chemical Engineering and Bioengineering", and "Journalism". Military specialties were among the least popular during 2019-2020, but this significantly changed in 2022–2023. A certain percentage (9%) of respondents in 2022–2023 chose the profession of military personnel, border guard, or national security specialist.

The respondents' answer to the question "In your opinion, what is the most in-demand specialty today?" in 2021 combined the answers from 2019 and 2020 and added genuinely in-demand professions in Ukraine, such as doctor (dentist, anesthetist, orthodontist, virologist) (9.1%), agricultural machinery mechanic (7.3%), and even the profession of model (0.4%).

Respondents in 2020 chose a considerable percentage of the field of "Law": professions like police officers and investigators (7.7%). Respondents who chose such a specialty considered it in demand based on personal opinions rooted in family traditions, values, patriotic calling, and concerns about the crime rate.

The trend of attractiveness towards the legal field was also observed in the answers to the second question, "In your opinion, what is the most lucrative profession today?" (see Table 2). Respondents from 2019–2023, 45% of whom chose the legal direction, expressed a desire to earn substantial income by working as a lawyer. The military events in 2022 prompted respondents to choose the most lucrative specialty due to the need for honest and highly competent specialists in law.

Table 2. Results of respondents' answers to the question "In your opinion, what is the most lucrative profession today?"

Respondents Field of expertise	2019			2020			2021			2022			2023		
	Women	Men	Total	Women	Men	Total	Women	Men	Total	Women	Men	Total	Women	Men	Total
Law	46	52	98	60	139	199	70	53	123	2	3	5	9	6	15
Information technology	2	7	9	2	4	6	120	235	355	12	28	40	12	17	29
Management and administration	-	-	-	-	-	-	50	29	79	14	6	20	8	2	10
Social and behavioral sciences	8	2	10	-	-	-	35	14	49	16	-	16	12	4	16
Social work	1	-	1	38	36	74	-	-	-	-	-	-	-	-	-
Healthcare	2	1	3	-	-	-	10	26	36	-	-	-	8	5	13
Production and technology	-	-	-	-	-	-	7	15	22	-	-	-	-	-	-
Civil security	-	-	-	-	-	-	-	7	7	-	-	-	-	2	2
Education/pedagogy	1	-	1	-	-	-	10	4	14	-	-	-	-	-	-
Culture and arts	-	-	-	-	-	-	10	4	14	-	-	-	1	-	1
Service sector	-	-	-	-	-	-	1	-	1	-	-	-	1	-	1
Architecture and construction	-	-	-	-	-	-	-	1	1	1	1	2	8	7	15
Agricultural sciences and food	-	1	1	-	-	-	2	12	14	-	-	-	-	5	5
Transport	-	1	1	-	-	-	-	2	2	-	1	1	-	-	-
Journalism	-	-	-	-	-	-	-	1	1	4	1	5	-	-	-
Chemical engineering and bioengineering	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-
Electrical engineering	-	3	3	2	16	18	-	1	1	-	-	-	-	1	1
Humanities	-	-	-	-	-	-	-	-	-	4	-	4	2	1	3
Veterinary medicine	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-
Military sciences, national security, state border security	-	1	1	-	-	-	-	-	-	9	13	22	2	13	15
Could not provide a clear answer	-	-	-	-	-	-	-	-	-	3	5	8	5	-	5
Total:	60	68	128	102	195	297	315	406	721	65	58	123	68	63	131

Source: compiled by the author

When asked "In your opinion, what is the most lucrative specialty?" respondents across all years predominantly answered "deputy" or "politician" (every fifth respondent). Additionally, in 2021, answers such as "president", "prosecutor", "businessperson", and "farmer" appeared (every seventh respondent). In 2022–2023, most respondents favored professions related to information technology (32.5% in 2022, 22.1% in 2023), management, and administration (16.2% in 2022, 7.6% in 2023) (see Figure 7).

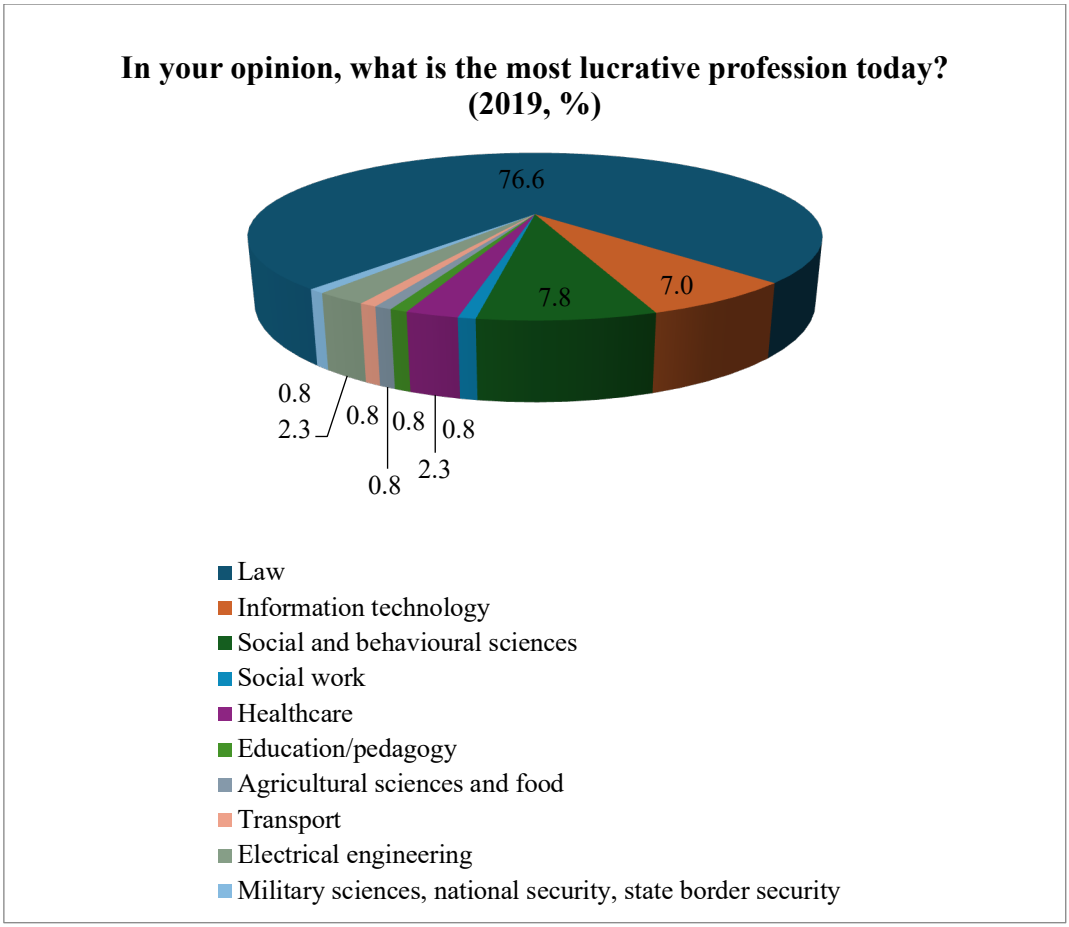

Figure 7. Results of respondents' answers to the question "In your opinion, what is the most lucrative profession today?" (2019, %)
Source: compiled by the author

Particular attention should be paid to the respondents' answers regarding the lucrativeness of the military profession in 2022–2023 (17.8% in 2022, 11.45% in 2023) (see Figures 8, 9, 10).

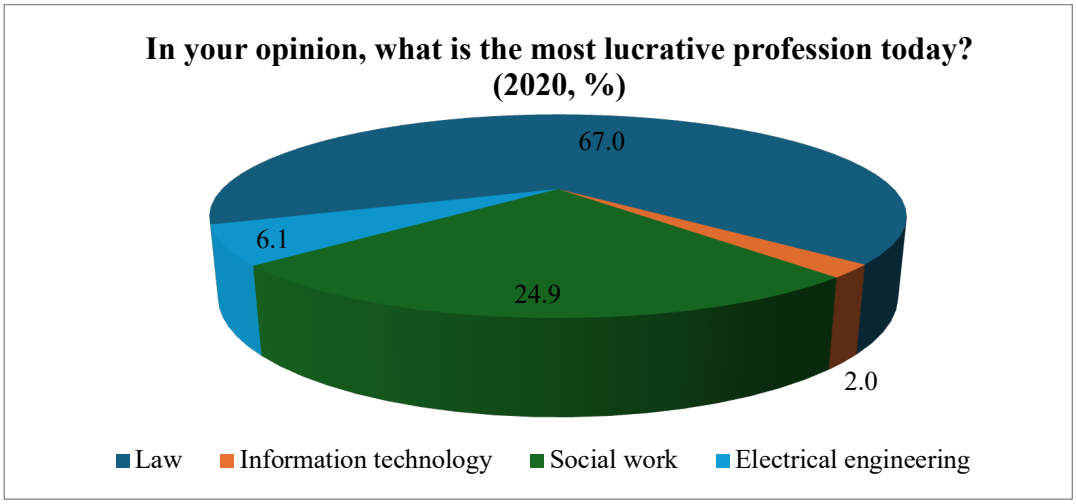

Figure 8. Results of respondents' answers to the question "In your opinion, what is the most lucrative profession today?" (2020, %)
Source: compiled by the author

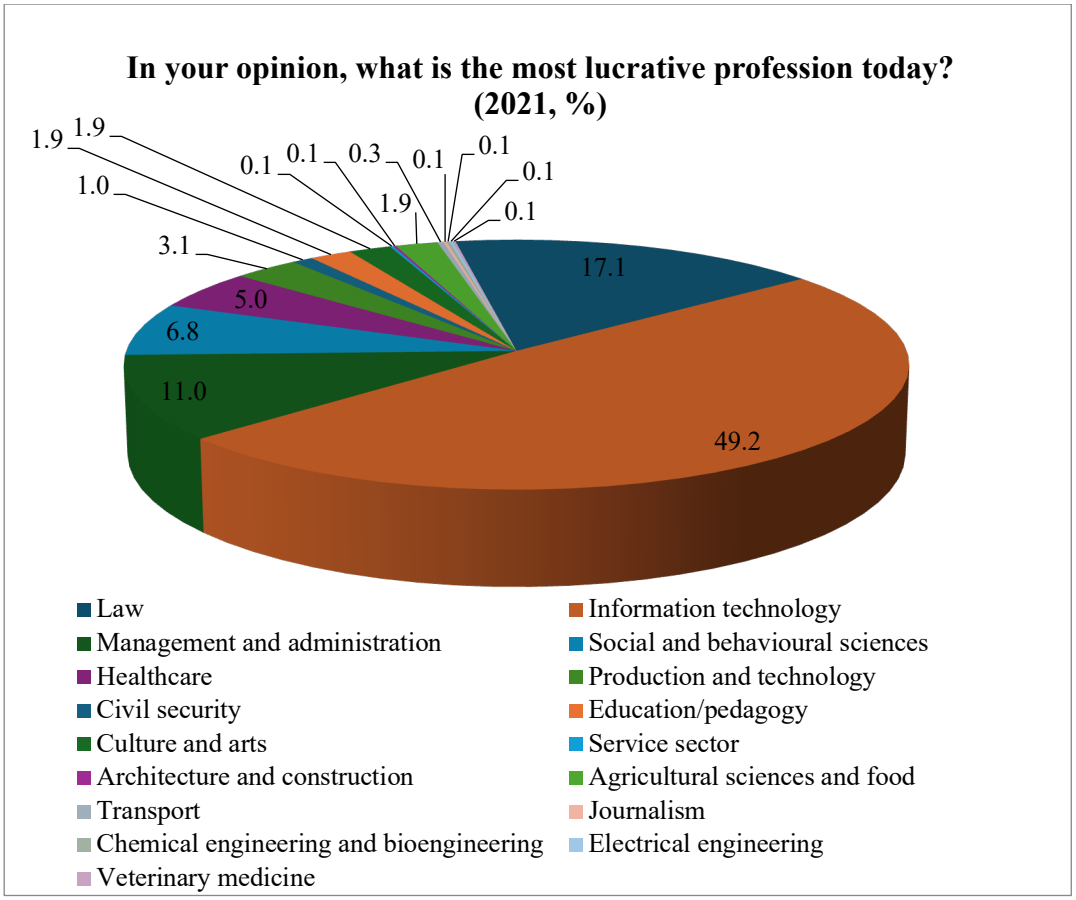

Figure 9. Results of respondents' answers to the question "In your opinion, what is the most lucrative profession today?" (2021, %)
Source: compiled by the author

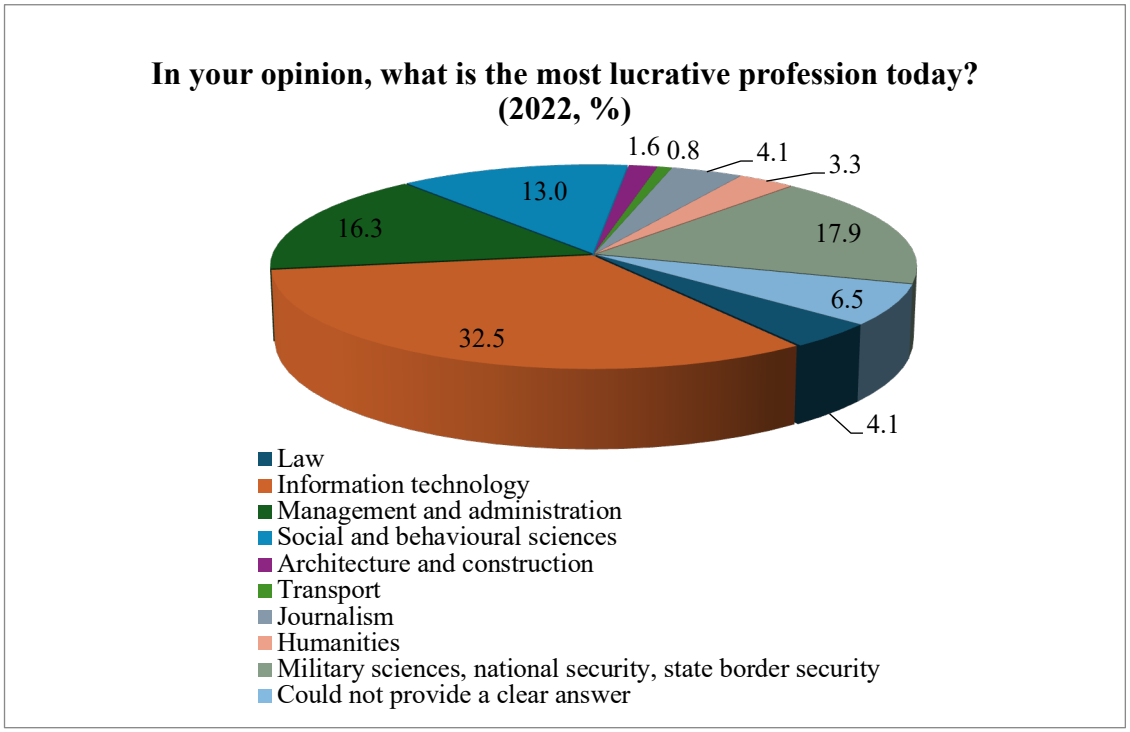

Figure 10. Results of respondents' answers to the question "In your opinion, what is the most lucrative profession today?" (2022, %)
Source: compiled by the author

There were also beliefs regarding the lucrativeness of professions in fields such as “Architecture and Construction” (architect, civil engineer, designer) – 11.4% (2023), “Law” (lawyer, judge) – 11.4% (2023), “Healthcare” (dentist, doctor, pharmacist) – 5.0% (2021), 10.0% (2023), and “Social and Behavioral Sciences” (psychologist, economist, political scientist) – 13.0% (2022), 12.2% (2023) (see Figure 11).

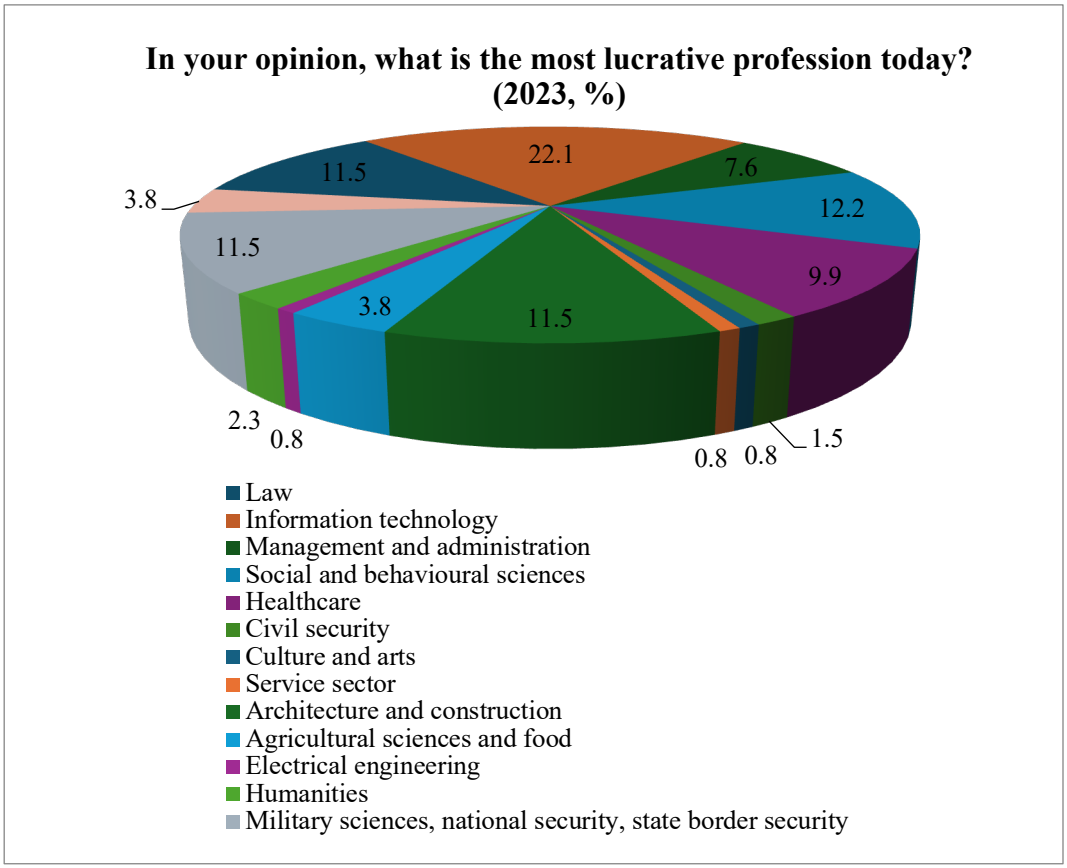

Figure 11. Results of respondents' answers to the question “In your opinion, what is the most lucrative profession today?” (2023, %)
Source: compiled by the author

Most respondents across all presented years chose their profession randomly, were poorly oriented in the diversity of specialties and specializations, and had somewhat distorted perceptions of adult professional activities. They did not distinguish between “politician” and “political scientist”. Many considered “deputy” and “politician” as specialties. Most applicants do not differentiate between the most in-demand and well-paid professions. Some respondents could not answer the question at all.

The most challenging question was: “What profession do you plan to choose?” (see Table 3).

The vast majority of applicants, at the time of the External Independent Testing (2019–2021) and the National Multi-subject Test (2022–2023), had no idea about their choice of professional development (see Figure 12).

Table 3. Results of respondents' answers to the question "What profession do you plan to choose?"

Respondents Field of expertise	2019			2020			2021			2022			2023		
	Women	Men	Total	Women	Men	Total	Women	Men	Total	Women	Men	Total	Women	Men	Total
Law	17	24	41	30	74	104	54	40	94	3	2	5	10	7	17
Information technology	7	14	21	55	70	125	56	225	281	12	18	30	15	18	33
Management and administration	11	8	19	3	6	9	20	9	29	12	10	22	2	2	4
Social and behavioral sciences	9	5	14	5	4	9	20	2	22	20	17	37	17	4	21
Social work	1	1	2	-	-	-	-	-	-	7	3	10	3	-	3
Healthcare	2	1	3	-	-	-	10	12	22	-	-	-	5	5	10
Production and technology	-	-	-	-	-	-	21	8	29	-	-	-	-	-	-
Civil security	-	2	2	3	30	33	18	18	36	-	1	1	-	2	2
Education/pedagogy	8	3	11	-	-	-	28	8	36	-	-	-	5	4	9
Culture and arts	-	-	-	-	-	-	1	6	7	-	-	-	-	-	-
Service sector	-	-	-	2	1	3	19	3	22	-	-	-	1	-	1
Architecture and construction	-	-	-	4	10	14	5	2	7	-	-	-	5	7	12
Agricultural sciences and food	-	4	4	-	-	-	-	14	14	-	-	-	-	2	2
Transport	-	6	6	-	-	-	13	16	29	-	-	-	-	-	-
Journalism	-	-	-	-	-	-	20	9	29	1	-	1	-	-	-
Chemical engineering and bioengineering	-	-	-	-	-	-	15	7	22	-	-	-	-	-	-
Electrical engineering	-	-	-	-	-	-	-	14	14	-	-	-	-	-	-
Humanities	5	-	5	-	-	-	-	7	7	2	-	2	2	-	2
Veterinary medicine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Military sciences, national security, state border security	-	-	-	-	-	-	10	4	14	-	5	5	2	11	13
Could not provide a clear answer	-	-	-	-	-	-	5	2	7	8	2	10	1	1	2
Total:	**60**	**68**	**128**	**102**	**195**	**297**	**315**	**406**	**721**	**65**	**58**	**123**	**68**	**63**	**131**

Source: compiled by the author

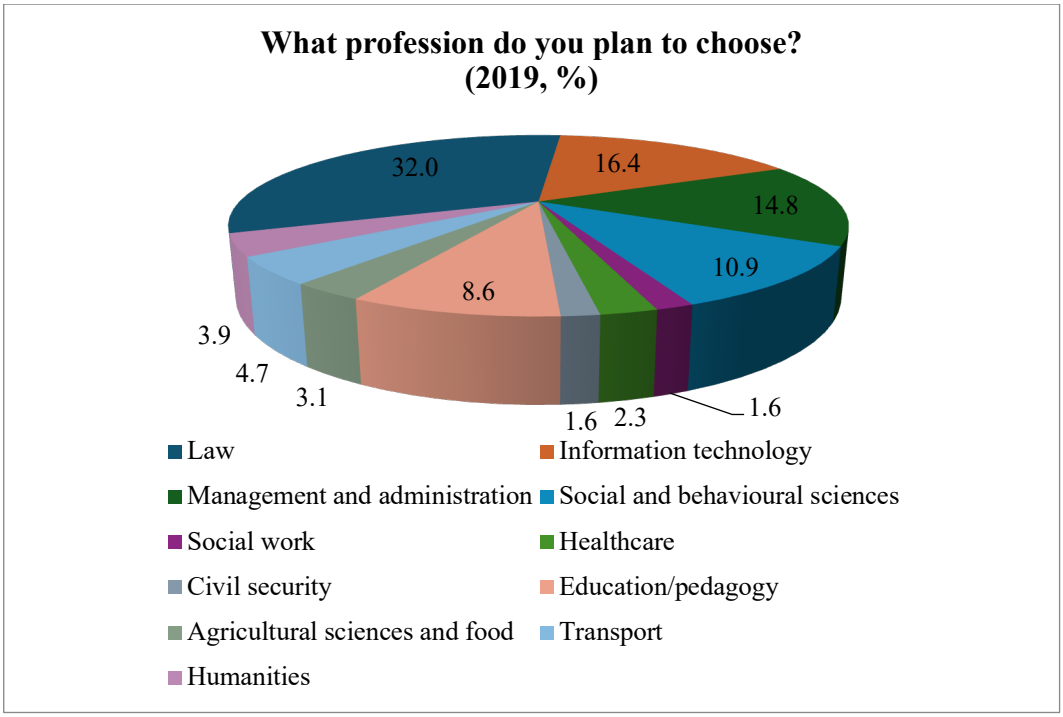

Figure 12. Results of respondents' answers to the question "What profession do you plan to choose?" (2019, %)
Source: compiled by the author

At the time of the survey, only 53% (2019), 44.8% (2020), 34.2% (2021), 30.3% (2022), and 28.6% (2023) of the respondents knew which higher education institution they would enroll in and which profession they would pursue. Throughout all the years, the respondents' choices were dominated by the following fields: "Law", "Information Technology", "Management and Administration", and "Social and Behavioral Sciences". Starting from 2022, there has been an observed increase in applicants' interest in the field of "Military Sciences, National Security, and Border Security" (see Figure 13).

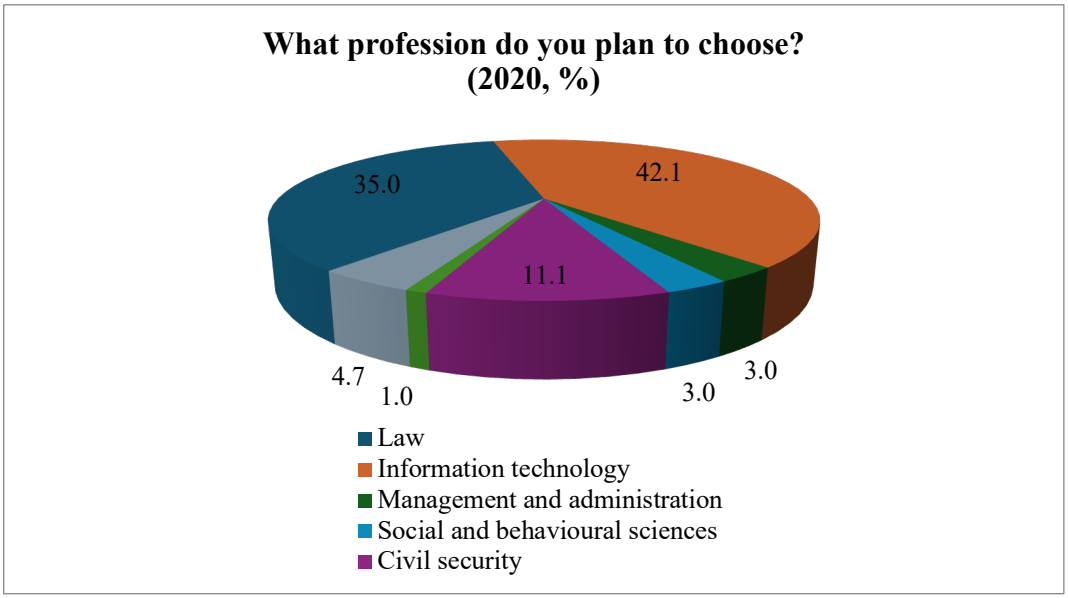

Figure 13. Results of respondents' answers to the question "What profession do you plan to choose?" (2020, %)
Source: compiled by the author

The analysis of the 2021 survey results shows more diversity in fields of knowledge than in previous years. The priority was Information Technology, Law, Civil Security, and Education/Pedagogy. This was a pre-war, peaceful year. Respondents also planned to pursue Management and Administration, Production and Technology, Transport, and Journalism (see Figure 14). All these directions are related to a peaceful life and the professions that are in demand during such times.

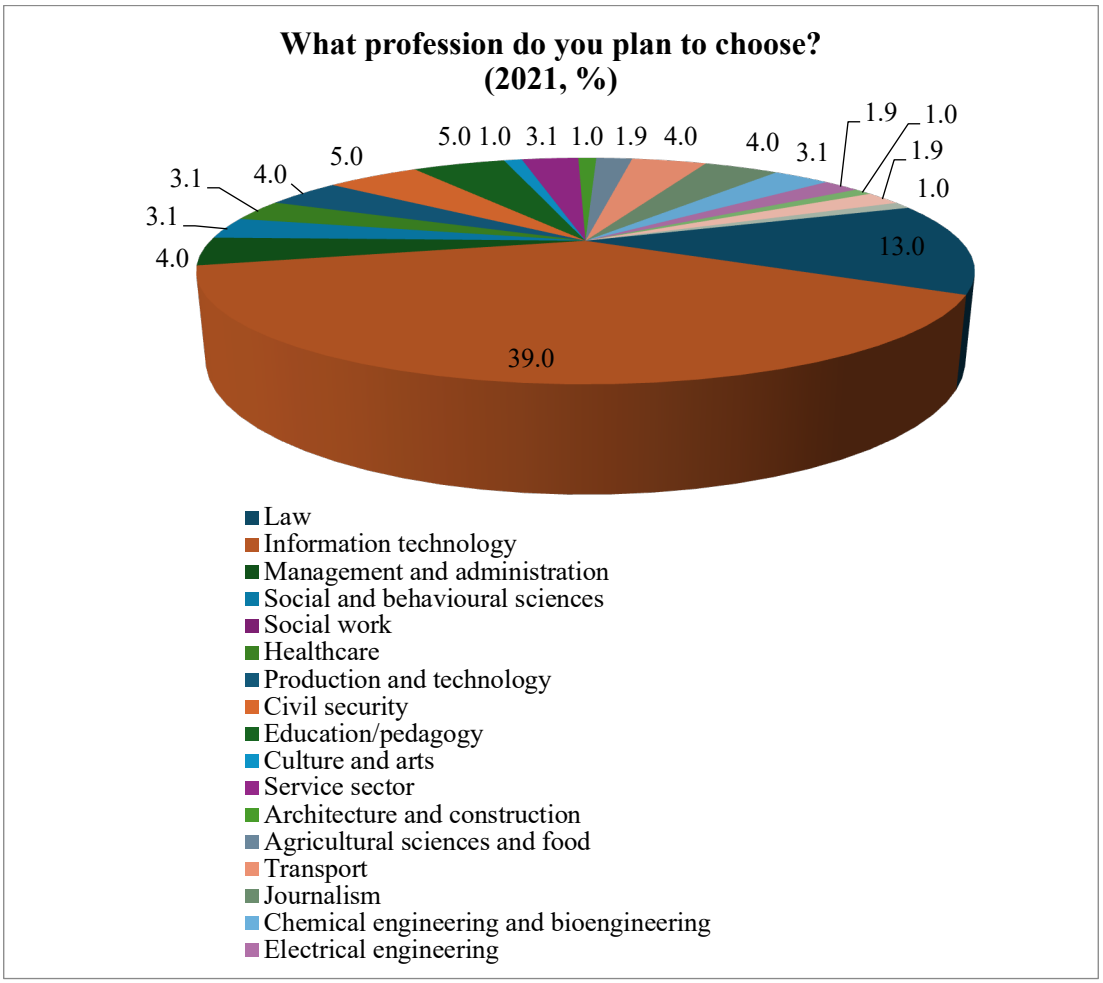

Figure 14. Results of respondents' answers to the question "What profession do you plan to choose?" (2021, %)
Source: compiled by the author

The war has adjusted the choice of profession, as observed in the survey results of 2022 and 2023. In 2022, Information Technology and Social and Behavioral Sciences were the leading fields.

The increase in the choice of professions in the direction of Social and Behavioral Sciences (2021 – 1.9%; 2022 – 30%) can be explained by the youth's understanding of the need for specialists in psychological support for people who have suffered not only physically but also psychologically from the war (see Figure 15).

In 2022, there was some confusion and uncertainty among the youth regarding their future profession, a level not observed in peaceful years (category "Could not give a clear answer": 2022 – 8.1%; 2021 – 4%; 2020 and 2019 – 0%).

In 2023, the leading choices were Information Technology, Social and Behavioral Sciences, Law, Military Sciences, National Security, and Border Security (see Figure 16).

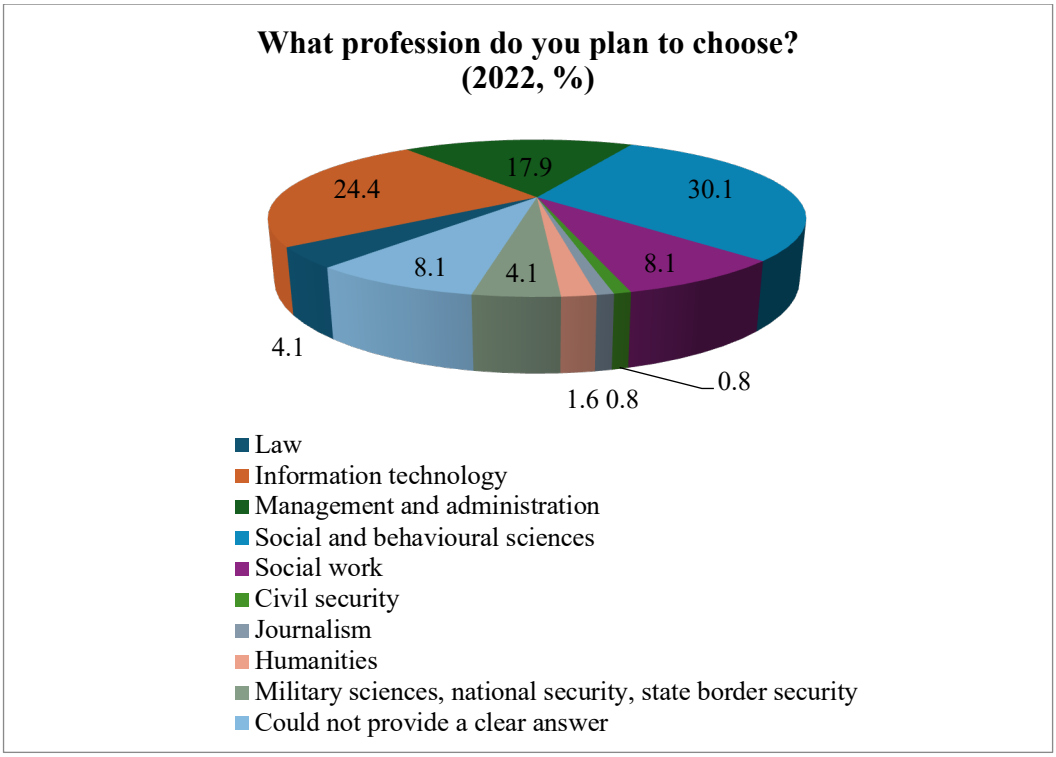

Figure 15. Results of respondents' answers to the question "What profession do you plan to choose?" (2022, %)
Source: compiled by the author

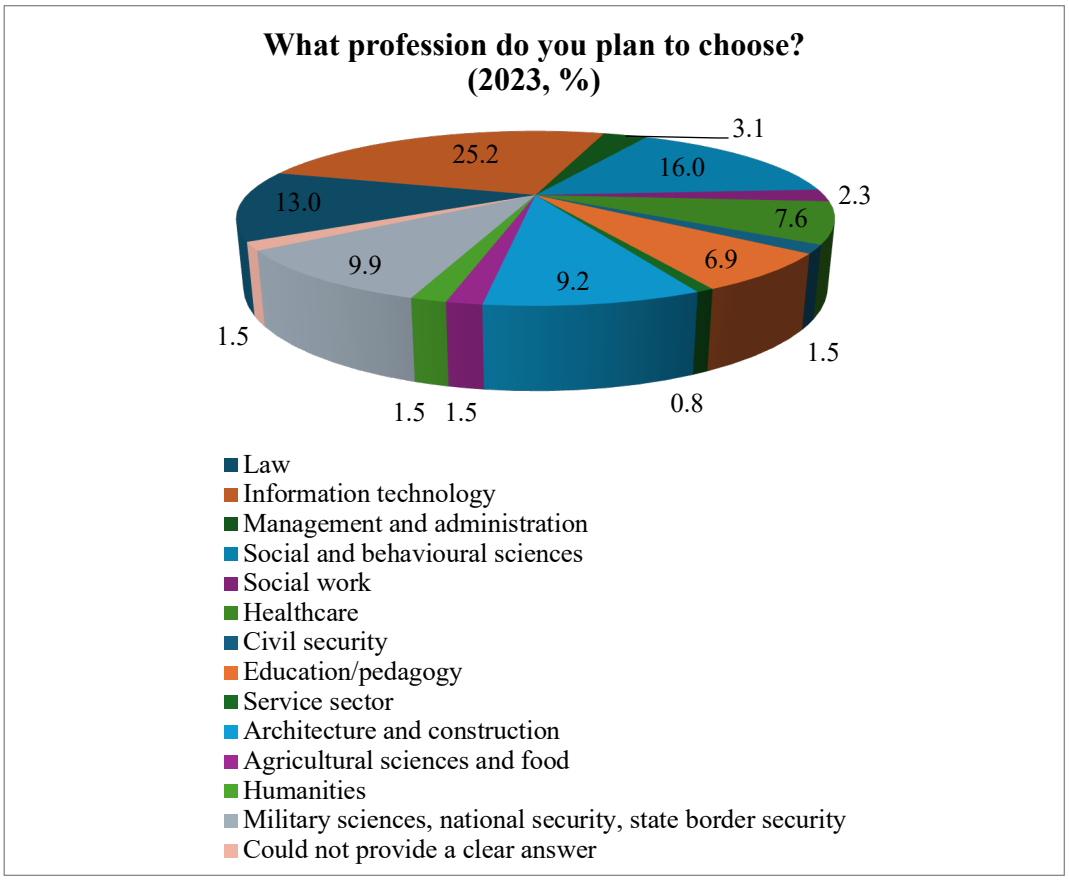

Figure 16. Results of respondents' answers to the question "What profession do you plan to choose?" (2023, %)
Source: compiled by the author

5. DISCUSSION

It is crucial to analyze the trends in responses to the questions: “In your opinion, what is the most lucrative profession today?” and “What profession do you plan to choose?”. Five of the most prioritized fields of knowledge were selected for this analysis.

According to respondents, Figure 17 shows an apparent decline in the profitability of legal professions, with some increase beginning in 2022. The peak profitability in Information Technology occurred in 2021, followed by a gradual decline. At the same time, Social and Behavioral Sciences show a gradual increase in profitability during this period.

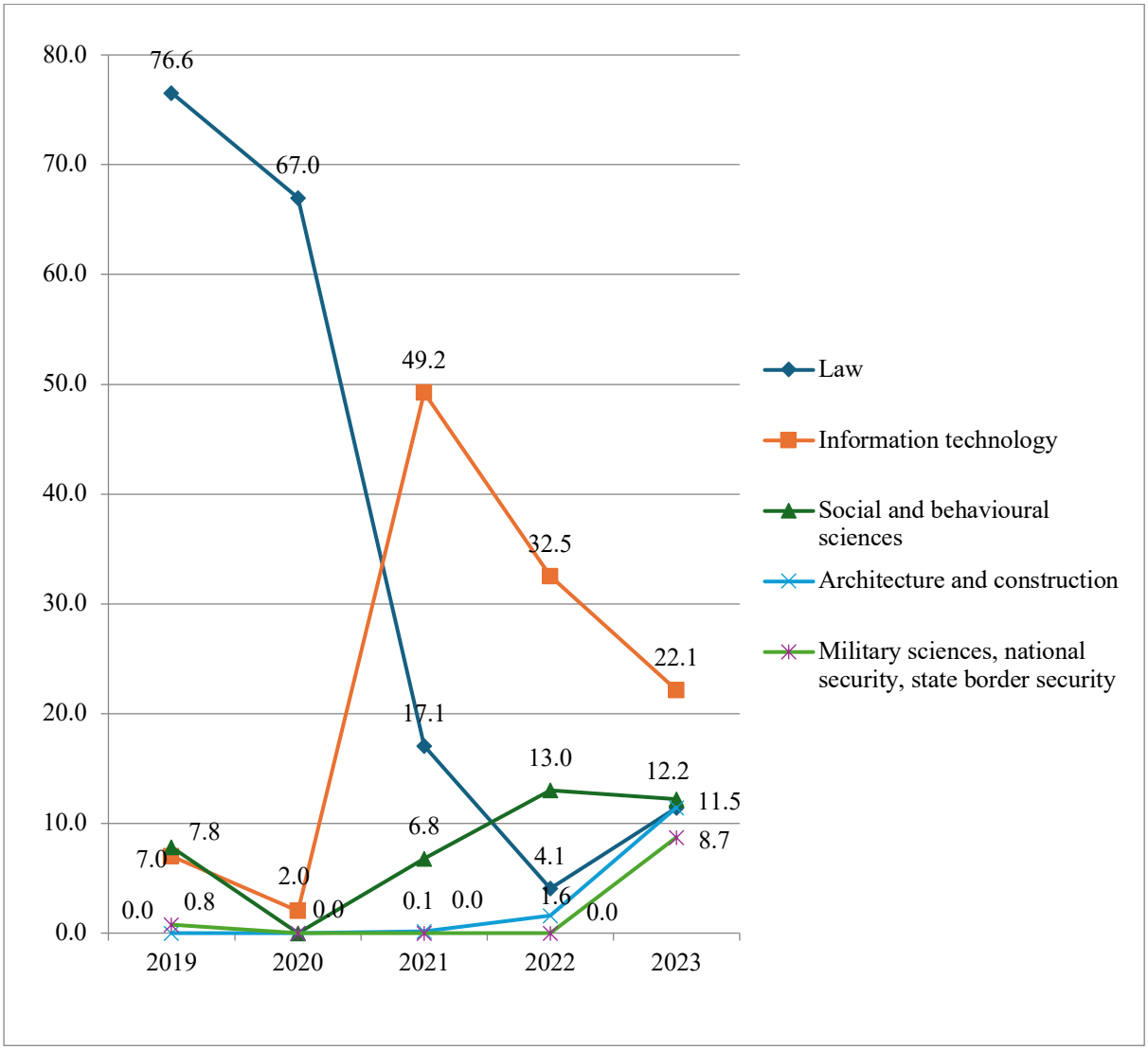

Figure 17. Trends in respondents' answers to the question “In your opinion, what is the most lucrative profession today?” (2019–2023, %)
Source: compiled by the author

The analysis of trends in responses to the question “What profession do you plan to choose?” also shows a decline in the priority of choosing professions in the field of Law, with some increase starting in 2022 (see Figure 18).

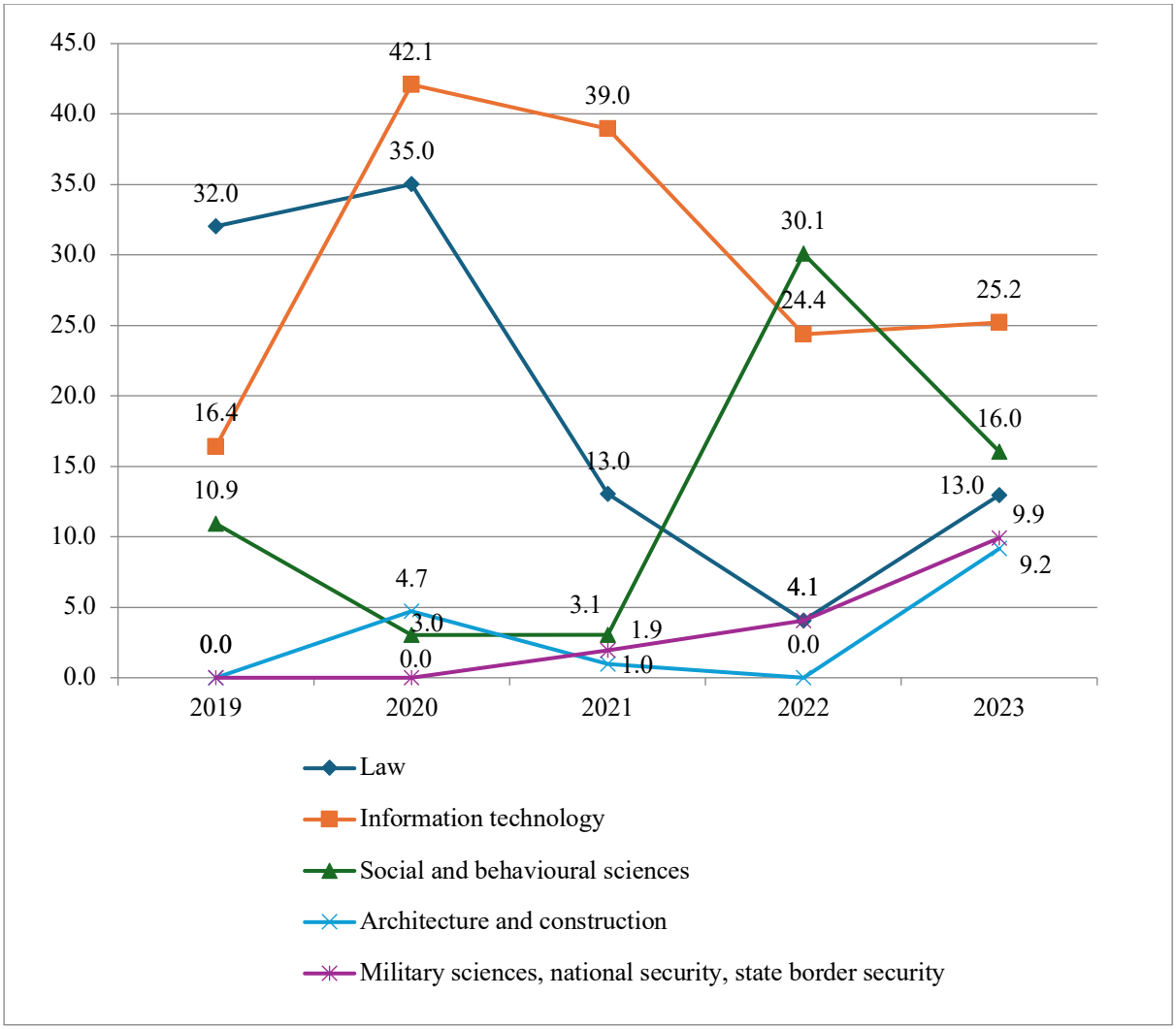

Figure 18. Trends in respondents' answers to the question "What profession do you plan to choose?" (2019–2023, %)
Source: compiled by the author

The choice of professions in Information Technology has remained relatively stable throughout the study period, with a gradual increase in the choice of professions in Architecture and Construction, Military Sciences, National Security, and Border Security.

It is crucial to compare and analyze the survey results on these two questions to see if the material aspect influences the choice of professions.

If we visually compare the graphs in Figures 17 and 18, we can see correlations in the graphs across all fields of knowledge.

For example, in the field of Law, the highest percentages for profitability and profession choice were in 2019 (76.6% and 32%, respectively), with the same trend observed in other years. In 2022, we see a match between profitability and profession choice (4.1%).

As for Information Technology, an exciting situation has emerged (see Table 4).

Table 4. Comparison of the Survey Results on Profitability and Planning of Choosing Professions in the Field of Knowledge Information Technology

Information technology	2019	2020	2021	2022	2023
Choice	16,4	42,1	39,0	24,4	25,2
Profitability	7,0	2,0	49,2	32,5	22,1

Source: compiled by the author

Despite the low profitability percentage in 2020 (2%), 42.1% of respondents still choose these professions. The years 2019–2020 are characterized by a rapid shift to online life and practical activities, meaning that practically all areas transitioned to Internet services. Therefore, adaptation processes among applicants responded to the changes in life, demonstrating quick adaptability to new realities and an understanding that this would be in demand despite the low profitability. Subsequently, we observe a clear connection between perceptions of profitability and the choice of professions in this field of knowledge.

A similar situation occurred in Social and Behavioral Sciences in 2022, but here we also see the impact of wartime. This rapid reorientation is associated with the influence of both external factors (war) and internal personal factors, such as the rise in patriotism and the desire to provide psychological help to those affected by the war.

6. CONCLUSION

The research provided information on how career choices are formed across various fields of knowledge, revealing both external and internal factors influencing these choices. It also revealed how the external environment impacts this critical decision, which essentially determines the future of every young person, and how adaptation processes function during such a choice.

Thus, the choice of a future profession is influenced by cognitive-creative (internal) and socio-economic and socio-political factors (external), including military events in the country. These factors include the desired level of remuneration; the social status provided by the profession; the material wealth of the applicant; their desire to participate in defining and shaping the future of the country; natural abilities, and the conditions in which their personality was formed; their environment, which contributed to their choice; and importantly, the level of awareness about the future profession, among others. Therefore, we see the involvement of both cognitive and purely material aspects of the applicant's personality in choosing a future profession during these challenging times for society, where the material aspect tends to prevail. However, the growing priority of professions in the fields of “Social and Behavioral Sciences”, “Architecture and Construction”, “Military Sciences, National Security, and Border Security” also shows the flourishing of ideological, patriotic judgments among young people and their orientation towards the external, social needs of the country.

The research showed that young people quickly adapt to adverse life changes, altering their future choices. Currently, professions in the following fields of knowledge are prioritized: “Information Technology”, “Law”, “Social and Behavioral Sciences”, “Architecture and Construction”, and “Military Sciences, National Security, and Border Security”.

Unfortunately, young people have overlooked highly demanded professions in Healthcare, Education/Pedagogy, and Agricultural Sciences and Food.

The aggressor country has irreparably damaged our peaceful lives, including human losses, colossal material damage, and the emigration of many potential applicants abroad, all of which have led to a shortage of personnel and specialists. Therefore, it is essential to orient young people towards in-demand professions; this is crucial career guidance work concerning teachers, parents, educational institutions, and others. In this direction, assistance from the state is needed first and foremost.

We believe future applicants should be familiarized with the following documents: the National Classifier of Ukraine “Classifier of Professions”, the Handbook of Qualification Characteristics of Occupations of Employees, and others. These documents provide the names and descriptions of professions in Ukraine. Familiarization with them will organize the information for future applicants, reducing the terminological confusion identified during the survey.

With the visual results showing the correlation between a profession's profitability and its choice planning, it is advisable to conduct a correlation analysis of the existing survey results. Further surveys of applicants in 2024 and 2025 regarding their career choice plans and implementation, expanding the range of questions to highlight external and internal factors in their choices, are of great interest.

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