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## Evaluation of the Impact of the BANI World on Small Business Innovation Activities

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**Abstract:**

**Purpose:** Modern enterprises operate in a BANI world – brittle, anxious, non-linear and incomprehensible. Confronted with such a complex reality, they should base their actions on innovation and entrepreneurship. The article aims to present theoretical considerations and the results of empirical studies on the impact of the BANI world components on small business innovation activities.

**Design/methodology/approach:** Three methods were used in the research. The document analysis method consisted of a literature critical analysis and was used to develop the methodological assumptions of the empirical study. It was conducted using a brainstorming method and a diagnostic survey method using an interview technique. The respondents were representatives of 6 small businesses from different industries.

**Findings:** The research allowed to clarify the essence of the various components of the BANI world with the help of environmental factors selected by experts. Entrepreneurs' opinions were obtained as to how and with what force each factor affects the innovative activities of their enterprises. It was shown that the impact of the BANI world components is positive but insignificant. In some industries, it supports the innovation process, while it inhibits it in others.

**Practical implications:** The main practical effect of the presented research is to understand how exogenous changes described by the BANI concept affect innovation processes in small businesses. The information obtained can form the basis for developing recommendations on what actions can be taken to survive and develop in a dynamically changing, unpredictable environment.

**Originality/value:** The article is based on existing knowledge of the BANI world. It is presented in the available literature in a descriptive, qualitative way. The study's originality involves characterizing each of its components with specific environmental factors. This allowed assessing the strength and direction of the impact of each component on the innovative activities of enterprises.

**Keywords:** Innovation, changes, business environment, entrepreneurship.

**JEL codes:** F01, L26, O31

**Paper type:** Research article.

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## **1. Introduction**

With the constantly changing business environment, small businesses have many challenges to confront. Turbulent times bring new problems that require not only the ability to adapt but also the ability to anticipate and react quickly to various factors. The modern world is described using the BANI concept, created in 2020 by Cascio (Miernik, 2023) as an expansion and update of the VUCA concept that has existed since the Cold War. Both models emphasize the current times' complexity and the unpredictability and variability of the conditions in which companies operate. They also provide several tips on how to proceed to survive, achieve set goals and develop.

In the available scientific literature, there are few studies on the impact of the BANI (B – brittle, A – anxious, N – non-linear, I – incomprehensible) world concept on the functioning of business entities. It requires companies to develop a new management approach that relies on flexibility, empathy and the ability to operate under uncertain conditions. Owners and managers should rethink strategies and approaches and develop new mechanisms for dealing with the latest, more complex reality.

Traditional methods and tools that worked well in the VUCA era may no longer suffice today. Adapting to the determinants of the BANI concept can be crucial to achieving long-term success in a rapidly changing business environment full of uncertainty and serious global challenges.

The world of BANI is significantly influencing business entities' innovation activities, challenging and opening up new opportunities. In an environment where any seemingly insignificant action can have sudden and unpredictable consequences, companies are forced to innovate faster to meet competition. They should be prepared for the fact that not every innovation will be successful. Regardless, they must be willing to experiment and take risks to explore new possibilities.

Are the executives of modern companies ready to function in the world of BANI? Are owners and managers aware of the new challenges? To answer these questions, a pilot study was conducted to assess the impact of the BANI world components on the innovation activities of small businesses.

## **2. Assumptions of the BANI World Concept**

The BANI concept is a new model reflecting the unpredictable and uncertain nature of the modern world. It assumes that the parameters defining reality, according to the VUCA concept, have evolved and become even more complicated.

The acronym VUCA was introduced by the United States Army Military Academy in 1987 after the end of the Cold War. In business aspects, the VUCA model became operational shortly after the 2008-2009 global financial crisis (Projekt Gamma,

2024). It was created based on Bennis and Nanus' (2009) leadership theory to assess the impact of components such as volatile (V), uncertain (U), complex (C) and ambiguous (A) on overall business conditions and situations (U.S. Army..., 2022).

In the nearly four decades since the concept of VUCA was conceived, the world has fundamentally transformed. All systems, from global trade and information networks to personal connections linking co-workers, families, friends, have changed and will continue to change. The current situation of political chaos, climate catastrophe, global pandemics and various problems arising in many other spheres of life clearly shows that the VUCA paradigm as a description of reality is no longer sufficient (Grabmeier, 2020).

Cascio, analyzing several events related to the COVID-19 pandemic and post-pandemic circumstances, proposed in 2020 to consider the phenomena and problems of the modern world according to the concept of BANI (Miernik, 2023). The components of the BANI world can be described as follows (Grabmeier, 2020):

- *B (brittle)*: modern political, economic, financial, energy, environmental and other systems are closely linked. The failure of one of them causes disorders and disasters in others. The drive to maximize profits in every area of life contributes to the lack of effective systems to prevent failures of various kinds. What seemed certain, reliable and even indestructible may turn out to be brittle tomorrow. Any area of the economy could collapse, which will have a ripple effect with negative global consequences.
- *A (anxious)*: anxiety in all spheres of life together with the increasing fragility of the world leads to a sense of helplessness and an inability to make decisions, since every available choice could potentially turn out to be wrong. The supposition that further difficulties will occur leads to a sense of helplessness, followed by passivity. Anxiety can be triggered by a vast amount of information, data, facts that are difficult to process, as well as by misinformation and fake news. Everything certain until now is no longer so.
- *N (non-linear)*: in a non-linear world, the principle of causality loses its meaning – a linear chain of cause and effect becomes non-linear. Cause and effect don't quite match. Decisions that seem minor, or marginal, have disproportionately large (beneficial or not) effects. A great effort, from which significant results were expected, may yield no results and even worsen the situation. The full effects of any cause may manifest themselves immediately or with a huge delay.
- *I (incomprehensible)*: non-linearity leads to the fact that the consequences of decisions often seem devoid of any logic or purpose – they are incomprehensible. Having more information and data is not the same as finding answers to the questions that arise.

The 2020 crisis caused by the pandemic had a much deeper and existential character. The BANI concept presents a more pessimistic view of the world and shows that organizations constantly need to adapt and respond to change. The role of executives

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is becoming crucial, charged with building such a management system for the organization to respond agilely to the needs of the surrounding reality (Szczepanik and Wieczorek, 2023).

Managers should be prepared for risk, work under uncertainty and change elements of strategy depending on the situation. They are to be flexible and adapt to new challenges and opportunities. Decision-making should be consistent and inclusive, considering different perspectives and ways of thinking. The constant threat of crises and the lack of a proven algorithm for responding to them significantly increase the stress levels of all crew members. Therefore, managers should have a sufficient emotional intelligence level, which helps to be effective, unite the team and enhance motivation for action (Chursinova, Stebelska, 2021).

They must be prepared to communicate and collaborate effectively with teams where there is a constant flow of members, and they must be able to create and maintain strong interpersonal relationships (Daugherty, 2019). It becomes necessary to implement a pro-innovation organizational culture that is based on diversity, equality and inclusion. This requires managers and employees of the organization to master such competencies as resilience, empathy, adaptability and unconventional thinking in the face of unpredictable and incomprehensible changes.

The BANI model in itself is not a solution to strategic problems or help to achieve better results in today's chaotic world. Cascio (2022) believes that BANI is meant to motivate organizational leadership to find unconventional solutions and approaches in a brittle, anxious, non-linear and incomprehensible world. Fragility requires capacity building and resilience; anxiety requires empathy and attentiveness; non-linearity requires contextual understanding and adaptation; incomprehensibility requires foresight and intuition.

### **3. Challenges of the BANI World for Small Businesses: Innovation**

The BANI concept shows the reality in which organizations operate and will continue to operate. Therefore, they need to accept it for what it is, and then plan what actions to take and what competencies to develop to confront its challenges more courageously and effectively. This requires basing business strategy on innovation. The innovation concept was introduced into the economics and management literature by Shumpeter (1960).

He defined them as a key driver of economic development, emphasizing the role of entrepreneurs as “creative disruptors” who introduce new products, technologies, production methods, markets and organizations, thereby contributing to dynamic economic development. Innovation activities are at the core of corporate renewal and resilience. Its main element is the transformation of ideas into reality, capable of generating business value (Shumpeter, 1960). Creativity and the ability to generate interesting and useful ideas are important factors in innovation activities.

However, the idea itself is of little value if it is not implemented. Not until innovation is put into practice does an enterprise have the opportunity to reap the benefits. Therefore, the starting point for innovation activities is creativity (Panasiewicz, 2021).

Operating in the BANI world is particularly difficult for small businesses due to limited resources including competence. However, their owners and managers can use the assumptions of this concept to develop a sustainable development strategy (Bushuyev *et al.*, 2023; Havlicek *et al.*, 2013).

The literature uses qualitative and quantitative criteria to define small businesses (Danielak, Mierzwa, and Bartczak, 2017):

- qualitative: based on management systems characteristics, organizational structure, innovation level and decision-making in the company;
- quantitative: refers to aspects of the company that are measurable including: employee numbers, turnover amount, assets, and total annual turnover and annual balance sheet.

The quantitative criteria for classifying enterprises into specific size groups are specified in the Entrepreneurs' Law Act of 2018 (Prawo przedsiębiorców, 2018). Qualitative criteria refer to the essence of small business and show its specificity.

The characteristics of small businesses include (Borkowski, 2014; Mieszajkina, 2018):

- unity of ownership and management;
- the dominant role of the entrepreneur's personality and competence;
- concentration of activities on selected markets and market niches;
- direct contacts with stakeholders;
- ability to adapt to the volatility of market trends, environment and customer requirements;
- diversity of business operations methods;
- flat organizational structure;
- organizational culture focused on meeting individual customer needs;
- taking the risk of creating mostly short-term, product or service innovations;
- development determined by the effectiveness of the management and the owner's competence level.

Some peculiarities of small businesses may favor innovative activities. These may include flexibility; speed of decision-making; low degree of formalization; possibility to take advantage of development programs dedicated to small businesses. However, others significantly complicate the innovation process, limited resources; low level of professionalism in innovation management; short-term rather

than strategic orientation; owner involvement mainly in current affairs (Kozioł-Nadolna, 2015; Mieszajkina, 2018).

According to Central Statistical Office (CSO) data, in 2020-2022, 32.2% of small businesses implemented innovations (Skowrońska and Tarnawa, 2024). The fact that only one in three units is implementing an innovation process may indicate the low innovative potential of small businesses.

Innovation potential is those resources that companies should have at their disposal to successfully create and commercialize innovations (Zastempowski, 2010). According to Oksanych (2020, p. 36), it is a „system of interrelated resources used and resources available but not used by the enterprise, which determines the possibilities, scope, methods, techniques and efficiency of conducting innovative activities”. Different criteria are used to identify and analyze it, depending on the research objectives. Table 1 presents Kozioł-Nadolna (2015) approach.

**Table 1.** *Small businesses' innovation potential*

<b>Types of innovation potential</b>	<b>Potential components</b>	<b>Level</b>
Human potential	number of employees	low
Knowledge potential	qualifications, employee competence, experience	high
Financial potential	own financial resources	low
Financial potential	possibility of obtaining external funding	low
Material potential	technologies, machinery, equipment, modernization degree	low or medium
Organizational potential	leadership style, organizational structure, organizational culture, interpersonal ties	high
Research potential	research laboratories, technology offices, design offices, research and development sphere, R&D expenditures	low
Patent potential	patents obtained, possibility of obtaining a patent	low

*Source:* Own elaboration based on Kozioł-Nadolna, 2015.

The modern, turbulent environment of the BANI world requires companies to respond quickly to changing technologies and markets. The ability to continuously innovate in terms of product, process and organizational innovation is crucial. To a large extent, this ability depends on the availability of potential ideas and solutions that drive the innovation process (Bushuyev, 2024).

In the face of dynamic and unpredictable changes, companies should base their strategies and business models on innovation to respond flexibly to changing market conditions. A systemic and consistent approach to introducing new solutions will

enable management to manage more effectively in brittle and inconsistent situations. Seeing change as a desirable phenomenon rather than a threat is essential in the BANI world to transform barriers and impediments into new opportunities. Focusing on continuous knowledge and information acquisition will allow small businesses to better navigate in a non-linear and incomprehensible environment.

Developing employees' ability to act creatively, introducing modern management methods will increase the ability to identify best business practices, adapt to change and effectively implement innovations. Valuable ideas can come from a variety of often surprising sources, both internal and external, enabling organizations to better adapt to unexpected change and uncertainty (Mieszajkina, 2018).

#### **4. Research Methodology**

The research was conducted using a procedure consisting of the following steps: formulating the research problem, posing research questions, defining the research objective and research hypotheses, and selecting appropriate research methods and techniques.

The research problem is: Do the components of the BANI world have an impact on the innovation activities of small businesses, and if so, what impact? The following research questions were posed to the thus formulated problem:

- *Based on what parameters can the different components of the BANI world be evaluated?*
- *How do the various components of the BANI world interact with the operation of small businesses?*
- *Which of the components of the BANI world has the strongest and which has the weakest impact on the innovation activities of small businesses?*

The research aims to determine the evaluation parameters of the various components of the BANI world and to assess their impact on the innovation activities of small businesses.

For the purposes of this article, the following hypotheses have been formulated:

- **H1:** *The “anxious” component has the greatest positive impact on small businesses innovation activities;*
- **H2:** *The “incomprehensible” component has the greatest negative impact on small businesses innovation activities;*
- **H3:** *The “fragility” component has a neutral effect on small business innovation activity;*
- **H4:** *The impact of the components of the BANI world is more positive in the construction industry, and more negative in the event industry.*

Three methods were used to conduct the research: the literature critique method, brainstorming and a diagnostic survey.

The use of the literature criticism method allowed the formulation of research assumptions and the preparation of the research tool. An in-depth literature analysis of the BANI world and its impact on social and economic processes, as well as scientific publications on the determinants of innovation activity in small business, was conducted. Brainstorming was used to develop parameters for evaluating the BANI world components. In April 2024, invitations were sent to 15 experts from different areas to participate in the research. The team meeting was held on May 7, 2024. The diagnostic survey method, an IDI (Individual In-depth Interview) technique, provided an opportunity to collect the data necessary to verify the hypotheses.

The interview questionnaire, created based on the brainstorming results, included four lists of parameters to assess the impact of each BANI world component on a company's innovation activities. A scale from “-2” (strong negative impact) to “2” (strong positive impact) was used to evaluate the parameters, with “0” indicating no impact.

Six entrepreneurs from different industries took part in the survey. The entities they represented fulfilled the criteria set for small businesses in the Act of March 6, 2018 – Entrepreneurs' Law and demonstrated the conduct of innovative activities. The survey was anonymous, therefore respondents were assigned codes R1-R6. The respondents' structure is presented in Table 2.

*Table 2. Respondents' characteristics*

<b>Respondent</b>	<b>Industry</b>	<b>Location</b>	<b>Number of employees</b>
R1	Energy/IT industry	Lublin	20
R2	Consulting industry	Lublin	13
R3	Event/entertainment industry	Lublin	14
R4	E-commerce industry	Warszawa	10
R5	Construction industry	Lublin	24
R6	Cosmetics industry	Lublin	11

*Source: Own elaboration.*

The interviews were conducted in May 2024: 3 – directly at the company's headquarters, 3 – online using the Microsoft Teams platform.

## **5. Research Results and Analysis**

A brainstorming method was used to answer the first research question. Its application provides three stages (Encyklopedia Zarządzania, 2024). The first was



the preparation stage, in which a set of parameters was developed to evaluate each component. It was conducted based on a literature analysis of the impact of the environment on small business operations. The results of Zastempowski's (2017) research were adopted as the basis. 38 environmental factors that affect small business operations and their innovation activities are listed.

The tool constructed in this way allowed for the second stage of brainstorming, which is the idea session. Eight experts were appointed to conduct it. According to Boateng et al. (2018) , the team should be heterogeneous, including people from different specialities, and the size should be between 5 and 15 people. These principles have been fulfilled. The session was attended by research, teaching and teaching staff of the Faculty of Management at the Lublin University of Technology, who are experts in areas such as entrepreneurship, management in the SME sector, designing and implementing innovations, change management, and marketing.

The moderator was one of the Authors, who presented the concept of the BANI world and the purpose of the team's work. As a result of the discussion, the environmental factors contained in the sheet were assigned to the individual components of the BANI world. Experts then analyzed each component, checking that the factors assigned to it were correctly matched and fully described. After making corrections and additions, the session was summarized.

The third stage of brainstorming was the idea evaluation, conducted by the authors. A tool has been prepared to implement further research. The factors describing the individual components of the BANI world are included in Table 3.

The data obtained during the interviews allowed for assessing the strength and direction of the impact of the individual BANI world components on small enterprises' innovation activities. To verify hypotheses H1-H3, respondents' evaluations were summarized (Tables 3-6). They presented the aggregate ratings of entrepreneurs and the sums brewed for the strength of each factor impact and the total sum of ratings for a specific BANI world component.

**Table 3.** *Impact of brittle component on small business innovation activities according to respondents*

No.	Environmental factors	Weighted sum of evaluations	Respondents' evaluations				
			-2	-1	0	1	2
1	Exchange rate variability	1	0	0	5	1	0
2	Ecological disasters	-1	0	1	5	0	0
3	Inflation	-2	2	2	0	0	2
4	The speed at which new inventions appear	7	0	0	1	3	2
5	Cryptocurrency exchange rate variability	-2	1	0	5	0	0
6	Population mobility	0	0	2	3	0	1
7	Political and economic situation in Central	0	1	2	1	0	2

	and Eastern Europe (Ukraine)						
8	Refugee migration from Ukraine	5	0	0	2	3	1
9	Hacking attacks	-7	3	1	2	0	0
10	Internet haterade (organization image)	0	0	2	2	2	0
<b>Total evaluation sum</b>		<b>1</b>					

Source: Own elaboration.

The “brittle” component was assessed using 10 ambient factors. Hacking attacks have the most negative impact (weighted sum: -7), while the most positive impact is the rate of new inventions appearing (weighted sum: 7). The total score for this component is 1, indicating its low positive impact.

**Table 4.** Impact of “anxious” component on small business innovation activities according to respondents

No.	Environmental factors	Weighted sum of evaluations	Respondents' evaluations				
			-2	-1	0	1	2
1	Artificial intelligence development	3	0	0	3	3	0
2	Technique and technology development speed	7	0	0	0	5	1
3	Variability of the law and clarity of its rules	-4	2	2	1	0	1
4	Variability of tax regulations	-4	2	2	0	2	0
5	Speed of economic development in Poland	2	0	2	1	2	1
6	Company's geographical location	-1	1	1	2	2	0
7	Competition in international markets	1	0	0	5	1	0
8	COVID-19 Pandemic	2	0	3	0	1	2
9	Availability of employees with specific qualifications	2	0	2	1	2	1
10	Globalization processes	2	0	0	4	2	0
11	The economic situation in Europe	2	0	1	3	1	1
12	Natural resource availability	3	0	0	4	1	1
<b>Total evaluation sum</b>		<b>15</b>					

Source: Own elaboration.

Twelve environmental factors were used to assess the “anxious” component. Two of these are most negatively affected: the law's variability and the clarity of its rules, and the tax regulations' variability (weighted sum: -4). In a very positive way – the pace of development of techniques and technologies (weighted sum: 7). The total score for this component is high: 15, indicating its significant positive impact on the innovative activities of enterprises.

**Table 5.** Impact of “non-linear” component on small business innovation activities according to respondents

No.	Environmental factors	Weighted sum of evaluations	Respondents' evaluations				
			-2	-1	0	1	2
1	Population's lifestyle (potential customers)	3	1	0	1	3	1

2	Infrastructure condition (roads, railroads, water supply, electricity networks)	5	0	1	1	2	2
3	Telecommunications infrastructure condition (Internet connectivity and broadband speeds)	8	0	0	1	2	3
4	Polish economy internationalization	3	0	0	3	3	0
5	Eastern markets and their availability	-2	0	2	4	0	0
6	Work ethic	3	0	2	1	1	2
7	Values, norms of behavior (ethical, moral)	1	0	2	2	1	1
<b>Total evaluation sum</b>		<b>21</b>					

Source: Own elaboration.

The “non-linear” component was assessed based on 7 environmental factors. Only one of them – Eastern markets and their accessibility in the respondents' opinion has a moderate negative impact (weighted sum: -2). Conducting innovative activities is favored by the state of the telecommunications infrastructure, the weighted sum for this factor is 8. The total score is very high at 21, which means that this component of the BANI world has a significant positive impact on the companies' innovation activities.

**Table 6.** Impact of “incomprehensible” component on small business innovation activities according to respondents

No.	Environmental factors	Weighted sum of evaluations	Respondents' evaluations				
			-2	-1	0	1	2
1	Clarity of criteria for obtaining European funds (e.g. Innovative Economy Operational Programme)	-6	3	1	1	1	0
2	Quality of support for business environment institutions	-1	1	0	4	1	0
3	Innovation policy (National Innovation System, Regional Innovation Systems)	0	0	2	3	0	1
4	European Union Policy	1	0	1	4	0	1
5	Quality of financial support for SME development	6	0	0	1	4	1
6	Quality of institutional support for SME development	3	0	0	3	3	0
7	Population education level	0	1	1	1	3	0
8	Antitrust policy	-1	1	0	4	1	0
9	Patent and utility model protection	2	0	1	2	3	0
<b>Total evaluation sum</b>		<b>4</b>					

Source: Own elaboration.

The “incomprehensible” component was assessed using 9 environmental factors. The highest negative rating was given to the clarity of the criteria for obtaining European funds (weighted sum: -6). The highest positive rating – for the quality of financial support for SME development (weighted sum: 8). This component has a

total score of 4, indicating a slight positive impact on the innovation activities of enterprises.

The data obtained allow us to address the accepted hypotheses 1-3:

– H1 assumed that the “anxious” component had the greatest positive impact on small businesses innovation activities. However, a comparison of the total sums of respondents' evaluations showed that the “non-linear” component received a higher positive sum (21 against 15). In the case of the “anxious” component, among the 12 factors, 9 are conducive to conducting innovative activities, and 3 are hindering. In the case of the “non-linear” component, of the 7 factors, only 1 was found to be obstructive. Therefore, there is a basis for rejecting the hypothesis;

– H2 stated that the “incomprehensible” component had the greatest negative impact on small businesses' innovation activities. According to the interviews, the highest negative ratings from respondents were obtained for the components “brittle” (4 out of 10) and “incomprehensible” (3 out of 9). However, none of the components of the BANI world received a negative total score. Therefore, H2 should be rejected, since the component mentioned in it has a small but positive impact;

– H3 assumed a neutral impact of the “brittle” component on small business innovation activities. Respondents stated that 3 environmental factors describing this component had a positive impact, 4 had a negative impact, and 3 had a neutral impact. The total sum of ratings was 1, this is the smallest sum among the other components. Therefore, it can be concluded that the hypothesis was confirmed.

To verify hypothesis 4, respondents' answers were compiled for components of the BANI world (Table 7).

**Table 7.** Respondents' assessments of the BANI world components

BANI world components		Respondents' evaluations				
		-2	-1	0	1	2
Brittle environmental factors	B1			R1, R2, R3, R4, R6	R5	
	B2		R2	R1, R3, R4, R5, R6		
	B3	R2, R3	R4, R6			R1, R5
	B4			R4	R2, R3, R5	R1, R6
	B5	R5		R1, R2, R3, R4, R6		
	B6		R1, R6	R2, R3, R4		R5
	B7	R3	R2, R4	R6		R1, R5
	B8			R2, R4	R3, R5, R6	R1
	B9	R1, R3, R5	R4	R2, R6		
	B10		R3, R6	R2, R4	R1, R5	
environmental	A1			R4, R5, R6	R1, R2, R3	
	A2				R1, R2, R4, R5, R6	R3

	A3	R2, R3	R4, R6	R5		R1	
	A4	R2, R3	R4, R6		R1, R5		
	A5		R2, R3	R4	R1, R6	R5	
	A6	R3	R2	R1, R4	R5, R6		
	A7			R1, R2, R3, R4, R6	R5		
	A8		R1, R3, R6		R2	R4, R5	
	A9		R2, R3	R4	R1, R6	R5	
	A10			R1, R3, R5, R6	R2, R4		
	A11		R3	R1, R2, R4	R6	R5	
	A12			R1, R2, R3, R4	R6	R5	
	Non-linear environmental factors	N1	R3		R1	R2, R4, R6	R5
		N2		R3	R1	R2, R6	R4, R5
N3				R3	R2, R6	R1, R4, R5	
N4				R1, R3, R4	R2, R5, R6		
N5			R2, R3	R1, R4, R5, R6			
N6			R2, R3	R4	R5	R1, R6	
N7			R2, R3	R4, R5	R6	R1	
Incomprehensible environmental factors	I1	R1, R2, R3	R6	R4	R5		
	I2	R1		R2, R3, R4, R6	R5		
	I3		R2, R3	R1, R4, R6		R5	
	I4		R2	R1, R3, R4, R6		R5	
	I5			R4	R2, R3, R5, R6	R1	
	I6			R1, R2, R4	R3, R5, R6		
	I7	R3	R2	R4	R1, R5, R6		
	I8	R3		R1, R2, R4, R6	R5		
	I9		R3	R4, R6	R1, R2, R5		

**Source:** Own elaboration.

Table 7 shows that a few environmental factors (17) constitute a significant obstacle to the innovation activities of the surveyed enterprises. The highest number of “-2” ratings was observed in the case of the event industry representative (R2) – 10. Significantly fewer such ratings were given by respondents representing the consulting (R2) – 4, energy/IT (R1) – 3 and construction (R5) – 2 industries.

More environmental factors (28) are conducive to innovation development. The highest number of “2” ratings came from respondents in the construction industry (R5) – 13 and energy/IT (R1) – 9. There were very few such assessments in other industries.

To compare the impact of the BANI world on the innovation activities of companies in different industries, Table 8 includes the number of ratings of respondents within each component and the weighted average ratings.

**Table 8.** Respondents' assessments of each BANI world component's impact by industry

Industry	BANI world components																			
	Brittle					Anxious					Non-linear				Incomprehensible					
	-2	-1	0	1	2	-2	-1	0	1	2	-2	-1	0	1	2	-2	-1	0	1	2
R1: Energy/IT industry	1	1	3	1	4	0	1	5	5	1	0	0	4	0	2	2	0	4	2	1
weighted average	0.60					0.50					0.86				0.00					
R2: Consulting industry	1	2	6	1	0	2	3	3	4	0	0	3	0	4	0	1	3	3	2	0
weighted average	-0.30					-0.25					0.14				-0.33					
R3: Event/entertainment industry	3	1	4	2	0	3	4	3	1	1	1	4	2	0	0	3	3	2	2	0
weighted average	-0.50					-0.58					-0.86				-0.67					
R4: E-commerce industry	0	3	7	0	0	0	2	7	2	1	0	0	4	1	2	0	0	7	0	0
weighted average	-0.30					0.17					0.71				0.00					
R5: Construction industry	2	0	1	4	3	0	0	2	4	5	0	0	2	2	3	0	0	0	7	2
weighted average	0.80					1.17					1.14				1.22					
R6: Cosmetics industry	0	3	5	1	1	0	3	3	6	0	0	0	1	5	1	0	1	5	3	0
weighted average	0.00					0.25					1.00				0.22					

*Source:* Own elaboration.

Representatives of different industries perceive differently the impact of the BANI world components on their innovation activities. The brittle environment is the biggest obstacle in the events industry, slightly less so in the consulting and e-commerce industries. In the construction and energy/IT industries, the environmental factors attributed to this component are conducive to innovation.

Anxiety in the environment hinders innovation activities in the event and consulting industries. A relatively significant positive impact was noted in the construction industry. The non-linearity of the environment is quite conducive to innovation activities by the surveyed entities in all industries, except events. The incomprehensibility of the environment fairly stimulates the innovation process in the construction industry, while it inhibits it in the event industry.

Table 8 data indicates that representatives of the construction, energy/IT and cosmetics industries experience a positive, innovation-inducing impact from the environment. The weighted average ratings for all components of the BANI world are positive. Only one component was negatively rated by an e-commerce entrepreneur.

The reality of BANI hinders innovation activities in the event industry the most, all weighted average ratings are negative. The consulting industry representative also negatively assessed the environment's impact, with only one component receiving a positive weighted average rating. Therefore, there is no basis for rejecting H4.

In conclusion, the entrepreneurs participating in the survey are not afraid of what the new reality of BANI may bring. They believe that some exogenous processes support and others hinder the implementation of the innovation process, but their impact on most of the surveyed environmental factors is not very strong.

Therefore, it can be assumed that changes occurring outside the companies, encourage, and perhaps sometimes force respondents to conduct activities of an innovative nature.

## **6. Conclusions**

The issue addressed in the article is extremely broad and important due to the speed and complexity of changes occurring in the business environment and the emergence of a new reality image—the world of BANI. Conducting research to assess the impact of this new world on the operations of small entrepreneurs is essential to help owners and managers:

- 1) understand the essence of the changes occurring;
- 2) recognize what areas need to be developed to better deal with the new challenges;
- 3) elaborate ways of operating in an environment where once-familiar patterns are beginning to disintegrate, while new ones are just taking shape;
- 4) realize the need for continuous development of their own and their staff's competencies.

Conducted interviews indicated that entrepreneurs had not previously encountered the concept of the BANI world, only one of them knew what the acronym referred to. Presenting business reality in such a way aroused their interest. Representatives of various industries participated in the survey, their assessments concerning the various components of the BANI world differed.

The presented study was a pilot and has some limitations. Due to the small number of respondents, it does not provide the opportunity to make generalizations and comparisons. However, it reveals what a complex concept the world of BANI is and provides inspiration for further research.

In a brittle, anxious, non-linear and incomprehensible world, the ability of companies to create and implement innovations is essential to actively functioning in the market. Dealing with the conditions of the BANI world requires using a proactive management approach, which involves anticipating and preventing problems and seizing opportunities earlier than others notice them.

This is the attitude of innovative, entrepreneurial organizations that are quick to grasp and respond to emerging opportunities and demonstrate a willingness to deviate from existing, non-modern practices and ways of functioning. Such organizations are more likely to function successfully in the BANI world because

they are flexible and adaptable, take a creative approach to problem solving, are development-oriented and experimental, and demonstrate organizational resilience. Their culture, structure and business models are designed to respond quickly and effectively to change, enhancing their ability to develop in a BANI environment.

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