

***Modern world: methods of soft and hard skills development
for the managers to be successful***

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Abstract: This study aims to establish and identify a clear list of skills that ensure success in the professional activities of a manager, particularly a public servant, in the modern world of a developing country (Ukraine). In the modern world, traditional approaches to achieving success in job tasks, especially in the field of management, are no longer effective and according to the results of the literature analysis, success is determined not by hard skills but by soft skills. To achieve the goal, three hypotheses were proposed. The skills of a hundred managers (officials of local governments in the western, northern, and central regions of Ukraine, as well as representatives of businesses in the same regions, particularly managers of private enterprises) and the effectiveness of their work over the year were assessed using empirical and Delphi methods, emotional intelligence was assessed using the Hall method, the anxiety level was evaluated through GAD-7 testing. It was determined that the third hypothesis is accurate: for success in the modern world, 7 soft skills and 2 hard skills are important.

Keywords: anxiety, emotional intelligence, development, hard skills, soft skills, civil servants, success, manager, BANI (modern) world.

JEL Classification: M12, M19

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Introduction

Nowadays, effective and efficient task fulfillment of the managers at various levels is the fundamental for achieving high results of the organizations' activities. Due to the recent Covid-19 pandemic, and now a full-scale military invasion of Ukraine, the world has changed significantly – from the VUCA world to the BANI (modern) world.

If the VUCA world (V - volatility, U - uncertainty, C - complexity, A - ambiguity) was unstable, unpredictable, filled with interconnected elements, and lacked a clear understanding of the rules, then the BANI (modern) world has become:

- brittle, capable of collapsing at any moment, exemplifying a non-linear dynamic where the former complexity has transformed into an unpredictability and diversity that extends beyond rational comprehension;
- anxious, inducing fear of choice, uncertainty, passivity due to the bombardment with negative news and fake information in social media and mass media;
- non-linear, signifying that events and outcomes in the BANI (modern) world do not follow a straightforward, predictable path, making cause and effect relationships difficult to discern;
- incomprehensible, as the pace of change in the BANI (modern) world is so high that it becomes increasingly difficult for individuals to comprehend new information.

This is why, established approaches to ensuring success are no longer effective, and it is necessary to seek new ways to achieve it. That is why this has become the subject of research.

1. Literature review

Based on the analysis of literary sources, it was determined that the main works on the formation of the skills of successful managers in the BANI (modern) world are the writings of a number of business experts (Aleksandrova et al., 2023; Sokil et al., 2022; Lušňáková et al., 2020; Heerden et al., 2023; Obermayer et al., 2023; Shpak et al., 2023; Campos & Pinto, 2023; Abu Asabeh et al., 2023). In the BANI (modern) world, the causes are not unambiguous enough or seem meaningless, therefore, it is quite difficult to understand the consequences (Podolchak et al., 2022; Sokil et al., 2022; Shpak et al., 2022; Samusevych et al., 2022; Aleksandrova et al., 2023; Lušňáková et al., 2020; Heerden et al., 2023; Obermayer et al., 2023; Shpak et al., 2023; Campos & Pinto, 2023; Abu Asabeh et al., 2023; Taleb 2021; Taleb, Goldstein, 2012; Kmecová & Androniceanu, 2024).

The competences underlying the soft skills necessary in the VUCA world for the success of the leaders who set the strategic direction of the development of organizations according to Bob Johansen's VUCA Prime Concept, which he called the behavioral leadership model, are unfortunately insufficient in the BANI (world) world (Johansen, 2007). In particular, this is about:

- adaptability: leaders are to be ready for rapid changes and make decisions based on necessity;

- reactivity: leaders have to react to unforeseen events and situations;
- innovativeness: leaders should be able to create new ideas and develop new approaches to solving problems;
- cooperation: leaders ought to be able to cooperate with others, find a common language with colleagues and partners;
- ability to learn: leaders are to be ready for constant learning and development, as the VUCA world is constantly changing;
- flexibility: leaders should be flexible and able to adapt to changing conditions;
- readiness for risk: leaders have to be ready for risk and be able to manage it.

The components that provided timely response and foresight for VUCA leaders, all of whom had managerial experience, are:

- the probability of the manifestation of turbulent processes in the activities of organizations;
- the size and amplitude of the chaotic changes in a certain time interval;
- the aggressiveness of the manifestation of turbulent processes;
- the degree of impact of turbulent processes on the invariance of organizations' activities (Podolchak et al., 2022).

As part of the response to the Covid-19 pandemic, researchers have proposed a model that utilizes ordinal logistic regression to examine the relationship between professional success, specific soft skills, and the pandemic's impact on this matter. Key elements of the pandemic, particularly evident in explaining perceived professional success, include the speed of its spread and disruption of work routines. The most crucial soft skills identified for professionals and trainees were in the areas of oral communication, self-management, and technical/digital skills (Androniceanu & Georgescu, 2023; Androniceanu et al, 2023). A drawback was the absence of personnel gradation by directions (Da Silva Araújo, Ribeiro Mello, 2023). John Stenger and Mauricio Luna are among those worth mentioning, they note that in the BANI (modern) world, managers must be ready for continuous change and adaptation to new situations (Stenger, Luna, 2021). Besides, according to Accenture research, in the BANI (modern) world, managers have to be prepared to effectively communicate and collaborate with teams where there is a constant member flow, as well as to be able to create and maintain strong interpersonal relationships (Daugherty, 2019). Thus, in the BANI (modern) world, managers should be prepared for risk, work with uncertainty, and change approaches to the strategy depending on the situation. They are to be flexible and adaptable to meet new challenges and opportunities. The fragility of the BANI (modern) world, its anxiety, non-linearity and incomprehensibility cause the top managers and public administration employees to be in constant and not situational stress. Every second the threat of crises and the lack of a proven algorithm for responding to these crises significantly increase the level of stress. Simple empathy of the managers is no longer enough to rally the team to achieve the set goal. With the destruction of the established systems and the constant fear of losing opportunities or choosing the wrong answers in an unpredictable situation against the background of stress, the ability to feel can significantly decrease. Therefore, to counter the challenges in the BANI (modern)

world, managers should have a sufficient level of emotional intelligence that helps build a successful career, be productive, unite the team and stay motivated (Chursinova, Stebelska, 2021).

In their work, Babak Yazdani and Mehrdad Hosseini Zadeh (Yazdani, Zadeh, 2021) considered the relationship between the leaders' authenticity, psychological capital and resilience, as well as their role in the formation of leadership competencies for effective management in a complex and uncertain situation. Notably, they concluded that authenticity, psychological capital, and resilience are important antecedents of leadership effectiveness that enable leaders to operate effectively in a VUCA world. These skills, according to the authors, helped the leaders in the VUCA world to make more solid decisions and reduce risks in conditions of uncertainty, complexity, instability and ambiguity.

The main determinants of successful managers in the VUCA world were outlined by the following factors.

1. A high level of stress resistance, timely understanding and awareness of changes, as well as the pace of adaptation, decision-making and proactive change management to counteract variability (Henning, 2019).
2. A high level of forecasting the direction of the development of the situation and the skills of developing backup scenarios, predicting the behavior of the personnel in difficult conditions, the ability to make the right decisions with insufficient information and react to weak signals of the development of events for the sake of counteracting unpredictability (Taleb, Goldstein, 2012).
3. The ability to prioritize project solutions over the process ones, to work in a team, to think critically, to assess risks, to generate completely non-standard solutions of complex problems and to find simple solutions to complex problems to counter complexity (Tallon, 2008).
4. Developed expert skills and intuition; the ability to find additional information and conduct constant monitoring, develop and implement innovations – as to prevent ambiguity (Remnova, 2019).

The set of behavioral traits of an effective manager in the VUCA world was as follows: a clear focus of actions and unification of the personnel, the belief in the success and potential of the team, skillful combination of short-term and long-term planning; empathy, the ability to cooperate, generating of new ideas, the cut off of the superfluous, critical thinking and analysis, decisiveness, courage, flexibility, tolerance, innovation, constant development, communication improvement and the ability to delegate authority and set a creative atmosphere for development (Bennett, Lemoine, 2014; Kuckertz, Bernhard, 2023).

To develop these skills, it is suggested to focus on the development of adaptability, innovation, collaboration and solving complex problems (Coopersmith, 2022). For this purpose, the authors recommend using learning methods that include interactivity, cooperation and interaction between the program participants. In addition, the authors believe that successful leadership development requires a combination of different approaches and methods, such as training, mentoring, and collaboration with speakers and leadership consultants. It is of vital importance to

develop these skills continuously, because the requirements for leaders in the VUCA world are constantly changing.

Taking into account existing scientific research, three hypotheses regarding the success of managers in public administration in the modern world have been formulated. The first hypothesis posits that success depends solely on soft skills. The second hypothesis suggests that success hinges exclusively on hard skills. The third hypothesis proposes that success is contingent on both soft skills and hard skills.

The article aims to identify what is important for achieving success in the professional activities of a manager, particularly a public servant, in the modern world. To achieve this aim, the following tasks should be fulfilled.

1. Determine the challenges of the BANI (modern) world for the managers by analyzing literary sources.
2. Conduct an empirical analysis of the work performance of a sample of 100 managers within a year and evaluate their soft skills and hard skills.
3. Based on the results of the research, use the expert Delphi method to determine the skills (soft skills and hard skills) that will ensure the effective activity of the managers in the BANI (modern) world.
4. Determine the ways of soft and hard skills development, which will ensure the effective activity of the managers in the BANI (modern) world.

2. Research methodology

Dialectical, formal and logical methods, namely, analysis, logical synthesis, scientific abstraction and generalization were used for the critical analysis of the literary sources. Empirical analysis, qualitative and quantitative methods were applied to assess the skills of 100 managers (officials of local governments in the western, northern, and central regions of Ukraine, as well as representatives of businesses in the same regions, particularly managers of private enterprises) and their performance over the year. In particular, the level of soft skills was assessed by means of testing and summarizing the obtained results in Google Forms. The level of emotional intelligence was determined according to the Hall method and the level of anxiety – according to the GAD-7 test (Podolchak et al., 2022). Thus, the level of anxiety was considered:

- minimal – when the number of points obtained during the testing was from 0 to 4;
- moderate – when the number of points obtained during the testing was from 5 to 9;
- average – when the number of points obtained during the testing was from 10 to 14;
- high – when the number of points obtained during the testing was from 15 to 21.

The level of emotional intelligence was considered:

- low – when the number of points obtained during the testing was less than 39;
- average – when the number of points obtained during the testing was from 40 to 69;
- high – when the number of points obtained during the testing was more than 70.

The level of critical thinking, creativity, tolerance, the ability to self-learn, to set priorities, and time management skills were assessed by the managers' authorities on the scale from 0 to 100 based on the results of observing their work. The level of hard skills was determined by a qualitative method using the analysis of educational degrees and evaluations of the managers' authorities. The evaluation of work performance was carried out using a quantitative method on a scale from 0 to 100 based on the results of work for the year and the implementation of KPI in organizations according to the data of the managers' authorities.

According to the obtained results, an individual survey was compiled in the form of an individual assessment table to determine the list of necessary skills for the success of a professional manager in the BANI (modern) world using the Delphi expert method. The basis of this method is comprised in the following idea: if you generalize and process the individual assessments of experts regarding a specific situation, you can get a general conclusion with the maximum degree of reliability and credibility (Podolchak, Tsygylyk, 2022). The Delphi method is based on the so-called dialectical inquiry or the art of arguing and conducting a discussion, it is characterized by the anonymity of the experts' opinions, regulated feedback carried out by the analytical group and the group response, which is formed using statistical methods and reflects the generalized opinion of the participants of the expertise. Due to the fact that the Delphi method promotes the development of independent thinking of group members and ensures a balanced and objective study of the problems that require evaluation, this method can be considered as both effective and creative approach to solving any problems.

Specialists in the field of public management and administration, sociology, philosophy, and psychology were recruited from higher education institutions as experts for the assessment, namely:

- 6 professors, doctors of sciences;
- 6 associate professors, candidates of science.

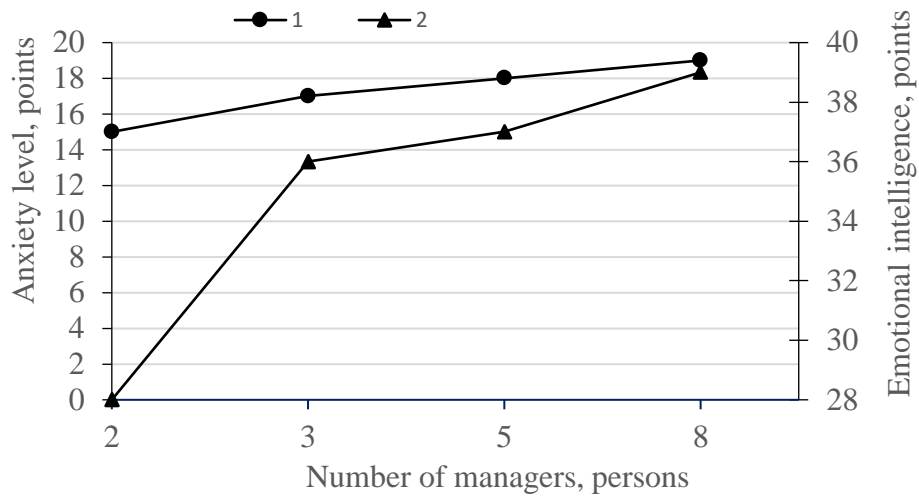
The experts assessed the degree of influence of factors in the BANI (modern) world on the success of the manager's activities on a scale from 0 to 1, where 0 stays for no influence and 1 – very strong influence. The degree of unanimity of the experts was considered acceptable, since the coefficient of variability equaled 3. Hence, the consensus of expressed opinions and the versatility of assessments were achieved. To generalize the data obtained as the result of expert assessment, the arithmetic mean method was used, taking into account the weighting factor (2 – for the doctor of science, 1 – for the candidate of science).

3. Research results and discussions

Figure 1 shows the distribution of the number of managers with a high level of anxiety, determined by the GAD-7 method, and a low level of emotional intelligence, determined by the Hall method. Figure 2 presents the distribution of the number of managers with an average level of anxiety and an average level of emotional

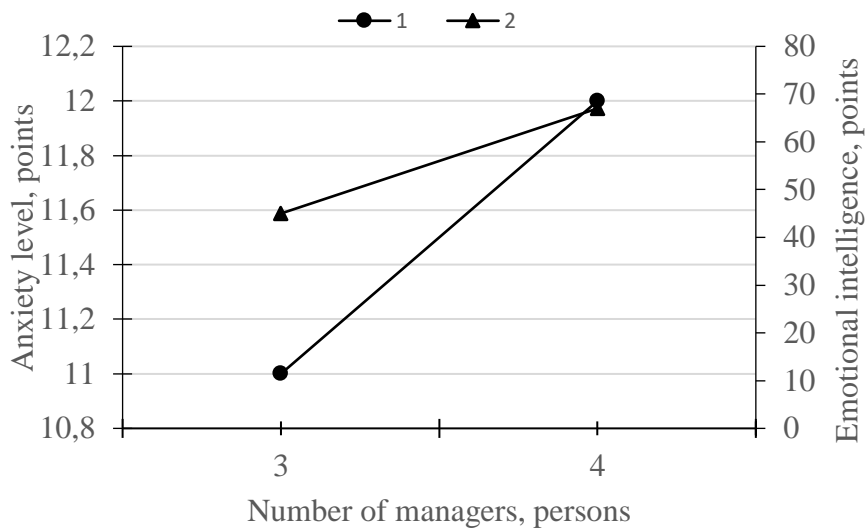
intelligence. Figure 3 outlines the distribution of the number of managers with a low and moderate level of anxiety and a high level of emotional intelligence.

Figure 1. Distribution of 100 managers with a high level of anxiety (curve 1) and a low level of emotional intelligence (curve 2)



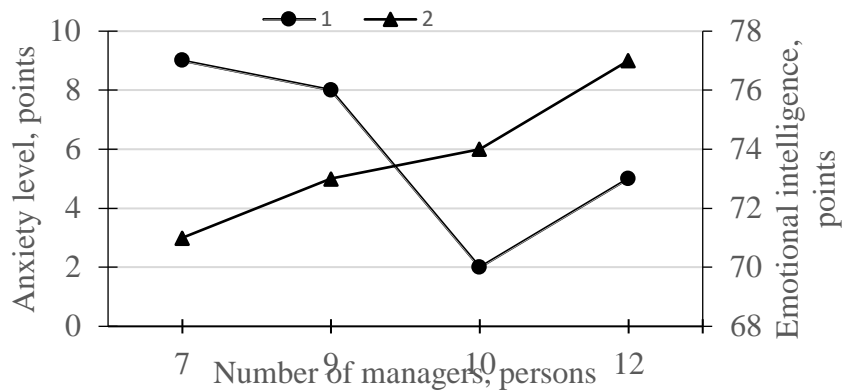
Source: Author's contribution

Figure 2. Distribution of 100 managers with an average level of anxiety (curve 1) and an average level of emotional intelligence (curve 2)



Source: Author's contribution

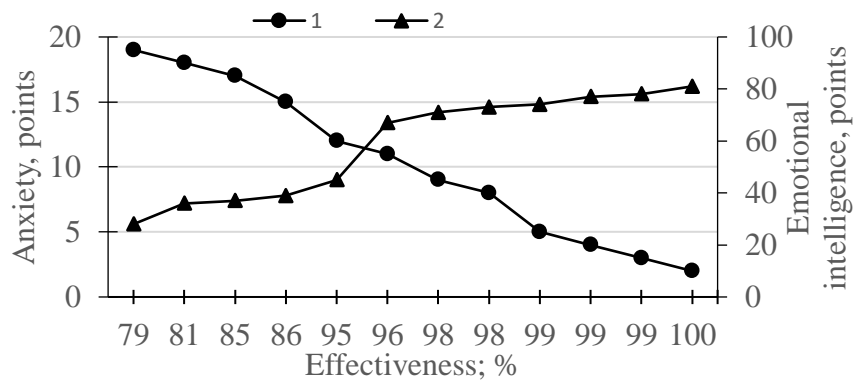
Figure 3. Distribution of 100 managers with a low and moderate level of anxiety (curve 1) and a high level of emotional intelligence (curve 2)



Source: Author's contribution

All available results have been thoroughly analyzed in the following section. As can be seen from fig. 1–3, the majority of the managers – 75 people from a sample of 100 people – have a high level of emotional intelligence and a low and moderate level of anxiety. This is due to, first of all, the specifics of managerial work, for which highly educated persons are selected who are able to effectively perform the assigned tasks. 7 people from the sample showed average results, 18 showed low indicators of emotional intelligence and a high level of anxiety. It should be noted that this number is 25 per cent of the entire sample. This may be caused by the imperfect selection of employees for positions, however it needs to be adjusted. Figure 4 shows the dependence of civil servants' performance on their level of anxiety and emotional intelligence.

Figure 4. Dependence of the effectiveness of civil servants on the level of their anxiety and emotional intelligence



Source: Author's contribution

As can be seen from Figure 4, the managers with a high level of emotional intelligence achieve 98–100 per cent of effectiveness in performing assigned tasks. Less than 100 per cent performance of the tasks is related to the action of external factors and cannot be leveled. The managers with an average level of emotional intelligence have the efficiency of 95–96 per cent, and with a low level of emotional intelligence only 79–86%. As can be seen from the graph, low emotional intelligence causes a sharp drop in work performance. Therefore, a high level of emotional intelligence is a necessary component of a successful manager in the BANI (modern) world. With the condition that the level of emotional intelligence is high, the manager will be able to understand the situation and manage both his/her own emotions and the emotions of his/her colleagues. In this case, even in the most unpredictable situation, it will help to keep calm and a clear mind, and this is already half the success.

According to the results of the obtained empirical data, analyzed above and taking into account the relevant literature, Table 1 was compiled, which represents the results of the individual survey of the experts.

On applying the Delphi method, a list of the necessary skills for the managers' success in the BANI (modern) world was determined (Table 2). The third hypothesis has been confirmed.

Therefore, it has been determined that successful managers in the BANI (modern) world are to be distinguished by a high level of intuition, transgressive thinking and the ability to predict with sufficient accuracy the further development of events and at the same time take into account all the factors that will affect it. However, intuition can be used only by the manager for whom this process does not take too much time, and the amount and quality of experience and knowledge are sufficient for making the right decisions. Otherwise, spending time on long deliberation will only make things worse.

Table 1. Input data for the expert assessment of the influence of skills on success of managers in the BANI world using the Delphi method

Skill	Subskill	Degree of influence
Hard skill	Professional knowledge	High, low, average
Hard skill	High level of IQ	High, low, average
Hard skill	Foreign language proficiency	High, low, average
Soft skill	Emotional intelligence	High, low, average
Soft skill	Critical thinking	High, low, average
Soft skill	Creative thinking	High, low, average
Soft skill	Stress resistance	High, low, average

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Skill	Subskill	Degree of influence
Soft skill	Awareness	High, low, average
Soft-skill	Time management	High, low, average
Soft skill	Self-learning ability	High, low, average
Soft skill	Ability to work in a team	High, low, average
Soft skill	Ability to make quick decisions	High, low, average

Source: Author's contribution

Table 2. The list of necessary skills for the managers' success in the BANI world

Skill	Subskill	Degree of influence
Hard skill	Professional knowledge	High
Hard skill	Foreign language proficiency	High
Soft skill	Emotional intelligence	High
Soft skill	Critical thinking	High
Soft skill	Creative thinking	High
Soft skill	Stress resistance	High
Soft skill	Awareness	High
Soft skill	Time management	High
Soft skill	Self-learning ability	High

Source: Author's contribution

Moreover, a successful manager in the BANI (modern) world should use the 'non-dogmatic' principle in his activities, i.e., boldly reject blind faith in authorities and accept any information using critical thinking.

An important way to develop the skills needed in the BANI (modern) world is self-learning, which fully aligns with the principle of 'lifelong learning' to achieve the 17 Sustainable Development Goals.

When using the principle of self-learning, one should not completely neglect trainings and practical seminars that will help to choose the right direction of skill development.

It is appropriate to use the principle of mentoring and tutoring, with the help of which the more effective managers share their experience and thus try to improve the performance of the less successful managers.

The use of such an approach must be supported by a fair and understandable system of motivation, selected individually from a set of developed recommendations.

4. Conclusions

It has been determined that the main challenges for the managers in the BANI (modern) world are their anxiety, non-linearity and incomprehensibility, which cause the top managers and public administration workers to be in constant rather than situational stress. This requires the formation of a new set of skills to ensure a high level of performance, which are different from the skills that were previously identified for the same purposes in the VUCA world.

The third hypothesis has been confirmed. It has been proven that the main soft skills of a successful professional manager are a high level of emotional intelligence, critical thinking, creative thinking, the ability to self-learn, awareness, stress resistance, and time management. The main hard skills of a successful professional manager are a high level of professional knowledge and a foreign language proficiency.

It was substantiated that the main means of developing soft and hard skills of the managers are self-study, tutoring and mentoring, as well as the development of a clear motivational system, which is selected from a set of individually developed recommendations.

The future studies are planned to be carried out to implement the obtained results into the practical activities of three organizations and evaluate their effectiveness. In addition, it is advisable to develop a fair and effective system of motivation to encourage mentoring, tutoring and to increase the level of one's own soft and hard skills, which can be modified depending on the sphere where the manager works and on the assigned tasks.

Conflict of Interest

The authors declare that the research was conducted without any commercial or financial relationships that could be construed as a potential conflict of interest.

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References

- Abu Asabeh, S., Alzboon, R., Alkhalailah, R., Alshurafat, H., and Al Amosh, H. (2023). Soft skills and knowledge required for a professional accountant: Evidence from Jordan. *Cogent Education*, 10(2). <https://doi.org/10.1080/2331186X.2023.2254157>
- Aleksandrova, N., Shevchenko, O., Kapustina, O., and Sluchaina, L. (2023). Intercultural Competence as a Condition for the Formation and Development (Improvement) of Soft Skills for Future Top Managers of International Financial Corporations. *Economic Affairs (New Delhi)*, 68, 711-717.

- Androniceanu, A., Georgescu, I., (2023). Digital competences and human development: a canonical correlation analysis in Romania. *Polish Journal of Management Studies*, 28 (1), 43-61. DOI: 10.17512/pjms.2023.28.1.03
- Androniceanu, A., Sabie, O.M., Georgescu, I., and Drugău-Constantin, A.L. (2023). Main factors and causes that are influencing the digital competences of human resources. *Administratie si Management Public*, 41, 26-53. <https://doi.org/10.24818/amp/2023.41-02>.
- Bennett, N., Lemoine, G. J. (2014). What a difference a word makes: Understanding threats to performance in a VUCA world. *Business Horizons*, 57, 311-317, <https://doi.org/10.1016/j.bushor.2014.01.001>
- Casio, J. (2020). Facing the Age of Chaos. Retrieved April 29, 2020, from <https://medium.com/@cascio/facing-the-age-of-chaos-b00687b1f51d>
- Campos, L.B.P., Pinto, J.A. (2023). Skills development with a focus on self-awareness and self-management: the power is in the student's hand. In *International Symposium on Project Approaches in Engineering Education* (c. 103-111).
- Chursinova, O., Stebelska, O. (2021). Is the realization of the emotional artificial intelligence possible? Philosophical and methodological analysis. *Filosofija. Sociologija*, 32(1), 76–83. <https://doi.org/10.6001/fil-soc.v32i1.4382>
- Coopersmith, K. (2022). Personal Development Planning and Vertical Leadership Development in a VUCA World. *The Journal of Values-Based Leadership*, 15(1). <https://doi.org/10.22543/0733.151.1380>
- Daugherty, P. (2019). The post-digital era is upon us. Are you ready for what's next? Retrieved February 12, 2019, from <https://www.linkedin.com/pulse/post-digital-era-coming-you-ready-paul-daugherty/>
- Da Silva Araújo, L., Ribeiro Mello, A. J. (2023). "Soft Skills" and Perceived Professional Performance during the Covid-19 Pandemic. *Journal Globalization, Competitiveness and Governability*, 17(3), 51–72. <https://doi.org/10.58416/GCG.2023.V17.N3.02>
- Heerden, A., Jelodar, M.B., Chawynski, G., and Ellison, S. (2023). A Study of the Soft Skills Possessed and Required in the Construction Sector. *Buildings*, 13(2), 522.
- Henning, S. (2019). VUCA World and Skills for the Future. *International Journal of Engineering Business Management*, 11, 1–8.
- Johansen, B. (2007). *Get There Early: Sensing the future to compete in the present*. Oakland: Berrett-Koehler. Available at: https://www.bkconnection.com/static/Get_There_Early_EXCERPT.pdf
- Kmecová, I., Androniceanu, A. (2024). Level of investments in human capital in SMEs as a means of further development and increased competitiveness. *Journal of Competitiveness*, 16(1), 79-95. <https://doi.org/10.7441/joc.2024.01.05>
- Kuckertz, A., Bernhard, A. (2023). Scaling the right answers – Creating and maintaining hope through social entrepreneurship in light of humanitarian crises, *Journal of Business Venturing Insights*, 19, e00356.
- Lušňáková, Z., Lenčėšová, S., Šajbidorová, M., Hrdá, V., and Rumanko, B. (2020). New trends and innovative approaches in personnel management of food businesses in Slovakia. *Potravinarstvo Slovak Journal of Food Sciences*, 14, 178-188.
- Lušňáková, Z., Lenčėšová, S., Hrdá, V., and Šajbidorová, M. (2020). Innovative processes within communication and motivation, work environment care and creativity support of human resources. *Acta Universitatis Agriculturae et Silviculturae Mendelianae Brunensis*, 68(2), 395-405.
- Obermayer, N., Csizmadia, T., Banász, Z., and Purnhauser, P. (2023). The Importance of Digital and Soft Skills in the Digital Age. *Proceedings of the European Conference on Knowledge Management, ECKM*, 2, 978-987.

- Podolchak, N., Tsygylyk, N., Martyniuk, V., and Sokil, O. (2021). Predicting Human Resource Losses due to the COVID-19 Pandemic in the Context of Personnel Security of Organizations. XI International Conference on Advanced Computer Information Technologies (ACIT). Germany: IEEE, 333-336. <https://doi.org/10.1109/ACIT52158.2021.9548361>
- Podolchak, N., Tsygylyk, N., and Dziurakh, Y. (2022). Building an Effective Personnel Risk Management System for the Organization. *Eastern-European Journal of Advanced Technologies*, 4 (13), 44-52. <https://doi.org/10.15587/1729-4061.2022.262547>
- Podolchak, N., Martyniuk, V., and Tsygylyk, N. (2023). Study of Correlation Between the Gender Gap Index, Economic Efficiency, and Governance in European Countries. *Contemporary Economics*, 17(3), 333-350.
- Podolchak, N., Martyniuk, V., Tsygylyk, N., Skowron, S., and Wołowiec, T. (2022). Mitigating Risks for Effective Personnel Management in the Organization of the Energy Sector due to the COVID-19 Pandemic. *Sustainability*, 14 (16).<https://doi.org/10.3390/su141610055>
- Remnova, L. (2019). The main challenges and determinants of the new personnel management model in the VUCA world. *Problemy i perspektyvy ekonomiky ta upravlinnia*, 39(19), 99-105.
- Samusevych, Y., Lyeonov, S., Artyukhov, A., Martyniuk, V., Wyrwisz, J., and Wojciechowska, K. (2023). Optimal Design of Transport Tax on the Way to National Security: Balancing Environmental Footprint, Energy Efficiency and Economic Growth. *Sustainability*, 15(1). <https://doi.org/10.3390/su15010831>
- Shpak, N., Rebilas, R., Kulyniak, I., Shulyar, R., and Horbal, N. (2023). Trends in Digital Marketing Research: Bibliometric Analysis. *CEUR Workshop Proceedings*, 3403, 449-465.
- Shpak, N., Podolchak, N., Karkovska, V., Sroka, W., and Horbal, N. (2022). The application of tools for assessing the financial security of enterprises. *Forum Scientiae Oeconomia*, 10 (2), 29-44. https://doi.org/10.23762/FSO_VOL10_NO2_2
- Stenger, K. R., Luna, D. (2021). Evaluating a remote learning model for synchronous course delivery in counselor education. *The Journal of Counselor Education and Supervision*. 63(1), 38-53.
- Sokil, O., Podolchak, N., Knyaz, S., Sokil, Y., and Kucher, L. (2022). Sustainable development prediction of start-ups in Ukraine. *Journal of Environmental Management and Tourism*. 13(7), 1901-1911. [https://doi.org/10.14505/jemt.v13.7\(63\).10](https://doi.org/10.14505/jemt.v13.7(63).10)
- Taleb, N. N. (2021). Antifragility. About (not) vulnerable in real life. Kyiv: Nash Format
- Taleb, N., Goldstein, D. (2012). The Problem Is Beyond Psychology: The Real World Is More Random Than Regression Analyses. *International Journal of Forecasting*, 28(3), 715-716.
- Tallon, P. P. (2008). Inside the adaptive enterprise: an information technology capabilities perspective on business process agility. *Information Technology and Management*, 9 (1), 21-36.
- Yazdani, B., Zadeh, M. H. (2021). Leadership in a VUCA World: Integrating Antecedents and Dimensions of Authenticity, Psychological Capital and Resilience. *Journal of Business Research*, 132, 696-705.
- Williamson, K. (2002). *Research Methods for Students, Academics and Professionals: Information Management and Systems*. Oxford: Chandos Publishing.