

Tolerance to uncertainty as a factor in the development of higher education students' professional identity

A tolerância à incerteza como fator de desenvolvimento da identidade profissional dos estudantes do ensino superior

La tolerancia a la incertidumbre como factor de desarrollo de la identidad profesional de los estudiantes de enseñanza superior

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The study findings can be used to enhance pedagogical approaches in higher education. Understanding the process of professional identity formation can facilitate in creating effective training programs and teaching methods targeted at supporting students in their professional development.

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Career identity averages were found to be moderately high for both sexes, with numerical values approaching 5.50 for men and 5.40 for women. Future research may focus on expanding the understanding of factors influencing students' professional identity.

ABSTRACT

Background: The purpose of the article is to study how the higher education students' professional identity is formed and developed under the influence of uncertainty tolerance. **Methods.** The research used the testing method, namely Career Identity Scale, Individual Tolerance for Uncertainty Scale (IAS). The MSTAT Uncertainty Tolerance Scale was employed as a survey method, alongside statistical data processing techniques such as mean value, median, mode and Spearman's coefficient, Cronbach's coefficient, correlation and factor analyses. **Results.** Career identity averages were found to be moderately high for both sexes, with numerical values approaching 5.50 for men and 5.40 for women. According to the study findings, the majority of respondents (more than 50%) showed that they can cope with uncertainty, but they prefer to have some control over the situation. **Conclusions.** A statistically significant positive correlation was established between the tolerance to uncertainty scale (MSTAT) and the career identity scale, indicating that individuals with a higher level of uncertainty tolerance are more prone to possessing a clearer idea of their career. Future research may focus on expanding the understanding of factors influencing students' professional identity.

Keywords: uncertain environment; changes; higher education; students; career identity; vocational high education.

RESUMO

Enquadramento: O objetivo do artigo é estudar a formação e o desenvolvimento da identidade profissional dos estudantes do ensino superior sob a influência da tolerância à incerteza. **Métodos:** A investigação utilizou o método de teste, nomeadamente a Escala de Identidade de Carreira e a Escala de Tolerância Individual à Incerteza (IAS). A Escala de Tolerância à Incerteza MSTAT foi utilizada como método de inquérito, juntamente com técnicas de tratamento estatístico de dados, como o valor médio, a mediana, a moda e o coeficiente de Spearman, o coeficiente de Cronbach, a correlação e a análise fatorial. **Resultados:** As médias da identidade de carreira foram consideradas moderadamente elevadas para ambos os sexos, com valores numéricos próximos de 5,50 para os homens e 5,40 para as mulheres. De acordo com os resultados do estudo, a maioria dos inquiridos (mais de 50%) revelou ser capaz de lidar com a incerteza, mas preferiu ter algum controlo sobre a situação. **Conclusões:** Foi estabelecida uma correlação positiva estatisticamente significativa entre a escala de tolerância à incerteza (MSTAT) e a escala de identidade de carreira, indicando que os indivíduos com um nível mais elevado de tolerância à incerteza são mais propensos a ter uma ideia mais clara da sua carreira. A investigação futura pode centrar-se na expansão da compreensão dos factores que influenciam a identidade profissional dos estudantes.

Palavras-chave: ambiente incerto; mudanças; ensino superior; estudantes; identidade de carreira; ensino superior profissionalizante.

RESUMEN

Antecedentes: El propósito del artículo es estudiar cómo se forma y desarrolla la identidad profesional de los estudiantes de enseñanza superior bajo la influencia de la tolerancia a la incertidumbre. **Métodos:** La investigación utilizó el método de prueba, a saber, la Escala de Identidad Profesional y la Escala de Tolerancia Individual a la Incertidumbre (IAS). Se empleó la Escala de Tolerancia a la Incertidumbre MSTAT como método de encuesta, junto con técnicas de procesamiento estadístico de datos como el valor medio, la mediana, la moda y el coeficiente de Spearman, el coeficiente de Cronbach, la correlación y los análisis factoriales. **Resultados:** Las medias de la identidad profesional resultaron moderadamente altas para ambos sexos, con valores numéricos cercanos a 5,50 para los hombres y 5,40 para las mujeres. Según los resultados del estudio, la mayoría de los encuestados (más del 50%) mostraron que pueden hacer frente a la incertidumbre, pero prefieren tener cierto control sobre la situación. **Conclusiones:** Se estableció una correlación positiva estadísticamente significativa entre la escala de tolerancia a la incertidumbre (MSTAT) y la escala de identidad profesional, lo que indica que los individuos con un mayor nivel de tolerancia a la incertidumbre son más propensos a poseer una idea más clara de su carrera profesional. Las investigaciones futuras pueden centrarse en ampliar la comprensión de los factores que influyen en la identidad profesional de los estudiantes.

Palabras clave: entorno incierto; cambios; enseñanza superior; estudiantes; identidad profesional; formación profesional superior.

INTRODUCTION

Amid the ceaseless progression of technology, economics, and societal customs in today's world, uncertainty has become a ubiquitous presence, which is why the ability to adapt to it is so important for both personal growth and career success. Flexible professional skills such as creativity, innovation and the ability to work under uncertain conditions are becoming increasingly critical due to the continuous evolution of labor market requirements. Obtaining these competencies is of utmost significance in ensuring the seamless assimilation of young professionals into various areas of economic activity. By actively assimilating and comprehending these factors, the higher education students embark on a personalized career trajectory that aligns with their unique requirements and passions.

In recent decades, the term "uncertainty tolerance" has been of great interest to researchers in the field of pedagogy and psychology. The appeal to the concept of "uncertainty" today is explained by high social instability and uncertainty, which gives rise to increased requirements for higher education applicants. In their pursuit of homeostasis, an individual experiencing fear towards the unfamiliar, incomprehensible, new endeavors to avoid uncertain circumstances, including in the realm of future professional activities (Gromova, 2021).

Uncertainty as a lack of certainty, unambiguity can be examined in numerous situations: in everyday life, in interpersonal communication, in intergroup interaction, when solving problems of professional and educational activities, in decision-making situations. In interpersonal professional communication, uncertainty is associated with the utilized concepts' polysemanticity, the inconsistency of the information received through verbal and non-verbal channels (Zhylin et al., 2022). Ambiguity, the absence of clarity as regards the participants' role models due to the existing contradictions becomes a factor in the emergence of uncertainty. Uncertainty arises when undertaking professional tasks or navigating challenging life situations due to insufficient information, ambiguous performance criteria, and the probabilistic nature of the situation's evolution (Marchuk, 2023).

The success of professional self-identity in conditions of uncertainty is largely determined by the identity of ideas about the profession with the reality presented while acquiring a specialty. The attainment of a significant degree of proactive professional self-determination by students can be regarded as a benchmark for their professional and social maturation. Professional uncertainty indicates students' low performance and lack of independence in solving future professional tasks (Esteban-Guitart, 2021).

In an era marked by constant change and unpredictability, professional self-identity plays a crucial role in equipping individuals to navigate uncertainty (Zaverukha et al., 2022). For higher education students, developing a robust sense of professional identity not only enhances their adaptability but also fosters resilience in the face of ambiguous circumstances (Luzik et al., 2021). By cultivating this identity, students establish a pathway to meaningful personal and professional growth (Järvis et al., 2022).

A student's professional identity (PI) is a unity of ideas about oneself, emotional experiences and conscious activity associated with acquiring a profession, drawing on which emerges a sense of identity with oneself as a future specialist. The framework of beliefs regarding one's personal identity as a student involves the perception of oneself as a future expert (belonging to a certain professional group), about one's professional and educational-professional goals, about one's opportunities to realize these goals (Tsbulsky & Muchnik-Rozanov, 2023).

The research aims to investigate the process of professional identity formation and development, with a particular emphasis on higher education students. It includes an understanding of how identity is perceived and constructed in the context of career choice, educational environment, and sociocultural influences. The study focuses on identifying elements that impact professional identity creation, such as education, professional practices, and social and cultural influences.

The research problem lies in the complex and multifaceted nature of shaping professional identity. understanding the interaction of various factors that influence identity. Its solution entails comprehending the interplay of diverse elements that impact one's identity, such as personal characteristics, educational environment, cultural attitudes, gender or ethnic factors. In addition, identity is a dynamic concept, which makes it difficult to study and understand. It is also important to take into account possible contradictions in the formation of professional identity in different cultural, social and economic contexts. Furthermore, the notion of identity is dynamic and multifaceted, rendering it difficult to investigate and comprehend. It is equally crucial to consider potential contradictions that may arise in shaping one's professional identity across diverse cultural, societal, and financial contexts.

The purpose of the article is to explore and analyze the process of higher education students' formation and development of the professional identity under the influence of uncertainty tolerance.

Tasks/questions

1. Study of the formation of students' professional identity.
2. Study of students' tolerance to uncertainty.
3. Assessing the convergent validity of the MSTAT Uncertainty Tolerance Scale questionnaire.
4. Correlation analysis between the formation of professional identity and tolerance to uncertainty and the identification of statistically significant indicators.

LITERATURE REVIEW

The examination of preceding research holds significant value as it facilitates the broadening of knowledge pertaining to previous investigations and theoretical frameworks concerning professional identity. This practice enables identification of scientific knowledge gaps, key concepts and theories that have been previously examined, as well as potential avenues for further exploration. Analyzing prior studies establishes a theoretical base for the work, assists in selecting appropriate methodology and techniques in line with research objectives, and validates the significance of the chosen topic.

In his work, Sozoniuk (2020) investigates the influence of personal maturity on shaping professional identity in future teachers. The researcher determined that the development of personal maturity is a key factor in shaping teacher's identity. The author points out that maturity is manifested in the individual's ability to independently solve problems, to effectively interact with their environment and a responsible attitude to professional tasks.

As Zarudenets (2023) notes in his doctoral dissertation, the issue of higher education students' personal maturity is related to professional identity. He investigates how personal maturity affects the educational process and students' professional development. The researcher analyzes the relationship between the students' maturity level and their educational achievements, as well as the capacity for self-actualization in the educational environment.

According to Gura's research (2023), tolerance to uncertainty is decisive in the decision-making process and stress adaptation of business leaders. Accordingly, the above scholar notes this factor's influence on the managerial activities' success and managers' ability of managers to effectively cope with stress and uncertainty in the business environment. The researcher's work significantly enhances the comprehension of uncertainty in contemporary scientific discourse.

A study conducted by Stephens et al. (2021) aimed to explore the effect of education on tolerance for uncertainty in medical students. To that end, the researchers used a qualitative long-term approach. The authors examined how education affects medical students' ability to withstand uncertainty in the process of learning and practice. The research findings are useful for the development of pedagogical strategies to enhance tolerance to uncertainty in future health workers.

An article by Liyanage et al. (2021) He emphasizes the significance of critical thinking in global tertiary education and reveals the uncertainties associated with this issue. The authors analyze the level of students' critical thinking students in international educational programs and identify factors that facilitate or hinder this skill's development. The findings hold significant practical implications for enhancing educational curricula and methodologies in the higher education worldwide.

Arbona et al. (2021) elucidate the correlation between tolerance for ambiguity and career-related apprehension. They put forward a conceptual framework that expounds on how uncertainty can instigate anxiety, consequently impeding career progress. The above results can be used to develop interventions aimed at supporting students in their career decision-making process.

Furthermore, Long and Tien (2024) analyze the influence of college students' vocational principles and identity on scholarly involvement in China. The authors study what relationships between professional values and students' identity affect their level of interest and activity in the educational process. The obtained data help to develop strategies for supporting active educational activities among students.

An article by Olszewski (2024) The author scrutinizes the matter of upholding ethical professionalism within the mental health sector. With a focus on ethical considerations in professional practice, the researcher formulates suggestions for upholding elevated ethical norms in this field. Olszewski's article may be useful for mental health practitioners and students studying ethics in this context.

Accordingly, a research conducted by Skinner et al. (2021) delves into the ramifications of managerialism on the professional identity and well-being of educators in the United Kingdom. The authors scrutinize the correlation between managerialism and teachers' sense of self as professionals, which has an impact on their emotional and psychological

stability. The results of this study can help identify ways to support teachers' psychological well-being in modern educational system.

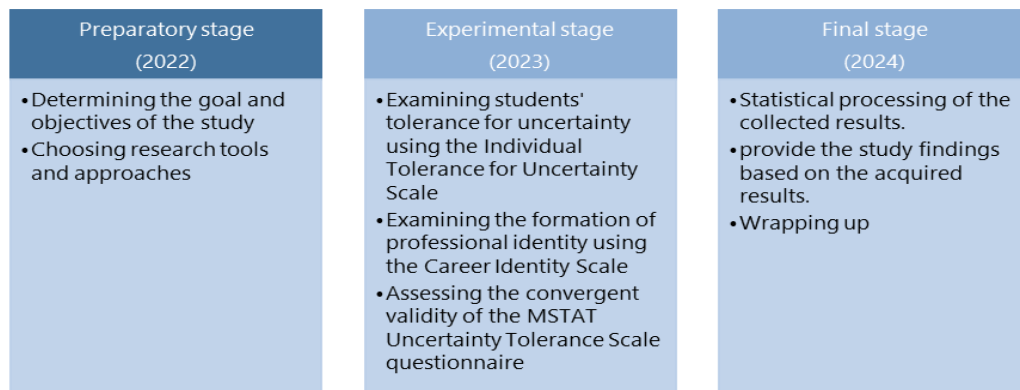
In his scholarly article, Engeness (2021) delves into the evolution of teachers' digital identities and presents a set of pedagogical design principles for digital environments aimed at enhancing student learning in the contemporary era. The author investigates how creating digital learning environments might help instructors cultivate their professional identities while also improving educational quality in schools and higher education institutions.

Among the insufficiently explored issues pertaining to professional identity, there are several noteworthy aspects. These comprise of the impact of diverse pedagogical approaches on teachers' identity formation, idiosyncrasies in the development of professional identity among educators from various subject areas, exploration into the correlation between professional identity and educational process quality, as well as analysis of sociocultural factors that influence teacher's professional identity formation across different countries as well as cultural environments.

METHODS

The null hypothesis of the study was the statement (H_0) that a high level of uncertainty tolerance does not contribute to higher education students' professional identity. Instead, the alternative hypothesis (H_1) claims that a high level of tolerance for uncertainty contributes to the professional identity of higher education students. To evaluate the validity of the assumptions, a research was undertaken in different stages, as shown in Figure 1.

Figure 1. Stages of the studying the impact of tolerance to uncertainty on the formation higher education students' professional identity.



Source: Compiled by the authors

In the course of non-experimental applied research, utilizing quantitative methodologies enabled exploring the correlation between the concepts outlined in the current article. The analysis was conducted over a period of one year and was characterized by its analytical nature. Moreover, it should be noted that this study adopted a cross-sectional design, which involved data collection at one point in time.

Participants

The study's demographic focus is on the younger generation pursuing higher education. The sample consists of 240 respondents, evenly distributed between 18-24-year-old males and females ($n=120$ each). Participants were drawn from a diverse range of regions across Ukraine, encompassing urban, suburban, and rural areas, thereby ensuring a broad spectrum of perspectives. The sample includes students enrolled in undergraduate programs spanning the humanities, sciences, and engineering, providing a comprehensive representation of the higher education student population. This detailed sociodemographic profile aligns with the reconnaissance plan and the study's empirical objectives, guaranteeing a representative and relevant sample. The research adhered to rigorous methodological standards, ensuring professionalism and academic integrity. All participants provided informed consent for the use of their data and the publication of findings. Data collection and analysis were conducted in a manner that respected the principles of non-discrimination and impartiality.

Instruments

The poll was conducted using Google Forms capabilities. Data input and processing were done with the applications "Microsoft Excel" and "SPSS Statistics 18.0". All data are presented in relative terms (% of the number of respondents).

Data collection

1. *Career identity scale.* A three-item scale was employed to assess career identity. The scale was based on London

(1993) and Noe et al. (1990). Participants were asked to score their degree of agreement with each statement on a seven-point scale, from strongly disagree (1) to strongly agree (7). One of the provided statements went like this: "I am very much engaged in my work."

2. *Scale of individual tolerance to uncertainty (Intolerance of Ambiguity Scale, IAS)*, developed by Budner (1962) was used in the study. This questionnaire is one of the most common tools for assessing the level of tolerance for uncertainty. It consists of 15 statements with which respondents agree or disagree. Students were offered 15 statements to which they had to give answers in the format "agree" or "disagree". The tool made it possible to quantitatively measure the level of tolerance to uncertainty in the sample and conduct a further analysis of the relationship between this indicator and other variables under study. The results of this analysis made it possible to understand how uncertainty tolerance affects various aspects of the respondents' life and professional activities.

3. To assess questionnaire's convergent validity, the study utilized the MSTAT uncertainty tolerance scale (Measure of Tolerance for Uncertainty), developed by McLean (1994). The above scale measures the degree to which an individual experiences stress or anxiety in uncertain situations. Respondents were asked to complete the MSTAT questionnaire, which consisted of a series of questions aimed at assessing their tolerance for uncertainty. This made it possible to establish a relationship between tolerance to uncertainty, measured by the MSTAT, and other psychological aspects under investigation, which confirms the convergent validity of the instrument used.

Data Analysis

1. *Correlation analysis*. This approach is used to identify the nature of the connections between two or more variables. Using this approach, the relationship between teens' socialization in the setting of a military war and virtual spaces was investigated. Statistical data processing techniques were also applied, namely the average, median, and mode values.
2. A statistical technique for examining correlations between variables is *factor analysis via the method of maximum variations*, which enables the grouping of variables into factors and a reduction in the total number of variables. In the social sciences, medical, biology, and other disciplines, this approach is frequently employed. Which variables in a data collection represent the greatest amount of variance is determined using the maximum variations approach. *Spearman's coefficient*, which is determined by the formula:

$$P = \frac{6 \sum d_i^2}{n(n^2-1)} \quad (1)$$

where d represents the variation in each observation's rank between two variables.

3. **The Cronbach's alpha method** can be used to analyze the questionnaire's reliability. The Alpha-Cronbach's coefficient is calculated by the formula:

$$\frac{N}{N-1} \left(\frac{\sigma_x^2 - \sum_{i=1}^N \sigma_{\bar{y}_i}^2}{\sigma_x^2} \right) \quad (2)$$

where σ_x^2 – score dispersion of the whole test;

$\sigma_{\bar{y}_i}^2$ – variance of element i . Values in the range of 0.7-0.8 are considered satisfactory.

RESULTS AND DISCUSSION

At the onset of the project, a thorough investigation into professional identity was conducted utilizing the Career Identity Scale. The difference in the formation of professional identity between men and women was also investigated in order to exclude the gender factor. The results are presented in Table 1.

Table 1. Study of professional identity using the Career Identity Scale of higher education students

Statement	Men (%)	Women (%)	p-value (T-test)
I am very much engaged in my work	80%	82%	0.354
I know what I want to achieve in my career	75%	78%	0.123
I have a clear idea of my career path	65%	68%	0.245
Average value	5.43	5.38	0.345
Median	5.50	5.40	0.212
Standard deviation	0.81	0.78	0.456

Source: Compiled by the authors

It can be concluded from the data in the table that there is no statistically significant difference between the professional identification levels of the men and women in the study group. The mean, median, and standard deviation are similar in both groups, and the p-value indicates that the difference between sex groups is not statistically significant. The average level of career identity for both genders is moderately high, with values close to 5.50 for men and 5.40 for women. This indicates that the majority of participants exhibit a degree of enthusiasm towards their occupation and have a clear idea about their career. The majority of respondents (more than 60%) revealed that they have a clear idea of their career and are confident in their abilities to achieve their career goals. This validates the elevated degree of career identity within the cohort of study subjects.

As a result, the study's findings show that there is no statistically significant difference in the sample between men and women's levels of career identification, and the majority of participants had a good outlook on their careers and a clear understanding of their professional objectives. Thus, in the future, the obtained data on the influence of tolerance to uncertainty on professional identity formation is envisaged as valid and reliable.

The next step of the research was to study uncertainty tolerance. For this purpose, the Scale of Individual Tolerance for Uncertainty (IAS) was used. The results of the study are presented in Table 2.

Table 2. Results of the scale of individual tolerance for uncertainty (IAS)

	Men (n = 120)	Women (n = 120)	p-value (Spearman coefficient)
Average value	5.43	5.38	0.345
Median	5.50	5.40	0.212
Standard deviation	0.81	0.78	0.456

Source: Compiled by the authors

Based on the data presented in the table, it can be inferred that there is no statistically significant difference between the levels of tolerance for uncertainty in men and women in this sample. Mean, median, and standard deviation values are similar for both groups, and the p-value (Spearman's coefficient) confirms the absence of statistically significant differences. The average level of uncertainty tolerance for both sexes is moderately high. This shows that the majority of respondents do not feel much discomfort in unclear situations and can cope with them. The majority of respondents (more than 60%) agreed or strongly agreed with the statements indicating their ability to adapt to uncertainty and lack of anxiety in such situations. The results of the study confirm the high level of tolerance for uncertainty in the sample and the absence of statistically significant differences in this parameter between men and women. The MSTAT uncertainty tolerance scale was also applied. The obtained results are presented in Table 3.

Table 3. Results of the uncertainty tolerance scale MSTAT

Question	Average value	Per cent
1. I don't like situations where I don't know what to expect.	4.3	53.8%
2. I like knowing that everything will go according to plan.	4.2	52.5%
3. I feel uncomfortable when I can't control a situation.	4.1	51.3%
4. I like new and unpredictable situations.	3.9	48.8%
5. I easily adapt to changes.	3.8	47.5%
6. I'm not afraid to take risks.	3.7	46.3%
7. I'll know better what I want when I get more information.	3.6	45.0%
8. I don't like being asked questions I don't know the answer to.	3.5	43.8%
9. I like to challenge myself.	3.4	42.5%
10. I don't like it when things don't go according to plan.	3.3	41.3%

Source: Compiled by the authors

The information in the table suggests that the sample's average degree of uncertainty tolerance is moderate, meaning that while most respondents experience some discomfort in ambiguous circumstances, they are also able to manage them. The majority of respondents (more than 50%) found that they are able to cope with uncertainty, but they prefer to have some control over the situation. Correlation matrix between MSTAT and IAS presented in Table 4.

Analyzing the correlation matrix table, several relationships were revealed. In particular, it was observed that respondents with a higher tolerance for uncertainty on the MSTAT scale are more likely to have less anxiety and better adapt to new situations. Furthermore, it was found that there was a certain inverse relationship between tolerance for uncertainty on the MSTAT scale and the IAS scale: respondents with higher scores on the MSTAT showed a lower level of tolerance for uncertainty on the IAS. However, no statistically significant relationships were found between tolerance for uncertainty and gender or age. Table 5 presents results of the factor analysis.

Table 4. Correlation matrix between MSTAT and IAS

Changeable	MSTAT	IAS	Sex	Age	Anxiety	Adaptation
MSTAT	1.00	-0.32**	0.15	-0.08	0.27**	0.31**
IAS	-0.32**	1.00	-0.09	0.06	-0.21**	-0.24**
Sex	0.15	-0.09	1.00	-0.03	0.04	0.02
Age	-0.08	0.06	-0.03	1.00	-0.07	0.01
Anxiety	0.27**	-0.21**	0.04	-0.07	1.00	-0.48**
Adaptation	0.31**	-0.24**	0.02	0.01	-0.48**	1.00

Source: Compiled by the authors

Table 5. Results of comparing the factor structure of MSTAT and IAS

Factor	MSTAT	IAS
Factor 1: Risk-taking	0.78	0.65
Factor 2: Control	0.63	0.52
Factor 3: Adaptation	0.51	0.48

Source: Compiled by the authors

During the analysis of the MSTAT and IAS scales' factor structure, the following was established. The factor structure of both scales is quite similar. Each of them includes three main factors. The first factor, which is related to risk-taking, is described by indicators of propensity to new and unpredictable situations, willingness to take risks and lack of fear of possible failure. The second factor related to control is characterized by the desire to control the situation, the intolerance of uncertainty and the desire for everything to go according to agenda. The third factor describing adaptation is characterized by the ability to easily adapt to new circumstances, flexibility and resistance to change. Correlation between the MSTAT total score and the Career Identity Scale is presented in Table 6.

Table 6. Correlation matrix between MSTAT total score and Career Identity Scale

Variable	MSTAT	Career identity scale	Sex	Age	Anxiety	Adaptation
MSTAT	1.00	0.21**	0.15	-0.08	0.27**	0.31**
Career identity scale	0.21**	1.00	0.07	0.12	-0.18**	0.24**
Sex	0.15	0.07	1.00	-0.03	0.04	0.02
Age	-0.08	0.12	-0.03	1.00	-0.07	0.01
Anxiety	0.27**	-0.18**	0.04	-0.07	1.00	-0.48**
Adaptation	0.31**	0.24**	0.02	0.01	-0.48**	1.00

Source: Compiled by the authors

A statistically significant positive correlation was found between the MSTAT and the Career Identity Scale, indicating that people with a higher level of tolerance for uncertainty are more likely to have a clearer idea of their career. A statistically significant positive correlation was also found between MSTAT and adaptation, which means that people with a higher level of tolerance for uncertainty are better able to adapt to new situations. Anxiety level and MSTAT were shown to be negatively correlated statistically, indicating that those with greater levels of uncertainty tolerance have lower anxiety. Nevertheless, there was no statistically significant association discovered between age or gender and MSTAT. As a result, the hypothesis H1, that a high degree of tolerance for uncertainty contributes to higher education students' professional identity, was supported and the null hypothesis was rejected.

Discussion

The research conducted by Artemov and Syngaivska (2022) underscores the significance of cultivating a tolerance for ambiguity in contemporary society. This capacity facilitates more seamless adaptation to shifting circumstances and enables the successful resolution of intricate challenges. In particular, a high level of tolerance for uncertainty is associated with the ability to better adapt to new situations and risks. According to the authors, individuals usually demonstrate greater flexibility in decision-making and adapt more quickly to changes in the environment.

Moreover, as reported by Sagone and Indiana (2022) and Reis-Dennis et al. (2021), people with high tolerance for uncertainty may be less vulnerable to stress and anxiety. They often feel confident in themselves and their abilities in difficult situations. Such qualities are important in both professional and personal life, as they enable achieving greater success and cope with life difficulties. The cultivation of tolerance for uncertainty ought to be regarded as a crucial element of both personal and vocational advancement, enabling one to adjust to a constantly changing world.

An opposite perspective, as expounded by Benade (2021) and Banegas (2023), posits that an overabundance of tolerance towards uncertainty can yield adverse outcomes. Researchers believe that too high a level of tolerance can lead to the abandonment of important principles and values, make a person indifferent to risk and possible dangers, and also lead to irresponsibility in decision-making. Researchers indicate that individuals with an excessive tolerance for uncertainty may show insufficient prudence in financial affairs or risk management, which can result in grave financial problems.

Furthermore, it is believed that too much tolerance for uncertainty can lead to a loss of motivation and persistence in achieving goals, as stated in the study of Banegas et al. (2022). Individuals who are too comfortable with uncertainty may not feel enough pressure to succeed, which can lead to stagnation in professional or personal development.

Insights yielded by Tomlinson and Jackson (2021) and Banegas et al. (2022) show that there is a certain relationship between the level of tolerance for uncertainty and the formation of students' professional identity. In the contemporary educational landscape, marked by swift transformations and unforeseen challenges, an inclination towards uncertainty can prove to be a crucial element in molding the learners' prospective occupational trajectory.

As stated by Banegas et al. (2022), students with a high level of tolerance for uncertainty are open to new ideas and can easily adapt to changes in the learning environment and workplace. They may be more inclined to take advantage of opportunities to advance their careers because they are not afraid of uncertainty or risk. Students with a high tolerance for uncertainty may be more confident in their professional abilities and have a clearer idea of their career goals. Consequently, this can contribute to the development of their professional identity and have a favorable impact on their achievements in the selected area of professional endeavor.

Today, Ukraine faces significant social, economic, and political challenges. These turbulent times necessitate a high level of tolerance for uncertainty, especially for young professionals. As Korobka (2024) argues, the ongoing war, labor market instability, and rapid societal changes create a complex environment where individuals must make decisions with limited information and adapt quickly to new circumstances.

Research by Trofimov and Zabolotna (2023) suggests that cultivating tolerance for uncertainty in higher education institutions can foster adaptability and resilience among students. This ability to navigate ambiguity is crucial for successful professional adaptation, enabling graduates to not only cope with challenges but also leverage them for personal and career growth. Luzik et al. (2023) further emphasize the role of tolerance for uncertainty in reducing anxiety and promoting psychological well-being in the face of constant change. In contrast, Ponomarenko et al. (2024) prioritize professional competencies over tolerance for change in their understanding of professional adaptation.

The theoretical implications of the study are to expand the understanding of the relationship between uncertainty tolerance, professional identity, and psychological factors (Bidzilya et al., 2022). The identified correlations between these constructs help in deepening our understanding of how the level of tolerance to uncertainty can influence career development and the psychological state of an individual.

The practical implications of the research can be useful for various spheres of life, in particular for psychological practice, personnel management and education. For instance, in light of the acquired outcomes, training courses could be developed to enhance uncertainty tolerance and support professional development. In addition, managers and leaders can take this data into account when building teams and making management decisions, which can positively affect productivity and staff satisfaction.

The study's limitations warrant consideration as they may impede the validity and generalizability of its findings. The primary constraint is rooted in the analysis, which exclusively relies on self-report data that could potentially lack precision. In this light, there is a possibility that respondents provide information that does not reflect their real feelings and real situations. This can distort the analysis and lead to inaccurate conclusions. A second limitation is that the study does not account for other potential factors that may also affect uncertainty tolerance. In shaping such tolerance, personality, cultural factors, and level of experience may be essential.

CONCLUSIONS

The collected study findings and conclusions validate the study's usefulness. Given the current state of society and the job market, which is marked by volatility and fast change, the capacity to adjust to uncertainty becomes an essential skill for a successful career. The study findings confirm that students with a high level of tolerance for uncertainty have a clearer idea of their career goals; they exhibit greater assurance in their vocational proficiencies and display enhanced flexibility when confronted with novel circumstances. Moreover, they testify that tolerance to uncertainty can influence the formation of students' professional identity and determine their success in future careers.

The study findings can be used to enhance pedagogical approaches in higher education. Understanding the process of professional identity formation can facilitate in creating effective training programs and teaching methods targeted at supporting students in their professional development. In order to analyze the dynamics of changes and identify the variables that influence this process at various phases of life, future study might concentrate on examining the process of professional identity creation over an extended period of time.

Future research could delve deeper into the development of professional identity and tolerance for uncertainty through longitudinal studies that track students' progress over time. Such research could investigate how these traits evolve in response to changing social, economic, and cultural conditions. Qualitative methods, such as in-depth interviews and ethnographic studies, could provide valuable insights into individual experiences and the nuanced influence of local contexts.

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B. data research and statistical analysis:	20%	20%	20%	20%	20%
C. elaboration of figures and tables:	20%	20%	20%	20%	20%
D. drafting, reviewing and writing of the text:	20%	20%	20%	20%	20%
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