Journal of Vasyl Stefanyk Precarpathian National University
http://journals.pnu.edu.ua
Vol. 10, No. 4 (2023), 46-62

UDC 658
doi: 10.15330/jpnu.10.4.46-62

ORGANIZATIONAL BARRIERS OF A KNOWLEDGE-BASED ORGANIZATION IN THE ASPECT OF SUSTAINABLE CREATIVITY DEVELOPMENT

MARTINA BLAŠKOVÁ, ANETA SOKÓŁ, IRENA FIGURSKA

Abstract. The turbulence of the organizations' environment significantly affects the functioning of creative knowledge-based organizations. Changes that occur in this broadly understood environment are often unpredictable, so it is impossible to prepare for them. Therefore organizations must creatively use their knowledge in their response to these changes. Bearing the above in mind, the issue of organizational barriers of sustainable creativity development in knowledge based organizations seemed to be worth the research effort. The paper analyses, synthesizes and compares the theory (regarding the essence of a knowledge-based organization, the sustainable development of creativity in organizations and the barriers that hinder this development), processes empirical data, verifies hypotheses, and provides conclusions and suggestions for knowledge based organizations (both those taking up and not taking creative activities) regarding the minimization of barriers affecting the sustainable development of creativity. The empirical analysis uses the Spearman correlation coefficient, Chi-square test, Mann-Whitney test, W Wilcoxon's test and simple rotation factor analysis. The results of the research showed significant differences in the following barriers of sustainable creativity development: lack of knowledge on the organization's vision, goals and plans, poor financial condition of the organization, and fear to present own ideas. Subsequently, with use of appropriate statistical apparatus, the 28 primarily defined barriers were turned out to into the six heterogeneous category – groups of the barriers limiting the sustainable development of creativity in knowledge-based organizations. The results of the study made it possible to identify areas the improvement of those may allow for more effective development of the organization in the scope presented in the paper. The article ends with recommendations that respond to the barriers with the strongest negative impact on the sustainable creativity development.

Keywords*:* creativity, knowledge-based organization, sustainable creativity development, organizational barriers, management.

JEL Classification: M5

1. INTRODUCTION

In modern economy, characterized by permanent uncertainty and volatility of conditions under which organizations operate, which results in decreased security of business activity, market success may be achieved by those of them that base their competitiveness on knowledge and creativity.

Although the issues of creativity are still under-appreciated in science either, it should be noted that growing interest in this subject has been observed in recent years. This encourages and increases the amount of research carried out into development of new forms of organizations, including those using

creativity as a resource (Wang & Cheng, 2010). Knowledge-based organizations that use creativity are particularly important for the sustainable development and competitiveness of regions and countries, as well as for proper functioning of the market mechanism. It can be noticed that the proper functioning of KBOs, and within them the proper and sustainable development of creativity, depends on the creation of safe and supportive organizational conditions, including the elimination of emerging barriers. However, there are few scientific studies on this subject in the literature.

Detailed identification of sustainable creativity development's determinants is an important aspect due to demonstrating differences between KBOs and other economic entities. Their distinctiveness results from the specifics of function, greater sensitivity to change, need for quicker adaptation to changes, or a different structure of goals and motives of action.

Therefore, the aim of the paper is analysis, definition and enrichment of the scientific area by distinguishing two currents and scientific contributions. The first one, cognitive in nature, is focused on analyzing the subject literature which allowed a critical analysis and shaped the research framework. It deals with notions related to the development of concepts concerning knowledge-based organizations, creativity and sustainable development of creativity, e.g., in terms of exploiting and sustaining creativity, and eliminating barriers limiting its development.

From the viewpoint of the second scientific contribution, the study focuses on research conducted using an original questionnaire created on the basis of the subject literature as well as own experiences and research in the area considered in this article (Sokół, 2015; Marques, 2016; Ulewicz & Blašková, 2018; Figurska, 2019; Luu, 2019; Blašková et al., 2019; Zhang et al., 2019). The research sought relationships between KBOs whether carrying out creative activities or not, and barriers to sustainable creativity development in order to determine whether there were any relationships between them. Thus, adequate research methods used allowed verification of the assumed hypotheses and the research objectives.

2. THEORETICAL BACKGROUND

2.1. KNOWLEDGE-BASED ORGANIZATION AND ITS CREATIVITY

Although the concept of a knowledge-based organization has already appeared in the management literature for several decades and KBO itself has become an important subject of scientific research, there is no single universally accepted definition of the term. In practice this organization is often perceived through the perspective of the degree of its products or services' knowledge saturation. However, the specifics of a KBO go beyond its products to encompass its processes, purpose and perspective (Zack, 2003).

Knowledge-based organization is an intelligent complex adaptive system (Bennet, Bennet, 2003) that "*acts effectively in the present and its capable to deal effectively with the challenges of the future*" (Wiig, 2000). It realizes the importance of knowledge, and applies techniques and tools to make the best use of knowledge resources for future activities (Liebowitz & Beckman,1998; Peteva, 2020). KBO consistently creates new knowledge, disseminates it and embodies it in new technologies and products (Nonaka, 1991). It acts intelligently and successfully in its domain by learning and creating knowledge in a continuum way (Neagu, 2008). KBO learns from its own experience, research, observation of the environment as well as available sources of information and knowledge (Skrzypek, 2016) and cultivates its knowledge capital, supports fundamental knowledge capabilities and leverages knowledge in every aspect of its business operations and processes (Ceruti et al., 2019). Intangible resources are the most important source of value creation in KBO having the greatest impact on its market value and competitiveness (Mikuła, 2006; Leon, 2013).

Building a KBO requires taking specific actions arising in and based on the process of creating new knowledge. In particular, these relate to redefining the organization's mission, goal and strategy, implementing knowledge management processes that support strategic knowledge, market and customer segmentation taking into account the knowledge that can be acquired from them, viewing the

costs of learning as an investment, assigning importance to HRM, strengthening the organization's mission through coordinated internal and external communication (Zack, 2003).

To succeed in the highly competitive, complex world, KBOs should creatively use their knowledge and the ability to transform it into new values. Creativity as a unique and rare resource is one of the most important sources of competitive advantages of KBOs and determines the degree of development of organizations, regions and countries. Such widely understood development could be applied with use of and based on the key principles of sustainability.

Based on the modified concept of Brzeziński (2009), creativity in KBOs can be divided into conceptual and operational. Conceptual creativity consists of tasks and processes that are completely new and have not occurred in the organization before, while operational creativity is achieved through experience in putting these phenomena and processes into practice. The result of conceptual creativity is new value, while the result of operational creativity is the complete innovation. When these two types of creativity occur together, they form a holistic model of the creative process in a KBO, enriching the organization with new knowledge (Sokół, 2015).

Taking into consideration the research context of the paper, the subject of discussion may be creative employees, creative teams as well as creative structures and sustainability of processes occurring in the organization. In the paper, the latter is the focus of attention. However, KBOs using creativity should be internally integrated in all aspects mentioned above, as this is the only way to reveal possibilities of generating value from possessed knowledge with the use of creativity, which are necessary in the articulation of any proposed offer by the entity.

2.2. Sustainable development and sustainable development of creativity

Sustainable development is key to organization's competitiveness, survival, growth and profitability, although sustainability emerges as a great challenge (Souto, 2022). It relates to the responsibility of all organizations to ensure that their operations use all forms of capital in a way that ensures resources for future generations are maintained (Robbins et al., 2009). It is just the social responsibility along with environmental protection and economic progress that are a core of the sustainable development (Miar et al., 2022).

The complexity of sustainable development in the different contexts requires the integration of multiple perspectives independent from backgrounds (Schulz & Mnisri, 2020). It can be therefore stated the sustainable development needs creative solutions and impulses. In this view, the sustainable development is necessarily connected with the creativity. Vice-versa, the creativity must be currently linked to the sustainable development, i.e., the creativity is such complicated and insufficient source that it has to be precisely generated, motivated and inspired, and maintained for the organizational future action – it has to be sustainably developed. It means the new challenge arises for all scholars: sustainable creativity development.

Some of studies searched the impacts of organizational creativity on sustainable development in general organizations (Alsabah & Alshura, 2022; Marić et.al., 2022). In this view innovations and creativity are perceived as one of priorities of the program of EU socio-economic development (Hrysenko, 2022), and a positive association of the sustainable economic development and creativity with economic growth in G20 countries is also confirmed (Miar et al., 2022). In other studies, Blašková et al. (2022) constructed the taxonomy of factors involved in decision-making to sustain creativity in higher education, Prasad and Rao (2022) used the sustainable development methodology to search the business process reengineering, strategic business units, and the leadership that plays a critical role in being innovative and creative, and Popescu (2021) related the sustainable development goals to creativity, intellectual capital and innovation, etc.

However, the topic of sustainable creativity development searched in the KBOs lacks in the literature. The authors can therefore undertake to define the mentioned term, while the following will be used: a systemic approach, logical succession of thinking, theoretical hypothesizing and an

interdisciplinary and multivariate approach in combining existing knowledge and generating new ones. With the above in mind, the sustainable creativity development is defined as: *A deliberate, long-lasting and consistently applied system of processes, built conditions and precisely managed efforts for the harmonious development of creativity and creative potential of individuals, groups and an entire organization, drawing on the natural need to create new and unique ideas, solutions and effects, respecting the key principles of sustainability and mechanisms of permanent self-renewal and deep respect for current and future generations and the development of all humanity*.

Because the relationship between the creativity and the sustainable development is based on social interaction (Schulz & Mnisri, 2020) and on the human effort to reveal new and useful solutions, beneficial for all creative individuals, the six key principles necessary for the implementation and embedding of the sustainable development of creativity may include:

- The principle of intergenerational equity that implicate an equal treatment and long-lasting responsibility to following generations (Droz, 2021; Shaukat & Ming, 2022);
- The principle of intra-generational equity that treats people in each and every generation fairly (Hundloe, 2021) and enables them to be intra-psychically satisfied and opened to new challenges (Julianto et al., 2022; Dinh et al., 2022);
- The principle of corporate social responsibility (Strenitzerová et al., 2022) and approaching the Society 5.0 (Rosak-Szyrocka et al., 2022; Kum et al., 2022);
- The principle of effectiveness that determines the need for applying efficiency, effectivity and cost decrease in processes, including the creative processes (Krynke & Klimecka-Tatar, 2022; Chaubey et al., 2022);
- The principle of permanent progress and continuing cultivation that calls for mechanisms of/for the betterment in all actions (Blašková et al., 2022; Yannan & Zhengyu, 2022);
- The principle of synergetic and/or multiplicative action that enables and needs to perform activities via multilayer creative efforts that multiply common inputs, transformations, and outputs (Blašková et al., 2019; Blašková et al., 2022; Junxia & Ying, 2022).

All of the listed principles accentuate the people's creative essence, and only in a case of their mutual interconnectivity they could bring the expected contributions and positives.

2.3. Barriers of a KBO in the aspect of sustainable creativity development

Nowadays, achieving market success requires anticipating and creating the future, which is part of forward thinking (Amabile, 1997). Thus, organizations that create sustainably the knowledge and transform it into innovations, create the prospect of development.

The analysis and evaluation of the organization's activities that have integrated sustainable development is critical (Sroufe, 2017) whereas the area of creativity and its systematic maintenance is extremely sensitive and complicated. The creativity of a KBO in this respect is influenced by many internal factors, such as the climate and culture of the organization, including the creative leadership style (Koehorst et al., 2021). In fact, decision-making powers vested in managers shape changes in terms of human relations and influencing their creativity, organizational structure, procedures, etc.

Inadequate design of conditions favoring the sustainable development of creativity in KBOs leads to barriers that can be categorized in terms of (Sokół, 2015; Ekvall, 1996; Amabile, 1998; Mumford et al., 2002; Jung et al., 2008; West & Sacramento, 2008; Gumusluoglu & Ilsev, 2009; Mikuláštík, 2010; Franková, 2011; Holford, 2019):

a. Staff selection and teamwork – homogeneous teams, unconsidered structure of teams in terms of creativity and knowledge of their members, lack of diversity of the workforce in the organization, homogeneous, monotonous work,

b. Motivation and organizational climate – employees' reluctance towards new ideas, lack of initiatives to encourage new ideas, atmosphere of rivalry and competition, fear of sharing information, lack of promotion of creative attitudes, lack of employees participation in management, lack of a sense of

unity with the organization, no link between the effects of creative activities and the motivational system, insufficient consideration of knowledge and creativity in the recruitment process, lack of training to enhance creativity,

c. Leadership – lack of creative behavior, fear of taking risks, lack of autonomy, excessive control, time pressure to develop new ideas, demanding immediate results, pressure to succeed at any cost,

d. Organizational systems and processes – lack of knowledge and information exchange systems, lack of systematic evaluation of employees' creative achievements, hierarchical, rigid structure and a high degree of formalization, developed bureaucracy.

The analysis of the above-mentioned barriers and the authors' own experiences resulting from the research problems they undertake allowed for the identification of 28 barriers involving behaviors, activities or states of a KBO in the aspect of sustainable creativity development. These ones could consist of: 1) knowledge is treated as a source of power and superiority over others, 2) lack of time for learning, knowledge sharing, etc., 3) information chaos occurs, nobody knows where the necessary information is and who possesses it, 4) employees have no knowledge of the organization's vision, goals, plans, 5) not enough trainings, 6) improper flow of information, 7) employees keep repeating the same mistakes, 8) interpersonal relations between employees are incorrect, 9) employees are reluctant to changes, 10) organization is in poor financial position, 11) modern ICT are used insufficiently, 12) superiors say one thing and do the other, 13) lack of involvement of superiors in the work, 14) lack of employee involvement in work, 15) there are no procedures for suggesting new ideas, concepts, 16) new ideas, concepts are ignored, 17) employees have no motivation to learn, share knowledge, etc., 18) the same activities are repeated unnecessarily (by different people, departments), 19) there is 'zero tolerance for mistakes' policy in organization, 20) employees are 'discovering America' over, and over again, 21) employees don't wish to share ideas and concepts between each other, 22) employee's departure from organization results in losing his/her knowledge, 23) lack of leadership, 24) too much bureaucracy, 25) the atmosphere at work is not conducive to a sense of security, 26) lack of employee motivation to perform the work, 27) lack of the superior motivation to perform the work, 28) employees are afraid to present their ideas. From this spectrum of barriers, it is primarily barriers 1, 3, 4, 5, 7, 13, 14, 15, 16, 17, 19, 21, 23, 25, 26, 27 and 28 that prevent the sustainable development not only of the creativity, but of the entire organization.

3. RESEARCH OBJECTIVE, METHODOLOGY AND DATA

To achieve overall and sustainable development, KBOs need to build the right, organizational conditions fostering the development and creative use of knowledge. Above all, they must eliminate barriers that may impede sustainable development. Therefore, the aim of the paper is to consider the cognitive, theoretical-methodological and empirical issues of sustainable creativity development in knowledge-based organizations and to determine the extent of influence of identified barriers on sustainable development of creativity. In order to achieve the intended aim, the research procedure presented in the Figure 1 was adopted.

The starting point for implementing the presented procedure was literature studies on KBO, creativity and barriers to creativity in the context of sustainable organizational development. The background for the research carried out for the purposes of this paper was the authors' previous research on knowledge management as well as creativity and its development in knowledge-based organizations (Sokół, 2015; Figurska, 2019; Figurska & Sokół, 2020; Sokół & Figurska, 2021). The concept of sustainable development is one of the original perspectives that enrich the theoretical contribution of this paper. In this view, it is necessary to ensure the preconditions for communication, development, creativity, and constant improvement and learning at all levels for the innovative organization to continuously create new values (Marić et.al., 2022).

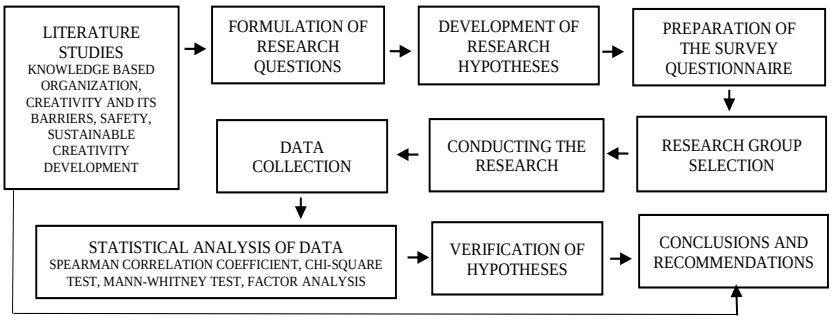

Fig. 1. Individual sequences in the research process

Source: own elaboration

For the purposes of this article, qualitative studies in the field of KBOs were undertaken. The main objective of the research was to obtain the opinions of respondents regarding barriers limiting the sustainable development of creativity in KBOs using creativity in the core scope of their activities and those that do not use it to such extent, as well as finding an answer to a question what conditions should be created on the part of the organization to support and develop the creativity.

This part of the study was devoted to establishing a theoretical framework and gaining a broader understanding of the relationships between the components selected for the study. Based on this, research questions were formulated as follows:

1. What organizational barriers most significantly determine the sustainable creativity development in knowledge-based organizations?
2. Are there any differences in terms of barriers to sustainable creativity development in knowledge-based organizations that use creativity and those that do not?

Accordingly, the following hypotheses were put forward:

H1: The established range of organizational barriers determining the sustainable creativity development in knowledge-based organizations includes interrelated phenomena.

H2: There exist significant differences in organizational barriers of the sustainable creativity development between knowledge-based organizations using creativity in their business activities (KBOC) and those that did not (KBONC).

To answer research questions and verify the hypotheses established in the paper, a self-descriptive study on barriers affecting the sustainable development of creativity in KBOs, both those using and not using creativity in their core business was carried out.

The study used the original form of the questionnaire which was based on the authors' many years of experience in exploring the topic of knowledge management and creativity, completed on newly added perspective – sustainable development.

After defining the sampling frame, the research sample was drawn. The sample group was selected with the stratified non-proportional random selection method and consisted of people employed in KBOs. The sample was drawn from adults – continuously learned employees.

Respondents were informed about the purpose of the study and instructed how to complete the questionnaire online. The questionnaire contained 21 closed and semi-open questions, however this article analyses several questions contained in the questionnaire.

277 individuals were participated in the survey. The largest group of respondents were people aged up to 25 years (83.5% of the surveyed population). Female accounted for almost 57% of the participants. 54% of the respondents obtained secondary education whereas 46% of the respondents obtained higher education.

Empirical analysis was conducted according to the research sequence based on findings from the questionnaire responses. The first step of the analysis involved processing the data obtained. The results for the entire population surveyed were taken into account, and then for knowledge-based

organizations using (KBOC) and not using (KBONC) creativity in their activities. This step was followed by verification of the hypotheses and comparison with the theoretical part of the paper. Then final conclusions and suggestions for KBOs regarding minimalization of barriers limiting the sustainable development of creativity in the studied entities were presented.

Statistical analysis of the data was performed using the IBM SPSS Statistics package. Frequency analysis and analysis of basic descriptive statistics were carried out with the use of: the Spearman correlation coefficient to measure the relationship between ordinal variables, Chi-square test to measure the strength of association between nominal and ordinal variables ($p<0.05$), Mann-Whitney test to compare individual groups of KBOs and Simple Oblimin rotation to extract 6 group-factors.

The verification procedure adopted in the paper was to examine relationships between observable phenomena or facts. The research was diagnostic and exploratory in nature and allowed presenting recommendations for KBOs indicating to what extent and in what areas they must consistently work to ensure safe conditions to foster the sustainable development of creativity to support efficiency of their own growth.

4. RESULTS AND DISCUSSION

4.1. Analysis of the survey results

The first research aspect was assessment of the relationship of 28 barriers limiting the sustainable development of creativity in knowledge-based organizations in general and in relation to KBOC and KBONC. Creative activities are understood as activities undertaken by an organization that are new, previously unknown to it, through which it enriches and sustains itself and its environment.

Assessment involving measurement of relationship between the indicated components mentioned in the previous paragraph showed that for KBOC undertaking creative activities, significant relationships were identified regarding the following barriers limiting these activities: insufficient training, new ideas, concepts are ignored, employees are not motivated to learn, share knowledge, etc., excessive bureaucracy prevails. For KBONC significant correlations were identified in the following barriers: employees are reluctant to make any changes, the organization is in a poor financial condition, new ideas, concepts are ignored again and again, employees do not want to share ideas and concepts among themselves, excessive bureaucracy prevails.

Tab. 1

Basic descriptive statistics of the analyzed qualitative variables – barriers

Factors	Organisation:											
	KBONC				KBOC				KBO			
	Average	ME	SD	N	Average	ME	SD	N	Average	ME	SD	N
1	2.79	3.00	1.424	14	2.55	3.00	1.392	233	2.56	3.00	1.392	247
2	2.36	2.00	0.929	14	2.77	3.00	1.324	233	2.75	3.00	1.307	247
3	2.36	2.00	1.151	14	2.63	3.00	1.285	231	2.61	2.00	1.277	245
4	3.00	3.00	0.877	14	2.34	2.00	1.375	234	2.38	2.00	1.359	248
5	3.36	3.00	1.336	14	2.88	3.00	1.453	234	2.91	3.00	1.448	248
6	2.86	2.00	1.512	14	2.51	2.00	1.358	232	2.53	2.00	1.366	246
7	2.36	2.00	1.336	14	2.45	2.00	1.241	233	2.44	2.00	1.244	247
8	1.86	2.00	0.864	14	2.24	2.00	1.233	233	2.22	2.00	1.217	247
9	2.50	3.00	1.019	14	2.34	2.00	1.287	230	2.35	2.00	1.272	244
10	2.50	2.50	1.092	14	1.96	1.00	1.272	227	1.99	1.00	1.266	241
11	2.57	3.00	0.852	14	2.39	2.00	1.349	229	2.40	2.00	1.324	243
12	2.36	2.00	1.336	14	2.57	2.00	1.418	231	2.56	2.00	1.412	245
13	2.64	2.50	1.216	14	2.37	2.00	1.397	229	2.38	2.00	1.387	243
14	2.43	2.00	0.938	14	2.26	2.00	1.213	231	2.27	2.00	1.198	245
15	2.71	3.00	1.204	14	2.55	2.00	1.365	229	2.56	2.00	1.354	243

16	2.43	3.00	0.938	14	2.35	2.00	1.306	230	2.36	2.00	1.286	244
17	2.43	2.00	1.016	14	2.42	2.00	1.247	233	2.43	2.00	1.234	247
18	2.64	3.00	0.929	14	2.45	2.00	1.301	231	2.46	2.00	1.282	245
19	2.57	2.50	1.016	14	2.21	2.00	1.317	227	2.23	2.00	1.302	241
20	2.29	2.50	0.825	14	1.96	2.00	1.216	228	1.98	2.00	1.198	242
21	2.07	2.00	0.829	14	2.01	2.00	1.176	230	2.02	2.00	1.158	244
22	2.71	3.00	1.139	14	2.28	2.00	1.423	229	2.30	2.00	1.410	243
23	2.14	2.00	1.027	14	2.10	1.00	1.324	229	2.10	1.00	1.307	243
24	2.64	3.00	0.929	14	2.27	2.00	1.377	228	2.29	2.00	1.357	242
25	2.29	2.00	1.069	14	1.87	1.00	1.173	230	1.90	1.00	1.170	244
26	2.43	2.00	1.089	14	2.40	2.00	1.291	231	2.40	2.00	1.278	245
27	2.29	2.50	0.825	14	2.02	2.00	1.208	230	2.03	2.00	1.189	244
28	2.36	2.00	0.929	14	1.89	1.00	1.159	228	1.91	1.00	1.151	242

ME – median, SD – standard deviation, N – the number of the examined population

Source: own study

To compare the two independent groups (KBOC and KBONC) in terms of quantitative variables, the Mann-Whitney test was used (Table 2). Results of the study using this test showed statistically significant differences in the following responses: employees have no knowledge of the organization's vision, goals, plans etc. (p=0.021), the organization is in a poor financial condition (p=0.035), employees are afraid to present their ideas (p=0.029). Lower scores were given by those working in knowledge-based organizations where creativity was used in the core business. By this, the hypothesis H1 was approved.

Tab. 2

Mann-Whitney's test

The tested value									
Factors	**U Mann-Whitney's**	**W Wilcoxon's**	**Z**	**p**	**Factors**	**U Mann-Whitney's**	**W Wilcoxon's**	**Z**	**p**
1	1467.5	28728.5	-0.650	0.516	15.	1447.0	27782.0	-0.628	0.530
2	1338.0	1443.0	-1.163	0.245	16.	1453.0	28018.0	-0.634	0.526
3	1450.0	1555.0	-0.667	0.505	17.	1583.0	28844.0	-0.191	0.849
4	1058.0	28553.0	-2.304	0.021	18.	1411.5	28207.5	-0.825	0.409
5	1333.0	28828.0	-1.195	0.232	19.	1222.5	27100.5	-1.512	0.131
6	1409.0	28437.0	-0.855	0.393	20.	1168.0	27274.0	-1.800	0.072
7	1547.0	1652.0	-0.334	0.739	21.	1438.5	28003.5	-0.711	0.477
8	1400.0	1505.0	-0.927	0.354	22.	1207.0	27542.0	-1.625	0.104
9	1434.5	27999.5	-0.709	0.478	23.	1473.5	27808.5	-0.548	0.584
10	1095.5	26973.5	-2.109	0.035	24.	1246.5	27352.5	-1.443	0.149
11	1380.5	27715.5	-0.904	0.366	25.	1207.0	27772.0	-1.721	0.085
12	1491.0	1596.0	-0.504	0.615	26.	1544.0	28340.0	-0.293	0.770
13	1364.5	27699.5	-0.970	0.332	27.	1268.0	27833.0	-1.422	0.155
14	1428.0	28224.0	-0.766	0.444	28.	1084.5	27190.5	-2.184	0.029

Source: own study

Then, the analysis of the correlation matrix of variables was carried out and, subsequently, the authors proceeded to select the number of factors based on the Kaiser criterion, Cattell's landslide, half criterion and sufficient proportion. Then, the simple Oblimin rotation was used.

Results of the factor analysis are presented in Table 3 and Table 4. The factors turned out to be a heterogeneous category, as six factors rather than one overall factor were revealed. Thus, the first factor referred to as '*Superiors and conditions of cooperation with employees'* was created by the following barriers: (12), (13), (14), (17), (25), (26), (27), (28). The second factor, named '*Knowledge in the organization*' was

created by barriers: (4), (5), (6), (16), (22). The third factor named '*Organizational constraints*' was created by the following barriers: (8), (9), (10), (11), (24). The fourth factor referred to as '*Security climate*' was created by the following barriers: (8), (20), (21), (25). The fifth factor named '*Relationships in the organization*' was created by the following barriers: (2), (4), (7), (8). And the factor six referred to as '*Other*' was created by the following barriers: (1), (15), (23).

As an innovative result of the study, the authors established a six-factor structure of barriers to sustainably develop the creativity in organizations. Some of the items collect data on barriers in the field of leadership and cooperation with employees, knowledge development, organizational conditions, organizational climate and relations which prevail in the organization. The structure characterized in this is justified in the existing indications in the literature concerning organizational barriers limiting the sustainable development of creativity.

Tab. 3

Results of exploratory factor analysis using the simple Oblimin rotation

Barriers	**Factors**						**Uniqueness**
	1	**2**	**3**	**4**	**5**	**6**	
1						0.399	0.789
2					0.384		0.685
3							0.935
4		0.345			0.489		0.256
5		0.584					0.507
6		0.647					0.344
7					0.419		0.454
8			0.415	0.343	0.306		0.518
9			0.748				0.332
10			0.411				0.524
11			0.435				0.611
12	0.506						0.490
13	0.544						0.368
14	0.500						0.372
15						0.316	0.359
16		0.644					0.510
17	0.534						0.415
18							0.472
19							0.661
20				0.802			0.311
21				0.615			0.441
22		0.318					0.619
23						0.389	0.454
24			0.711				0.389
25	0.567			0.311			0.404
26	0.822						0.277
27	0.694						0.375
28	0.568						0.398

Note 'Minimum residual' extraction method was used in combination with a 'Oblimin' rotation.

Source: own study

Tab. 4

Factor analysis results – variance explained by individual factors

Summary			
Factor	**SS Loadings**	**% of Variance**	**Cumulative %**
1	4.36	15.56	15.6
2	2.78	9.93	25.5
3	2.62	9.36	34.8
4	2.56	9.15	44.0
5	1.26	4.51	48.5
6	1.15	4.11	52.6

Source: own study

Presented analysis of the results obtained indicates positive factor charges between the variables. The first component has the highest factor charges with the variables (26) and (27), while the second component - with variables (6) and (16) but these correlations are not very high. The third component has the strongest correlations with the variables (9) and (24), the fourth component – with the variables (20) and (21), while the fifth one - with the variables (4) and (7). To compare, the last one shows no correlation with any variable.

The final research aspect was a comparison of factor values between KBOC and KBONC. To this end, descriptive statistics were initially recalculated (Table 5) taking into account the new factor scale and analyzed using the Mann-Whitney test (Table 6). In this part of the analysis, the aim was to identify statistically significant differences between the two groups of organizations studied.

Tab. 5

Descriptive statistics – comparison of factor values between groups

Factors	**Organisation**											
	KBONC				**KBOC**				**KBO**			
	Average	**SD**	**Me**	**N**	**Average**	**SD**	**Me**	**N**	**Average**	**SD**	**Me**	**N**
1	2.4018	0.74546	2.1875	14	2.2065	0.98143	2.0000	224	2.2180	0.96897	2.0000	238
2	2.9286	0.78684	2.9000	14	2.4920	1.03109	2.4000	226	2.5175	1.02228	2.5000	240
3	2.4143	0.77047	2.4000	14	2.2224	0.94270	2.2000	223	2.2338	0.93312	2.2000	237
4	2.1250	0.75160	2.0000	14	2.0220	0.92654	2.0000	227	2.0280	0.91628	2.0000	241
5	2.3929	0.71195	2.3750	14	2.4446	0.99887	2.2500	230	2.4416	0.98362	2.2500	244
6	2.4524	0.89258	2.6667	14	2.3186	1.00137	2.3333	227	2.3264	0.99417	2.3333	241

Source: own study

Tab. 6

Mann-Whitney's test

Factors	**U Mann-Whitney's**	**W Wilcoxon's**	**Z**	**p**
1	1286.500	26486.500	-1.128	0.259
2	1151.000	26802.000	-1.713	0.087
3	1306.500	26282.500	-1.026	0.305
4	1430.500	27308.500	-0.631	0.528
5	1590.500	28155.500	-0.076	0.939
6	1416.000	27294.000	-0.687	0.492

Source: own study

Results of the Mann-Whitney test showed no statistically significant differences between KBOC and KBONC in terms of the factors obtained. Although the hypothesis H2 cannot be approved by these

statistics, the result is inspiring for further scientific investigation. It is possible that small differences in the existing barriers testify that these barriers affect both types of KBOs. At the same time, it may indicate that in both types of subjects there are basic and at the same time powerful barriers, preventing the development of creativity to be anchored permanently and sustainably.

4.2. Discussion

There is no doubt that sustainability contributes to raising the organizational creativity level, and the sustainability orientation is integrated into organizational creativity without limiting it (Alsabah & Alshura, 2022; Marić et. al., 2022).

In order for creativity to sustainably develop in an organization and generate added value, it is necessary to remove barriers that limit it and to create favorable conditions for the sustainable development of creativity. Assessment of organizational effectiveness in terms of sustainable creativity development in KBOs is very difficult to perform, as it is a complex phenomenon. Research results enabled identification of six significant groups of barriers, however, the conducted analysis did not show statistically significant differences between KBOC and KBONC in terms of the obtained six groups of barriers threatening sustainable creativity development.

The results obtained for the first group of barriers 'Superiors and conditions of cooperation with employees' are already reflected in known researches, in fact, this broad category includes all activities carried out by managers that affect organizational creativity. It is primarily concerned with managers' direct responsibility and their behavior. Blašková et al. (2021) emphasize importance of the role of management in generating value for organizations in effect of creative work and sustaining the creativity in organizations. For the climate of creativity at the level of management support, it is important that managers were role models for their subordinates, employees were given an autonomy in action and decision making, were provided with an adequate support and encouraged to engage in creative activities (Zhou & Shalley, 2008; De Jong & Den Hartog, 2010).

The second group of barriers are referred to 'Knowledge in the organization' and, more specifically, insecurities to the right atmosphere for learning and sustainable development, including knowledge sharing. These behaviors are conditioned by environmental factors and interpersonal relationships. This emphasizes the nature of knowledge and sustainable creativity flowing through social networks. For business, knowledge can be a source of competitive advantage, hence, managers often attempt to figure out how to motivate employees so that there is a free flow of knowledge within the organization. Research has shown that trust leads to increased knowledge sharing. And especially, there exists a spiral effect of motivation when connected with creativity and trust which is accented by the crucial principles of sustainability (responsibility, novelty, usefulness, progress, etc.) (Blašková et al., 2021).

"Organizational constraints" are barriers related to efficiency and functioning of the organization as a whole system, which may or may not foster an atmosphere that encourages creative activities among employees. Slow functioning or unsustainable development of the organization is unlikely to encourage creativity, what is more, routine execution of activities limits the creative potential. Creative processes in an organization should be planned and executed consistently. If approached in a chaotic way, they are limited or even impossible to perform. This mirrors the application of principles of intergenerational and intra-generational equity of sustainable development (Hundloe, 2021). Moreover, flexibility and adaptability are components that play an equally important role in developing sustainably the creative climate. In order to be creative, organizations need to react quickly and proactively to turbulences in the environment. Results achieved by the organization and its competitiveness depend on such organizational skills.

The flexibility and adaptability also apply to people working together. During the pre-incubation phase of ideas and their subsequent vetting, many ideas are proposed, although not all of them will be considered to be those that were expected and those that other collaborators think are worthy of interest. Flexibility in this dimension refers to the ability of a person to adapt to a situation where an idea is not

selected and they are obliged to work together for the good of the team and the organization on another, far better solution. In this, the sustainable creativity development principle of effectiveness (Krynke & Klimecka-Tatar, 2022; Jankal & Jankalová, 2020) and principle of approaching the Society 5.0 (Rosak-Szyrocka et al., 2022) are touched.

Another group of barriers concerning the sense of security is another important attribute characterizing the positive organizational aspect that fosters creativity. Co-workers should feel an atmosphere of trust and openness to be able to exchange ideas freely among themselves. Individuals are more willing to present their ideas when they feel that they will not be ridiculed or punished. Ekvall (1996) proved that a friendly atmosphere, full of joy and laughter, fosters creative attitudes among employees, and vice-versa: "Creativity enables sustainable development" (Awan, 2019).

Subordinates' relations with superiors and interpersonal exchange are important for the development of creativity. Direct superiors should support new and innovative ideas of employees. Relationships should be based on trust, openness and a sense of security. An employee must not feel threatened when proposing new ideas. Employees form a cohesive whole, without experiencing destructive conflicts. It is closely connected especially with the sustainable development principles of social responsibility and continuing cultivation, and then, the creativity could be deeply implanted into the minds as well processes. Conflict, if it exists, should be perceived as a source of inspiration and new opportunities. It is important to emphasize that some conflicts are necessary for a successful group creative process.

From the above discussion and presented research it follows that influence of the above factors on individuals may be different and have a different scale of impact. This is due to the fact that each organization has a different set of co-workers, who are characterized by different personality traits. It is proven that the perception of the person-environment-creativity relationship is conditioned by personality traits and diverse perceptions of the surrounding world. Hennessey and Amabile (1988) confirmed that the same environmental conditions can be perceived differently by people who differ in terms of specific personality dimensions. They compared strongly and weakly creative people who differed from the point of view of intrapersonal characteristics and confirmed that there were higher numbers of creative people among those with a very high prosocial aspect. People, who were more closed and autonomous, did not perceive features of the creative climate as determinants of creativity to the same extent as the group of previously indicated respondents. Surely, "creative thinking is a fast-growing topic among the global community for the way that it enables sustainable development initiatives" (Awan, 2019). And, if inspirational conditions are prepared and all decisions are thoroughly applied, the principle of synergetic and/or multiplicative action is implemented (Blašková et al., 2019).

5. CONCLUSION

Although the issue of creativity has begun to be perceived as an important subject of scientific research in recent years, there are still areas concerning this issue that have not been sufficiently recognized and require in-depth analysis. Issues related to the sustainable development of creativity in knowledge-based organizations have been identified as one such area.

Statistical analysis of the research material allowed to organize the barriers to the sustainable development of creativity in organizations and to qualify them into six groups. Awareness of these barriers and strength of their impact allows KBOs, building their competitiveness on sustainable development of knowledge and creativity, to identify the necessary actions to take in order to eliminate barriers to creativity development. The implementation of the defined 6 key principles of sustainable development can be of considerable help in this area.

A questionnaire survey on barriers to the sustainable development of creativity in knowledge-based organizations yielded interesting information, and the conclusions drawn from analysis thereof became the starting point for developing practical recommendations for managers working in KBOs. Thus,

measures or recommendations that respond to the barriers with the strongest negative impact on the sustainable creativity development include especially:

1. Building employees' motivation for work, with particular emphasis on dignity-based motivation, rather than traditional motivation based on punishment and rewards;
2. Increasing the superiors' motivation to do their job which has a positive impact on the motivation of employees who take a good example from their superiors;
3. Appropriate organizational change management, as the need to go beyond existing organizational routines associated with change fosters creativity;
4. Reducing excessive bureaucracy what gives employees more time for value added activities, including the discovery of new ideas and concepts and taking creative action;
5. Building organizational memory enabling employees to use the existing knowledge of the organization, projects, concepts, etc.;
6. Ensuring that employees are aware of the context of their work, including the organization's mission, vision and plans, which allows them to better understand their place and role in the organization;
7. Ensuring an appropriate flow of information, both in terms of the employee's duties and activities, as well as regarding the organization's action plans;
8. A proactive attitude to new ideas and concepts put forward by employees, making them feel important and valued, which stimulates their proactive attitudes and behaviors.

It should be also remembered that the organizational barriers analyzed in the paper, which restrict creativity in a KBO may also threaten its security. On the other hand, lack of security felt by employees as a result of, among other things, an inappropriate working atmosphere definitely hinders or even prevents the sustainable development of creativity in the organization.

In the context of the conducted study, the most important limitations concern the size of the study sample (so transformation of the results obtained onto the entire population may be subject to error) the issue of methods used. These limitations are the starting point for determining further research directions. On the one hand, it is suggested to further develop diagnostic tools allowing for even better, more detailed research in the scope presented in this study, and on the other hand, to broaden the research group.

REFERENCES

[1] Alsabah, F., & Alshura, M. (2022). The impact of organizational creativity on sustainable development in the Kuwaiti industrial sector. *WSEAS Transactions on Business and Economics, 19*, 494–504. https://doi.org/10.37394/23207.2022.19.45

[2] Amabile, T. M. (1997). Motivating creativity in organizations: on doing what you love and loving what you do. *California Management Review, 40*(1), 39–58. https://doi.org/10.2307/41165921

[3] Amabile, T. M. (1998). How to kill creativity. *Harvard Business Review 1998, 76*(5): 76–87. https://doi.org/10.4135/9781446213704.n2

[4] Awan, U., Sroufe, R., & Kraslawski, A. (2019). Creativity enables sustainable development: supplier engagement as a boundary condition for the positive effect on green innovation. *Journal of Cleaner Production, 226*, 172–185. https://doi.org/10.1016/j.jclepro.2019.03.308

[5] Bennet, A., & Bennet, D. (2003). Designing the knowledge organization of the future: the intelligent complex adaptive system. In C.W. Holsapple (Ed.), *Handbook of Knowledge Management* (Vol. 2, pp. 623–638). Springer Science and Business Media: Amsterdam, Netherlands.

[6] Blašková, M., Majchrzak-Lepczyk, J., Hriníková, D., & Blaško, R. (2019). Sustainable academic motivation. *Sustainability, 11*(21), 5934. https://doi.org/10.3390/su11215934

[7] Blašková, M., Tumová, D., & Mičiak, M. (2022). Taxonomy of factors involved in decision-making to sustain organization members' creativity. *Administrative Sciences, 12*(1), 39. https://doi.org/10.3390/admsci12010039

[8] Blašková, M., Dlouhý, D., & Blaško, R. (2022). Values, competences and sustainability in public security and IT higher education. *Sustainability, 14*(19), 12434. https://doi.org/10.3390/su141912434

[9] Blašková, M., Stachová, K., Ferenc, K., Stacho, Z., & Blaško, R. (2019). Motivation: motivational spirals and decision making, 2nd ed., LAP LAMBERT Academic Publishing: Berlin.
[10] Blašková, M., Tumová, D., Blaško, R., & Majchrzak-Lepczyk, J. (2021). Spirals of sustainable academic motivation, creativity, and trust of higher education staff. *Sustainability, 13*, 7057. https://doi.org/10.3390/su13137057
[11] Brzeziński, M. (2009). Creative organization. PWN. Warsaw. (in Polish)
[12] Ceruti, M., Williams, A., & Bedford, D. (2019). Translating knowledge management visions into strategies (working methods for knowledge management). Emerald Publishing Limited: Bingley. UK.
[13] Chaubey, A., Sahoo, C.K., & Das, K.C. (2022). Examining the effect of training and employee creativity on organizational innovation: a moderated mediation analysis. *International Journal of Organization Analysis, 30*(2), 499–524. https://doi.org/10.1108/ijoa-06-2020-2271
[14] De Jong, J., & Den Hartog, D. (2010). Measuring innovative work behaviour. *Creativity and Innovation Management, 19*(1), 23–36. https://doi.org/10.1111/j.1467-8691.2010.00547.x
[15] Dinh, M., Le, P., & Anh, T. (2022). How to create, maintain, and reinforce students' motivation and engagement in online education: a discussion. *Vietnam Journal of Education, 6*, 55–63. https://doi.org/10.52296/vje.2022.133
[16] Droz, L. (2021). The concept of milieu in environmental ethics. Individual responsibility within an interconnected world. Routledge: London, UK.
[17] Ekvall, G. (1996). Organizational climate for creativity and innovation. *European Journal of Work & Organizational Psychology, 5*(1), 105-123. https://doi.org/10.1080/13594329608414845
[18] Figurska, I. (2019). The concept of a comprehensive approach to knowledge management in the organization. CeDeWu. Warsaw.
[19] Figurska, I., & Sokół, A. (2020). Potential of creative knowledge workers and its development in a sustainable organisation. *European Research Studies Journal, 23*(1), 628–650. https://doi.org/10.35808/ersj/1782
[20] Franková, E. (2011). Creativity and innovation in the organization. Grada, Praha, (in Czech)
[21] Gumusluoglu, L., & Ilsev, A. (2009). Transformational leadership, creativity, and organizational innovation. *Journal of Business Research, 62*, 461–473. https://doi.org/10.1016/j.jbusres.2007.07.032
[22] Hrysenko, M., Pryiatelchuk, O., & Shvorak, L. (2022). Correlation and interaction of economic creativity factors as a determinant of sustainable development (on the example of the EU countries). *Baltic Journal of Economic Studies, 8*, 59–67. https://doi.org/10.30525/2256-0742/2022-8-2-59-67
[23] Holford, W. D. (2019). The future of human creative knowledge work within the digital economy. *Futures, 105*, 143–154. https://doi.org/10.1016/j.futures.2018.10.002
[24] Hennessey, B., & Amabile, T. (1988). The conditions of creativity. In The nature of creativity. Contemporary Psychological Perspectives, Sternberg, R., Ed., Cambridge University Press: Cambridge, UK.
[25] Hundloe, T. (2021). Environmental Impact Assessment. Incorporating Sustainability Principles. Palgrave Studies in Environmental Policy and Regulation. Springer International Publishing.
[26] Jankal, R., & Jankalová, M. (2020). Principles of sustainability and sustainable development. In Proceedings of the 35th International Business Information Management Association Conference (IBIMA), Seville, Spain, 5311–5321.
[27] Julianto, J., Wasis, W., Agustini, R., Suprayitno, S., Rukmi, A., Hidayati, F., & Rahmawati, E. (2022). Creative attitude in science learning model to improve creative thinking skills and positive attitude of students towards science. IJORER: *International Journal of Recent Educational Research, 3*(6), 701–717. https://doi.org/10.46245/ijorer.v3i6.255
[28] Jung, D., Wu, A., & Chow, C. W. (2008). Towards understanding the direct and indirect effects of CEOs' transformational leadership on firm innovation. *The Leadership Quarterly, 19*(5), 582–594. https://doi.org/10.1016/j.leaqua.2008.07.007
[29] Junxia, Z., & Ying, Y. (2022). Multi-dimensional post competency evaluation model in human resource management under the background of artificial intelligence. *Mathematical Problems in Engineering, 2*, 1–10. https://doi.org/10.1155/2022/9730127
[30] Koehorst M. M., van Deursen, A. J., van Dijk, J. A., & de Haan, J. (2021). A systematic literature review of organizational factors influencing 21st-century Skills. *SAGE Open, 11*(4), 1–6. https://doi.org/10.1177/21582440211067251
[31] Krynke, M., & Klimecka-Tatar, D. (2022). Production costs management in process supported by external entities – process flow optimization. Proceedings of 13th International Scientific Conference on Aeronautics,

Automotive and Railway *Engineering and Technologies (BulTrans-2021), 2503*(1), 050068. https://doi.org/10.1063/5.0100420

[32] Kum, F. Y., Lovevin, T., & Hui, S. L. (2022). Core competencies for maritime business educators in the Digital Era. *Frontiers in Psychology, 13*, 915980. https://doi.org/10.3389/fpsyg.2022.915980

[33] Leon, R.D. (2013). From the sustainable organization to sustainable knowledge-based organization. Economic Insights – Trends and Challenges, II (2), 63–73.

[34] Liebowitz, J., & Beckman, T. J. (1998). Knowledge organization. What every manager should know. CRC Press. Boca Raton.

[35] Luu, T. T. (2019). Can diversity climate shape service innovative behaviour in Vietnamese and Brazilian tour companies? The role of work passion. *Tourism Management, 72*, 326–339. https://doi.org/10.1016/j.tourman.2018.12.011

[36] Marić, I., Aleksic, A., & Knežević, M. (2022). Enhancing sustainable development: examining factors that foster creativity and productivity in organizations. *Sustainability, 14*, 9094. https://doi.org/10.3390/su14159094

[37] Marques, P. C. (2016). Building sustainable creativity: a conceptual framework. *European Journal of Sustainable Development, 5*, 433–39. https://doi.org/10.14207/ejsd.2016.v5n3p433

[38] Miar, M., Neneng, S., & Sui, J. M. (2022). The impact Covid-19 outbreak, green finance, creativity and sustainable economic development on the economic recovery in G20 countries. *International Journal of Energy Economics and Policy, 12*(6), 432–440, https://doi.org/10.32479/ijeep.13833

[39] Mikuláštík, M. (2010). Creativity and innovation in the work of a manager. Grada. Praha. (in Czech).

[40] Mikuła, B. (2006). Knowledge-based organizations. Publishing House of the Cracow University of Economics. Cracow. (in Polish)

[41] Mumford, M. D., Scott, G. M., Gaddis, B., & Strange, J. M. (2002). Leading creative people: Orchestrating expertise and relationships. *The Leadership Quarterly, 13*(6) 705–750. https://doi.org/10.1016/S1048-9843(02)00158-3

[42] Neagu, C. D. (2008). Knowledge based organization. An identification model. In S. Fischer-Hithner, P. Doquenoy, A. Zuccato, L. Martucci (Eds.), *The future of identity in the information society* (pp. 407–421). Springer: Boston.

[43] Nonaka, I. (1991). The knowledge creating company. *Harvard Business Review*, *69*, 96–104.

[44] Peteva, J. (2020). The World Customs Organization as a knowledge-based organisation. *World Customs Journal, 14*(2), 109–118.

[45] Prasad, K., & Rao, M. (2022). Sustainable development methodology: a methodical approach to innovation that encourages creativity and strategy in the promotion of organizational alternatives. Journal of Contemporary *Issues in Business and Government, 28*(4), 1443–1453. https://doi.org/10.47750/cibg.2022.28.04.112

[46] Popescu, C. R. Gh. (2021). Measuring progress towards sustainable development goals: creativity, intellectual capital and innovation. In C. Popescu (Ed.), *Handbook of research on novel practices and current successes in achieving the sustainable development goals* (pp. 125–136). IGI Global. https://doi.org/10.4018/978-1-7998-8426-2.ch006

[47] Robbins, S. P., Coulter, M. A., DeCenzo, D. A., & Woods, M. (2009). *Management: The Essentials* (5th ed.). Pearson Education, Melbourne.

[48] Rosak-Szyrocka, J., Apostu, S., Turi, J. A., & Tanveer A. (2022). University 4.0 sustainable development in the way of society 5.0. *Sustainability, 14*, 16043. https://doi.org/10.3390/su142316043

[49] Shin, H. W., Picken, J. C., & Dess, G. (2017). Revisiting the learning organization: How to create it. *Organizational Dynamics, 46*(1), 46–56. https://doi.org/10.1016/j.orgdyn.2016.10.009

[50] Skrzypek, E. (2016). Knowledge-based organizations in the conditions of the new economy. In: Concepts in organization management in the face of the challenges of the modern economy, Cisek, M., Korneć, R., Eds., University of Natural Sciences and Humanities: Siedlce, 11–25. (in Polish)

[51] Sokół, A. (2015). Managing creativity in the organization. Concept, methods and tools. CeDeWu. Warsaw. (in Polish)

[52] Souto, J. E. (2022). Organizational creativity and sustainability-oriented innovation as drivers of sustainable development: overcoming firms' economic, environmental and social sustainability challenges. *Journal of Manufacturing Technology Management, 33*(4) 805–826. https://doi.org/10.1108/JMTM-01-2021-0018

[53] Schulz, K-P., & Mnisri, K. (2020). Pathways towards connecting creativity and sustainability. Presses Universitaires Nancy. Nancy.

[54] Strenitzerová, M., Čorejová, T., & Stalmachová, K. (2022). Managing the motivation of university teachers during a pandemic for ensuring their well-being at the University of Zilina. *Proceedings of 14th International Conference on Education and New Learning Technologies,* 3000–3010. https://doi.org/10.21125/edulearn.2022.0755

[55] Shaukat, F., & Ming, J. (2022). Green marketing orientation impact on business performance: case of pharmaceutical industry of Pakistan. *Frontiers in Psychology, 13*, 940278. https://doi.org/10.3389/fpsyg.2022.940278

[56] Sokół, A., & Figurska, I. (2021). The importance of creative knowledge workers in creative organization. *Energies, 14*(20), 6751, 1–25. https://doi.org/10.3390/en14206751

[57] Sroufe, R. (2017). Integration and organizational change towards sustainability. *Journal of Cleaner Production, 162*, 315–329. https://doi.org/10.1016/j.jclepro.2017.05.180

[58] Ulewicz, R., & Blašková, M. (2018). Sustainable development and knowledge management from the stakeholders' point of view. *Polish Journal of Management Studies, 18*(2), 397–408. https://doi.org/10.17512/pjms.2018.18.2.31

[59] Wang, A. C., & Cheng, B. S. (2010). When does benevolent leadership lead to creativity? The moderating role of creative role identity and job autonomy. *Journal of Organization Behaviours, 31*, 106–121.

[60] Wiig, K. M. (2000). The Intelligent Enterprise and Knowledge Management. 2000. Available from: http://surl.li/osljg (Accessed on 16 April 2019)

[61] Yannan, Y., & Zhengyu, M. (2022). Research on the optimization of college teachers' flow management strategy under the support of artificial intelligence technology. *Wireless Communications and Mobile Computing, (3)*, 1–11. https://doi.org/10.1155/2022/3951659

[62] Zack, M. H. (2003). Rethinking the Knowledge-Based Organization. *MIT Sloan Management Rewiev, 44*(4), 67–71.

[63] Zhang, L., Guo, X., Lei, Z., & Lim, M.K. (2019). Social network analysis of sustainable human resource management from the employee training's perspective. *Sustainability, 11*(2), 380, https://doi.org/10.3390/su11020380

[64] Zhou, J., & Shalley, C. E. (2008). *Handbook of Organizational Creativity*, Lawrence Erlbaum Associates: New York, USA.

[65] West, M. A., & Sacramento, C. A. (2008). Flourishing teams: developing creativity and innovation. In J. Henry (Ed.), *Creative Management and Development* (pp. 25–44.). Sage: Los Angeles, USA.

Martina Blašková, Prof. Ing., Ph.D., Full Professor at Faculty of Security Management, Police Academy of the Czech Republic in Prague, Czech Republic;
ORCID ID: 0000-0003-2760-9724
Aneta Sokół, Ph.D., Assistant Professor at Faculty of Economics, Finance and Management, University of Szczecin, Poland;
ORCID ID: 0000-0002-4675-2182
Irena Figurska, Ph.D., Assistant Professor at Institute of Management, Pomeranian University in Słupsk, Poland;
ORCID ID: 0000-0001-7421-4157
Address: Martina Blašková, Police Academy of the Czech Republic in Prague, Faculty of Security Management, Lhotecká 559/7 Str., P. O. Box 54, 143 01 Prague 4, Czech Republic.
Aneta Sokół, University of Szczecin, Faculty of Economics, Finance and Management, Mickiewicza 64 Str., 71-101 Szczecin, Poland.
Irena Figurska, Pomeranian University, Institute of Management, Kozietulskiego 6 Str., 76-200 Słupsk, Poland.
E-mail: blaskova@polac.cz , aneta.dorota@wp.pl , irena.figurska@upsl.edu.pl
Received: November 27, 2023; **revised:** December 05, 2023; **accepted:** December 09, 2023; **published:** December 31, 2023.

(2023), 46-62.

Турбулентність організаційного середовища суттєво впливає на функціонування креативних організацій, заснованих на знаннях. Зміни, які відбуваються в цих малодосліджених середовищах, часто непередбачувані, тому до них неможливо підготуватися. Реагуючи на ці зміни, організації повинні креативно використовувати свої знання. Таким чином, дослідження питання організаційних бар'єрів сталого розвитку креативності в організаціях, заснованих на знаннях є надзвичайно важливим. У роботі аналізуються та узагальнюються теоретичні підходи (щодо сутності організації, заснованої на знаннях, сталого розвитку креативності в організаціях та бар'єрів, які перешкоджають цьому розвитку), обробляються емпіричні дані, перевіряються гіпотези, а також надаються висновки та пропозиції для організацій заснованих на знаннях щодо мінімізації бар'єрів, що впливають на сталий розвиток креативності. В емпіричній частині використовуються: коефіцієнт кореляції Спірмена, критерій хі-квадрат, критерій Манна-Уїтні, критерій У. Вілкоксона та простий факторний аналіз. Результати дослідження показали суттєві відмінності в таких бар'єрах сталого розвитку креативності як: відсутність знань про бачення, цілі та плани організації, поганий фінансовий стан організації та страх презентувати власні ідеї. Використовуючи зазначені статистичні інструменти вдалося 28 первинно визначених бар'єрів розбити на шість різнорідних категорій – груп бар'єрів, що обмежують сталий розвиток креативності в організаціях, заснованих на знаннях. Результати дослідження дозволили визначити напрями вдосконалення, що сприятимуть більш ефективному розвитку організації. Стаття завершується рекомендаціями, які відповідають бар'єрам, які мають найбільший негативний вплив на сталий розвиток креативності.

Ключові слова: креативність, організація заснована на знаннях, стійкий розвиток креативності, організаційні бар'єри, менеджмент.