



Enterprise Resilience Behavioral Management in a Decision Support System

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Abstract

This article identifies the factors for managing the behavioral resilience of a firm in the face of exogenous shocks in the economy. Its main hypothesis is that each enterprise has certain resilience competencies that need to be strengthened and developed in the future. The paper identifies 17 key competencies that determine the behavioral resilience of an enterprise. Using the method of factor analysis, a model of behavioral resilience is built, which is used to

support management decision-making. The factor model of behavioral resilience SELF&IRR includes 7 competencies: S – Speed of response to processes and events; E – Endurance; L – Leadership; F – Flexibility; I – Innovation, ideas, ingenuity; R – Responsibility; R – Resource capabilities. This model can be used to determine the level of behavioral resilience, based on which a decision is made on the choice of the enterprise's strategy. Depending on the level of behavioral resilience, the management staff decides on the choice of a certain strategy (systemic transformation; structural transformation; local changes in the firm's competencies; adaptation of competencies to changes), which is aimed at strengthening the firm's viability and development. The successful execution of a chosen strategy enhances the firm's capacity to withstand current and future threats while actively seeking or purposefully creating new opportunities for development.

Keywords: Management, Business economy, Opportunities, Enterprise Resource, Decision making

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Introduction

Since the beginning of the 21st century, the business environment has been characterized by instability, uncertainty, complexity, and ambiguity, creating the so-called VUCA world. Financial and economic instability, social tensions, globalization processes, geopolitical crises, natural and man-made disasters, as well as purely market processes such as increased competition, changes in consumer behavior, demographic shifts toward an aging population in certain countries, generational changes, and other local events have caused a crisis in many companies. A study by the World Economic Forum and McKinsey shows that annual GDP growth is highly dependent on how organizations and societies develop resilience. Success in solving problems depends on how leaders respond to challenges, making organizations more flexible and adaptable to change. The European Commission's Economic Resilience Agenda for 2020 envisages resilience as the ability not only to face and cope with challenges but also to transform in a sustainable, equitable, and democratic way (European Commission [EC], 2021). Resilience is multi-faceted and has cross-cutting business, economic, and social implications (World Economic Forum [WEF], 2022).

This has actualized the task of ensuring the survival of companies and finding prospects for their further development, which has led to the need to revise management approaches. As a result, considerable attention has been paid to finding management approaches to ensure the resilience of companies—their ability to withstand crises and recover quickly in the event of

losses or adverse consequences. The way companies can manage risks and continue to grow during crises has become a key issue (Chen et al., 2021).

Companies that develop organizational resilience by focusing on new opportunities in times of crisis can gain a long-term advantage over competitors. The study by Maor et al. (2022) proves the importance of organizational resilience for micro and macroeconomic effects. Sustainable organizations at the micro level have better shareholder returns and are better at integrating new technologies, supporting customers, building partnerships, and attracting and retaining employees. These companies are driven by adaptive leaders who can facilitate the various behavioral adjustments, and mindset shifts necessary for resilience in the face of change. At the macro level, they drive investment, increase productivity, and create the talent and skills of the future. As a result, resilient organizations generate GDP growth (Maor et al., 2022).

Under the influence of the transformation of familiar, expected, predictable threats, which companies have more or less learned to cope with, into hybrid threats, the business environment has become a BANI world. The world has become characterized by being Brittle, Anxious, Nonlinear, and Incomprehensible, which, together with the extreme level of military threats around the world, has become a catalyst for destructive processes. As a result of the COVID-19 pandemic, growing terrorist threats, and escalating military conflicts around the world, starting with Russia's military aggression against Ukraine, the external environment has become more turbulent. Risks and uncertainty have increased, and the situation has turned into natural chaos. Even more companies around the world faced complex and challenging problems that required quick, bold, and breakthrough solutions to survive and grow. Since the beginning of the period of global and fundamental transformations, it has become clear that the question is not whether there will be more devastating crises but rather how quickly the world will face a new challenge.

Since 2014, the FM Global Resilience Index has been compiled annually. The study demonstrates that countries in the top 50 recover from property loss, on average, more than 30% faster than those in other countries. The purpose of the index is to support the strategic decisions of global businesses, taking into account factors such as location selection, supply chain design, and loss prevention. The ranking of each country is based on quantitative data on 18 resilience factors. These include six physical factors (such as natural disaster risk, cybersecurity, and climate risk) that can affect a company's property and physical assets. Additionally, countries are assessed from a macroeconomic perspective across 12 factors that provide data on political, economic, and social risks. Six new sustainability factors have been added to the 2023 rankings, including education, inflation, internet usage, water scarcity, greenhouse gas emissions, and climate change impacts (FM Global [FM], 2024).

An alternative view is presented in the study by Hafele et al. (2023), which assesses the economic resilience index of 25 EU countries, measuring well-being and progress beyond GDP growth. This aggregate approach is used for macroeconomic purposes. Hafele et al.

suggest that economic resilience requires eight capabilities: 1. the ability to develop, diffuse, and use technology; 2. the ability to develop, transfer, and use rights and skills; 3. the ability to access financial resources; 4. the ability to access natural resources; 5. the ability to create, diffuse, and use knowledge; 6. the ability to ensure the stability of institutions (including transparent, strong, and reliable rules and regulations); 7. The ability to innovate; and 8. The ability to expand existing activities (Hafele et al., 2022).

New challenges are not only related to negative destructive events. The development of science, the acceleration of new knowledge and technologies, and the rapid pace of the digital revolution are also driving positive changes (Babenko et al., 2019; Babenko, 2020). Digitalization is increasingly penetrating all spheres of life and significantly expanding opportunities for companies (Shtal et al., 2023). A striking example of this is that quarantine measures during the COVID-19 pandemic limited personal interactions and contacts; however, the transition to digital technologies and the online environment created the preconditions for accelerating the development of the contactless economy. Many proactive companies experienced positive outcomes by adapting and even thriving during this challenging period through digital transformation, which allowed them to offer new products and service levels, restructure work organization, and intensify communications and interactions using online resources and platforms.

As the business environment changes significantly due to the emergence of new, previously unseen shocks, the most devastating of which is the full-scale invasion of Ukraine, the vulnerability and fragility of companies have increased. Consequently, the issue of companies' resilience to new shocks has become increasingly important.

The results of a study conducted as part of the United Nations Development Program's (UNDP) Support to Ukraine project show that businesses are tired of uncertainty and stagnation in the market. The Ukrainian Business Index (UBI) business activity index as of January 2024 is 37.3 out of 100 (Diia.Business, 2024). A survey conducted by the American Chamber of Commerce in Ukraine and Citi Ukraine in September 2023 (ACC, 2023) showed that the key challenges of doing business in Ukraine after Russia's full-scale invasion are the safety and security of employees (91%). Next are Russia's missile attacks on critical infrastructure and business assets (66%), the health and mental well-being of employees (65%), economic and consumer recession (45%), and access to electricity, water, mobile communications, or heating (44%). The main factors for business preservation are the resilience and unity of the team, the concept of "people come first," adaptability and flexibility, and crisis management and planning (ACC, 2023).

The consequences of the COVID-19 pandemic and military aggression on the tourism sector were the most harmful (Apelt et al., 2019). Exogenous shocks can create or expand opportunities for companies, but this requires understanding the preconditions for such transformations. For example, about 6% of Ukrainian companies have rebooted since the beginning of the military aggression (Diia.Business, 2024). They have expanded their

geography, scaled up, and even entered the international market, promoting their brands that have gained consumer support far beyond Ukraine. The above allows us to state that the crisis, although it destroys what has been developed and built for a long time, was effective, but has lost its capacity, allowing us to get rid of what is no longer relevant and indicating the need to find new opportunities for further development. This requires a transformation of business thinking (Malyarets, 2017) and the development of approaches to building resilience in the organization's management system. Organizational resilience is an important factor in the formation of a firm's resilience, one of the components of which is behavioral resilience.

According to the content analysis results of scientific sources, from 2017 to 2022, the dynamics of published scientific papers on the query "resilience" increased by 2.5 times and amounted to 24,393. It was found that organizational and economic resilience are actively studied in scientific literature. According to the results of the bibliometric analysis presented in the article (Ligonenko, 2023), the most widespread phrase was "organizational resilience," which was found in 1,343 works as of 2022. The term "economic resilience" was found in the title and keywords of 1,062 works. The phrase "business resilience" was introduced into scientific circulation later (compared to others)—only in 2018—and has so far been mentioned in 287 papers. Over the past five years, according to the article (Ligonenko, 2023), the focus of research on the phenomenon of resilience has changed. In 2017, almost 55% of publications on resilience were devoted to economic resilience, 36% to organizational resilience, and only 13% to business resilience. In 2022, the focus shifted to organizational resilience research—more than 50% of publications; their number reached 283, which is almost six times more than in 2017. This can be explained by the fact that the increased turbulence of the business environment in recent years has caused a new impetus in research on the survival and recovery of companies. Therefore, this study is particularly interested in scientific papers that address the characteristics and measurement of organizational resilience.

To better understand the ways of solving the problem of survival and development, the article studies behavioral resilience as an important component of a firm's overcoming exogenous economic shocks in a rapidly changing environment. The purpose of this article is to define the concept and factors of the model of behavioral resilience of a firm that contributes to business development in the context of modern challenges. The targeted orientation has determined the methods of research and prospects for further scientific research.

Methodology

The main hypothesis of the research is that every organization has certain capacities for resilience, which are important to strengthen and develop in the future. However, this requires identifying the key capabilities that determine a firm's behavioral resilience. An important stage in this process is the methodology for assessing the existing competencies and identifying those to which efforts should be directed. The main methods used to solve the

tasks and achieve the research goal include content analysis, factor modeling, and expert surveys.

Content analysis method

The method of content analysis was used to obtain theoretical results by analyzing the content of the text regarding the properties and factors of resilience for business development.

This research technique made it possible to select content units to form the characteristics list of behavioral resilience formation during the preparatory stage of conducting an expert survey. In addition, the results made it possible to carry out theoretical differentiation and structuring of content units. The selected meaningful categories and subcategories are the logical basis of the behavioral resilience formation of a firm.

The formed list of characteristics of behavioral resilience formation was included in the questionnaire of experts, which was used in factor modeling.

Expert survey

To form a model of behavioral resilience, considering the importance and weight of its characteristics, an expert review was conducted using the online tool Google Forms in two stages. At the first stage, experts determined the importance of the characteristics of behavioral resilience; at the second stage, they ranked the most important characteristics to assess their significance. Fifteen hospitality professionals in the field were invited to participate in the expert survey; they received a link to the questionnaire and filled it out while asking clarifying questions.

To substantiate the possibility of using the results of the expert survey, the concordance coefficient was calculated, which was equal to 0.609 at the first stage and 0.9097 at the second stage. This confirms the sufficient consistency of the experts' opinions, and the validity of the results obtained. According to the results of the first stage, which involved assessing the importance of the characteristics of behavioral resilience on a 5-point scale, the opinions of the experts were summarized, and the seven most important characteristics were selected based on the highest values of the importance coefficient.

Factor modelling

To achieve the goal, an additive factor model was built based on the main results of the content analysis and expert survey:

$$BR = \sum_{F=1}^7 (b_F \times W_F), \quad (1)$$

Where BR is the behavioral resilience (points); b_F is the point of a certain factor (F); W_F is the factor importance coefficient.

The point assessment is imperfect for further analysis. For this purpose, the total score of behavioral resilience (BRI) was transformed into an index characterizing the level of resilience:

$$BR_I = \frac{BR}{5} \quad (2)$$

Considering that the indicator of behavioral resilience (BR, formula 1) is a point indicator, the article uses a scale for converting the evaluation characteristic into indicators (BRI, formula 2) and the qualitative scale of resilience shown in Figure 1.

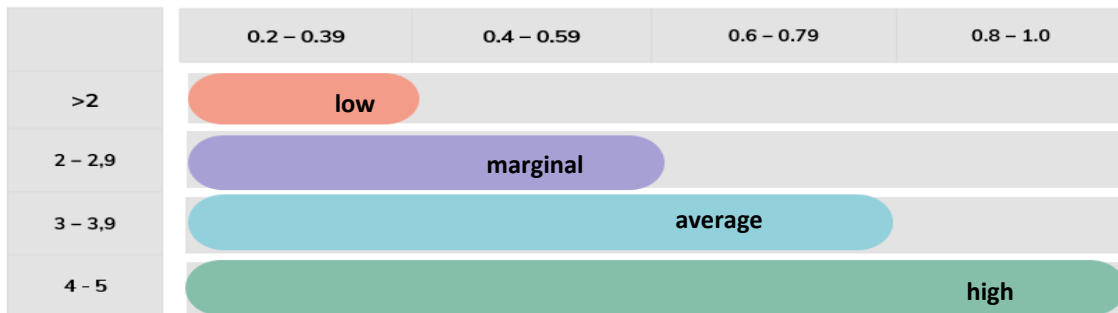


Figure 1. Resilience level scale

Source: compiled by the authors.

The methods used allowed the following results to be obtained, which are outlined in the next section.

Results

First, it is necessary to define the essence of the concept of "resilience." The mainstream of economics considers resilience as the ability of a system to absorb disturbances and reorganize under change in such a way as to maintain the same function, structure, identity, and feedback loops (Walker et al., 2004). In this interpretation, resilience is primarily seen as the static ability of a system to absorb disturbances and reorganize under change while maintaining its basic characteristics.

The emphasis has been on adaptability as the ability to build resilience by adjusting in the face of change. In the modern sense, as the technological and digital revolution takes place, the socio-economic system is being restructured, and the behavioral patterns of market players and consumer needs are changing, companies need to be updated and reformatted according to new demands and challenges to ensure resilience. Therefore, we support the view that companies need to take measures to avoid unfavorable outcomes at the firm, industry, or socio-ecological system level to ensure resilience (Williams et al., 2021). A particularly sensitive topic is resilience for hospitality and tourism businesses (Shepherd, 2023), which in Ukraine are organized mainly as small and medium-sized firms.

The most well-known resilience studies (Walker, 2020) have contributed to the identification of different characteristics of resilience. These studies have considered resilience through four key aspects: breadth, resistance, fragility, and panarchy. Systemic transformation involves changes that, in the context of resilience, require "radical systemic

changes in values and beliefs, models of social behavior, as well as multi-level regimes of leadership and management" (Olsson et al., 2014).

In the papers by Kantur and Say (2015), a three-dimensional structure of ten items is substantiated: resilience, which includes four items and measures the ability of an organization to withstand and recover from adverse conditions; flexibility, which includes three items and measures the ability of an organization to respond quickly; and most importantly, the integrity dimension, which includes three items and measures the cohesion among the organization's employees who have faced adverse circumstances.

In further research, Hillmann and Guenther (2021) view organizational resilience as the ability of an organization to maintain functions and recover quickly from adverse circumstances by mobilizing and accessing the necessary resources. According to the authors, three key points define organizational resilience: an organization's resilient behavior, resilient resources, and resilience capabilities. The emphasis on the organization's resilient behavior fully aligns with our position and confirms its acceptability.

The group of researchers Chen, Xie, and Liu (2021) also proved that organizational resilience is a multidimensional construct and highlighted the components of capital resilience, strategy resilience, relationship resilience, cultural resilience, and learning resilience. Unlike other approaches, the authors emphasize organizational resilience, which includes learning resilience and capital resilience.

The potential extent of organizational disruption can be influenced by how well members of organizations work together to prepare for and respond to adversity (You, 2022). This includes cognition (how people understand the nature of shocks), behavior (how people act in the face of shocks), and emotions (how people relate to shocks). These factors can often be interrelated and interact with each other in non-linear ways, resulting in complex mechanisms for organizational recovery (You, 2023). In this regard, a distinction is made between "static resilience," defined as the ability to return to an initial state, and "dynamic resilience," defined as the ability to create new opportunities and points of growth (Williams et al., 2020). A conceptualization of a similar approach is outlined by Hafele et al. (2023). The authors, at the theoretical level, outline three variants of the resilience mechanism: the ability of an economic system to either absorb the impact of a shock, recover, or adapt (Hafele et al., 2023). If the system returns to its original level of performance, this corresponds to absorption or recovery mode, which Williams et al. (2020) called static resilience. There is also a variant in which the economic system can reach a new post-shock level, corresponding to adaptation or dynamic resilience.

Duchek (2020) proposed a capability-based conceptualization of organizational resilience. She conceptualizes resilience as a meta-capability consisting of a set of organizational capabilities and procedures that enable the achievement of three stages of resilience: anticipation, coping, and adaptation. Organizations must possess: 1) proactive capabilities that

form resilience capabilities; 2) reactive capabilities responsible for implementing resilience strategies; and 3) cognitive as well as behavioral resilience capabilities (Duchek, 2020).

This approach is similar to our research approach. The difference is that our vision is based on the primacy of the firm's behavioral competencies. The presence of behavioral resilience ensures the proactivity of strategies and the ability to implement them (Gryshchenko et al., 2022; Gontareva et al., 2020). That is, researchers focus on behavioral resilience to achieve new opportunities caused by changes in the external and internal environment of the firm. To maintain a competitive advantage and customer value, a company must constantly develop and update its strategic competencies.

We view strategic competence as the ability, at the organizational level, to ensure the availability of interspecific resources of firms. In other words, it is to do something that cannot be copied by competitors. It is a set of skills, processes, knowledge, and abilities that the firm possesses. In their entirety, the interspecific resources of firms allow them to provide unique value for the customer. Strong competencies give firms the ability to anticipate and respond to change, seize opportunities, and overcome difficulties. They allow the firm to adapt and evolve to remain relevant and successful. Therefore, in the future, the authors will focus on the competency approach to determine the behavioral resilience of the firm.

Researchers focus on behavioral resilience to seize new opportunities created by changes in the external environment. Based on the literature review, 17 characteristics of behavioral resilience were identified (see Table 1).

Table 1. Groups of behavioral resilience characteristics

Characteristic groups	Characteristics	Importance coefficient of the characteristic
Group 1		
Characteristics forming behavioral resilience	Reaction speed to processes and events	0.0671
	Stress resistance, the ability to hold on despite challenges	0.0653
	Leadership ability	0.0634
	Ability to combine resource capabilities	0.0607
	Flexibility of management decisions	0.0597
	Ability to generate innovations	0.0597
	Responsibility for people and decisions	0.0588
Group 2		
Characteristics that enhance behavioral resilience	The ability to recognize changes and their consequences that have already occurred	0.0579
	Ability to anticipate/forecast changes and their consequences	0.0579
	Ability to find new opportunities, see perspectives	0.0579
	Willingness to initiate and implement changes	0.0579
	Willingness to implement innovations	0.0570
Group 3		
Characteristics supporting behavioral resilience	Support of positive thinking in the organization	0.0542
	Ability to learn new things	0.0533
	Ability to maintain organizational configuration	0.0524

Source: compiled by the authors

Further, the most important ones for the formation of resilience were identified using the method defined by the author. They are included in the first group of characteristics that form behavioral resilience: speed of reaction to processes and events; stress resistance, ability to persevere despite challenges; leadership ability; ability to combine resource opportunities; flexibility of management decisions; ability to generate innovations; responsibility for people and decisions.

The second group includes characteristics with average values that strengthen behavioral resilience: the ability to recognize changes and their consequences that have already occurred; the ability to foresee/forecast changes and their consequences; the ability to find new opportunities, to see perspectives; readiness to initiate and implement changes; readiness to implement innovations. The third group includes the characteristics with the lowest values, they support behavioral resilience: positive thinking, the ability to learn new things, and the ability to maintain the organizational configuration.

The obtained results, shown in Table 1, are the basis for building a theoretical model of behavioral resilience of organizational management, which includes the characteristics that form it, i.e. are fundamental:

$$BR = f(S, E, L, F, I, R, RO), \quad (3)$$

Where BR is the behavioral resilience; S is the reaction speed; E is the endurance, stress resistance, and fortitude; L is the leadership; F is the flexibility; I is the innovations, ideas, and ingenuity; R is the responsibility; RO is the resource opportunities.

The abbreviation of the words of the components of behavioral resilience forms a construction of two parts, as a result, we got the name of the SELF&IRR model, which can be interpreted as a model of behavioral resilience SELF&IRR – (SELF + IRR (irreproachable) impeccable) – make yourself better, without flaws, without problems, without vulnerabilities, adverse to problems and challenges, which means to be anti-fragile. Instead of resisting change and challenges, always be ready to take the hit without damage or destruction. The ability to transform threats and negative consequences into new opportunities and positivity to find/create even more powerful growth points.

In a general form, the mathematical model of the behavioral resilience of an organization is presented as follows:

$$BR = S \times W_S + E \times W_E + L \times W_L + F \times W_F + I \times W_I + R \times W_R + RO \times W_{RO}, \quad (4)$$

Where WS, E, L, F, I, R, RO is the weighted coefficients for each factor, behavioral resilience of organization.

According to the results of the survey, the coefficients of each of the characteristics of the first group for the model of behavioral resilience were determined (table 2).

Table 2. Importance of the behavioral resilience characteristics

Characteristics	Sign	Weighting factor
Reaction speed to processes and events	<i>S</i>	0.1820
Stress resistance is the ability to hold on despite challenges	<i>E</i>	0.1560
Leadership ability	<i>L</i>	0.1206
Ability to combine resource capabilities	<i>RO</i>	0.1371
Flexibility of management decisions	<i>F</i>	0.1418
Ability to generate innovations	<i>I</i>	0.1300
Responsibility for people and decisions	<i>R</i>	0.1324

Source: compiled by the authors

Taking into account the importance of each of the components, a factor model was obtained:

$$BR = S \times 0.1820 + E \times 0.1560 + F \times 0.1418 + RO \times 0.1371 + I \times 0.1300 + L \times 0.1206 . \quad (5)$$

The above model (5) can be used to assess the behavioral resilience of organizations on a 5-point scale. Accordingly, the value of the BR result will vary in the range from 1 to 5. We will use the scale of converting quantitative point values into qualitative indicators of the state of resilience formation system in organizations (by dividing the values by the maximum possible). The resulting qualitative scale allows us to identify the state of resilience in a particular organization.

Table 3 presents an approach to the selection of strategies for building a firm's behavioral resilience.

Table 3. Matrix for choosing strategies to build behavioral resilience for business development

The value of behavioral resilience, points	Indicator value, coefficients	The qualitative scale of resilience	Types of resilience strategies
less than 2 points	0.2 – 0.4	low	Systemic transformation of the organization's management system
2 to 3 points	0.41 – 0.6	limit	Structural transformation of the organization's management system
3 to 4 points	0.61 – 0.8	medium	Local changes of the organization's management system
4 to 5 points	0.81 – 1.0	high	Adaptation to changes in the management environment of the organization

Source: compiled by the authors

The summary values of the analysis results of the proposed model (5) serve as indicators for building strategies for the formation of management resilience in organizations. A low level of resilience (from 0.2 to 0.39) indicates that most of the seven competencies of the organization's personnel included in model (3) are assessed as critically low for ensuring business development. This requires a radical transformation of the entire system of competencies of the firm. Systemic transformation implies changes that, in the context of business development, require adjustments in processes, personnel, and other material resources, as well as organizational culture.

The limit level of resilience (from 0.4 to 0.59) is established if most of the components are evaluated at a low level. The strategy for restoring resilience will be based on structural transformations of certain areas of the firm's competencies. For example, the use of digital tools that expedite business decision-making (Savytska, 2022). At the beginning of the war, the hotel business in Ukraine suspended its activities by 90%. The flow of guests stopped, and all planned events and tourist flows to the central, southern, and eastern parts of the country froze. The rate of cancellations from reservations increased to 85-98%. The stress resistance of the staff, the ability to persevere despite the challenges, and the management level's responsibility for people acquired critical importance. The development of these competencies allowed the hospitality industry to survive under otherwise unfavorable conditions.

Average values (in the range of 0.6 to 0.79) of the indicator show local changes in the firm's competencies, which should be the focus of attention. High values of the resilience level (more than 0.8) also indicate that the firm should continue to develop its competencies. In this case, the business development strategy will be aimed at continuous adaptation to changes in the firm's environment.

Discussion

Next, we will conduct content analysis and identify the theoretical construct of behavioral resilience in firms. Content analysis and the conducted expert survey made it possible to determine the logic of the formation of behavioral resilience, as shown in Figure 2.

The concept of "resilience" is quite close to the concepts of "sustainability," "resistance," "stability," and "strength." Some authors understand resilience as "elasticity," "firmness," and "flexibility." A significant unity of opinion among scholars can be seen in the recognition of resilience as a multidimensional theoretical construct. At the same time, the most controversial issue is the composition of the components that form it. The table shows the results of the content analysis of scientific publications on different approaches to the characteristics of company resilience.

In developing a business based on behavioral resilience, it is important not only to return the state of the firm to its initial level but also to introduce changes in various aspects of its activities aimed at improving, updating, enhancing, transforming, rebooting, and, in general, ensuring evolution and further development in accordance with the new reality (Babenko et al., 2019). The proposed factor model will help to solve this complex task, and its use will allow managing business development based on behavioral resilience.

According to the results of the conducted research, it was found that the speed of reaction to processes and events is of the greatest importance in the proposed model, which is justified, given the acceleration of events and processes taking place in the world. Modern challenges are characterized by extreme cases that have begun to arise rapidly; they proceed very quickly

and sometimes form a completely new reality, so the reaction to them becomes a determining factor in management.

The speed of reaction means developing feasible solutions in the shortest period (Acquaah, 2011). Scientists have empirically proven that when a company realizes the consequences of a threat late, it loses out compared to other companies. For example, researchers found that approximately 80% of companies in the sample recognized the COVID-19 outbreak as a severe issue as soon as February (40.77%) or March (38.69%). Only 84 companies (12.5%) in the sample realized the severe impacts of COVID-19 as early as January. Approximately 70% of companies reacted just within one (33%) or two weeks (37%) after recognizing the dominant effects of the outbreak on their business performance (Nguyen, 2021). Acting quickly and developing alternatives provides an opportunity to benefit from negative circumstances (Kantur & Say, 2015) and ensure security for the economic system of the enterprise (Illiashenko et al., 2020).

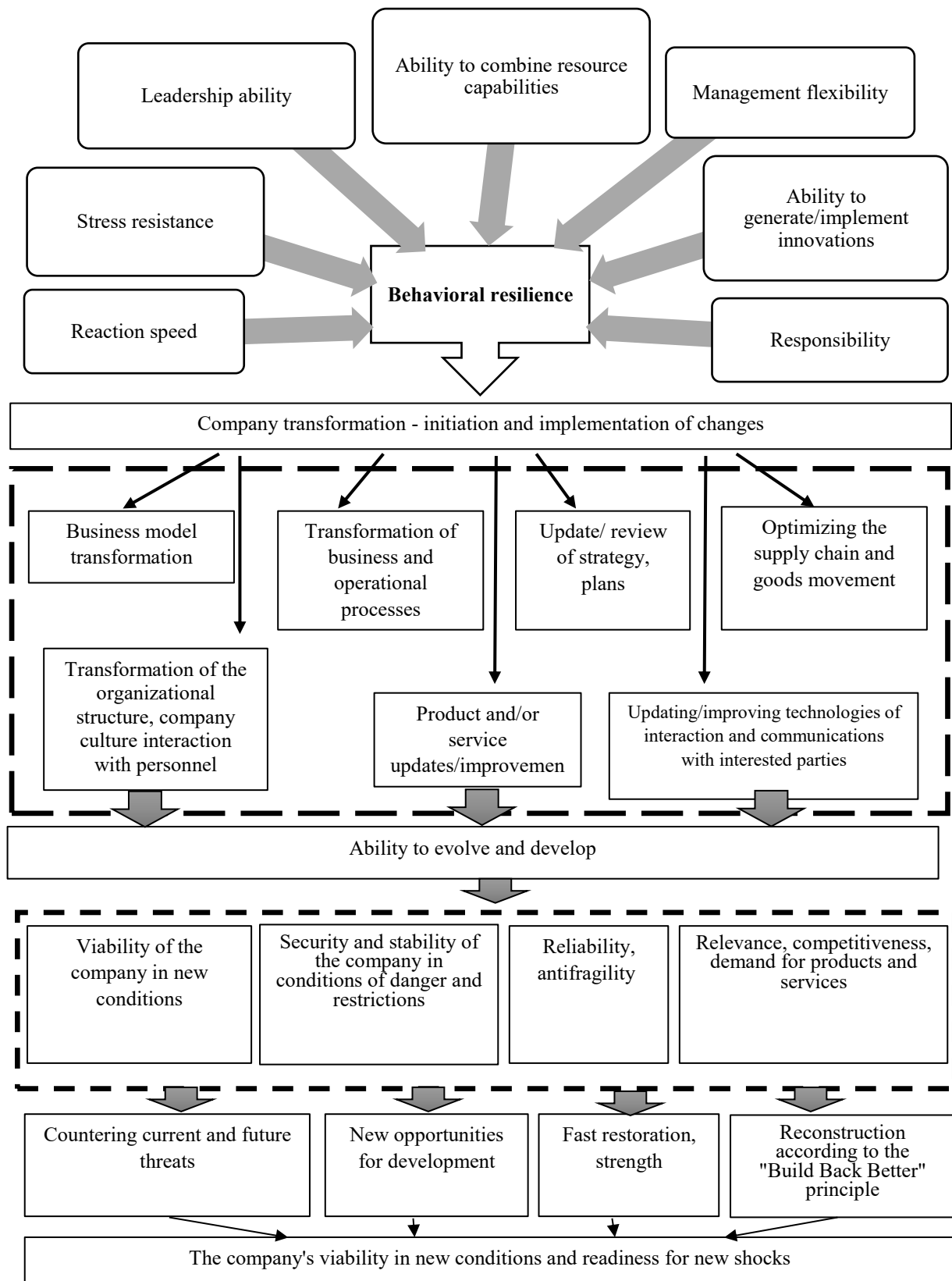


Figure 2. The concept of behavioral resilience of the firm

Source: compiled by the authors

Thus, companies that are quicker to feel the consequences and respond to them by initiating changes or actions have a better chance of quickly recovering from vulnerabilities and finding new opportunities and prospects for further development. In the face of extreme events that create hybrid threats—not just challenges but shocks—it is important to be powerful enough to overcome everything and not give up while continuing one's path (Kantur, 2015). Therefore, stress resistance, which has the second highest weighting in the model, as well as the ability to persevere despite challenges, will provide additional strength not only to survive but, as Fleming (2012) notes, to resist. Stress resistance is needed to make informed decisions and avoid unnecessary fears, panic, confusion, chaos, and the loss of precious time. It is important to show courage and determination and to learn to focus on finding positive aspects, new ideas, options, opportunities in the given circumstances, and solutions that will contribute to achieving positive results.

The third most important characteristic of the behavioral resilience of the firm is the flexibility of management decisions. In the context of dynamic changes, flexibility—the ability to make adjustments and adapt—ensures maneuverability by initiating and implementing changes to action plans, reviewing different scenarios, and testing them to determine the most effective or best one under certain conditions. Hillmann and Guenther (2021) distinguish between strategic and operational flexibility. While operational flexibility makes it possible to take preventive or adaptive measures to prevent significant losses or negative consequences, strategic flexibility characterizes the ability of an organization to switch to a fundamental change in its strategy and change the vector of its development while quickly and efficiently reallocating resources.

Given the importance and role of the ability to combine resource opportunities in ensuring business development, this characteristic is distinguished as a component of behavioral resilience. In this context, the ability to preserve (especially human resources), accumulate, find the necessary resources, and efficiently allocate resource capabilities, as noted by Coutu (2002), emphasizes the need to mobilize all available and accessible organizational resources and use all possible means. From the first days of military aggression, Ukrainian companies, like almost all companies in the world during the COVID-19 pandemic, faced the problem of retaining staff—especially highly qualified staff—whose needs during the acute crisis period decreased or were absent due to the suspension of the company's operations. These individuals later played a key role in the resumption of operations. In addition, the disruption of logistics routes and destruction of transport and warehouse infrastructure caused interruptions in the supply of raw materials, components, and equipment, which forced companies in Ukraine to look for new opportunities for production processes, including combining resources and relying on those available.

Responsibility for people, team cohesion, and the preservation of human capital, on the one hand, and coordination of management decisions with the interests of communities, society, and the country, on the other hand, according to the results of the expert survey, are

included in the group of characteristics that ensure the formation of behavioral resilience of the firm.

A viable organization is also an innovative organization (Do et al., 2022). Under modern conditions, innovation has become a strategic imperative for adapting to market changes and maintaining competitiveness (Garrido-Moreno et al., 2024). Thus, the ability to generate innovations becomes a priority competence of the organization, which provides the transformations necessary to strengthen sustainability. The intensification of competition, the emergence of new consumer needs and requests, and technological breakthroughs require the activation of the search for new ideas for products, technologies, and processes (Babenko, 2020). The introduction of innovations means positive changes that ensure the organization's compliance with new requests, challenges, and circumstances arising in a turbulent environment (Malyarets et al., 2017). It is worth noting that it is innovative and successful companies that attract and engage talented employees—creative, ambitious specialists—who gather around them the best and help them be leaders, not just hold on, but influence the world and become creators of the best. Companies with an innovative culture are constantly transforming. For them, it is a process of continuous improvement, opening new perspectives, and abandoning traditional boundaries; it is a way of finding and implementing new opportunities for development and sustainability.

Strong leadership that promotes cohesive and interdependent teams is a critical component of a resilient organization (Southwick, 2017). In extremely difficult conditions, leadership—the ability to overcome resistance, fear, and consciously assess the situation, see perspectives, have an action plan, self-organize, accumulate efforts and resources, unite the team around the leading idea of the company, and inspire action and success—becomes more important than professional skills. In the context of military aggression, the leadership of managers in Ukrainian companies required strength and determination, as well as care and sincerity. Supporting people in extremely difficult life circumstances became the basis for cohesion, increasing the loyalty and dedication of the staff to the business and the company and inspiring them to put in as much effort as possible. Organizations in which management demonstrates leadership and unites the team during extremely difficult times can become even stronger. In companies with a strong leader, extraordinary and difficult situations or crises only add momentum to their development and strengthen their stability.

In addition to the basic traits, it is important for company management to develop the characteristics of the second group, which strengthen the behavioral resilience of the organization's management. Among these, the ability to anticipate unexpected events and conquer denial plays a special role (Hamel & Välikangas, 2003). This includes being able to sense, recognize, predict, forecast changes, and interpret them (Burnard & Bhamra, 2011; Coutu, 2002). At the same time, awareness and acceptance of uncertainty and reality are important. It is crucial to recognize that even during the most difficult and destructive events, one must form the ability to see the opportunities arising from the situation (Hillmann &

Guenther, 2021) and find new perspectives or direct efforts to create them. The vision of new opportunities and prospects requires decisive actions and decision-making regarding the initiation and implementation of changes. Therefore, the capacity for organizational change is an important characteristic of resilience (Hillmann & Guenther, 2021), especially for the behavioral resilience of the firm, ensuring the adaptation of the company's internal environment to new challenges and shocks.

Continuing with the topic of innovation activity in the context of business development, it should be noted that the generation of innovations requires further decisive and targeted actions to implement them. On this path, there is a need to overcome numerous obstacles, starting with adjustments to restrictions, conflicting legislation, and addressing organizational, production, marketing, and operational problems.

The characteristics that support the behavioral resilience of organizational management also require attention. To ensure the viability of the organization, the ability to maintain the organizational configuration is important (McCarthy et al., 2017). During changes, the strategy needs to be reviewed and/or changed; the corporate structure, culture, and personnel require conservation and management aimed at their adaptation to ensure the ability to perform new tasks.

In modern conditions, a characteristic of behavioral resilience that is increasingly important is the ability of organizations to appreciate, transform, and exploit new knowledge for strategic purposes (Hillmann & Guenther, 2021). Altintas and Royer argue that the concepts of sustainability and learning are inseparable when they develop at the organizational level (Altintas et al., 2009). New knowledge and practices acquired in the process of transformation should be considered the property of the company, which will allow it to emerge not just as sustainable, but as stronger after the crisis (Freeman et al., 2004). The result of a firm's response to adversity is growth and learning how to deal with crises so that each subsequent one has no impact or only a very low negative impact that can be quickly leveled off.

In the context of behavioral resilience, a new important feature for firm development emerges—the ability to find meaning in difficult times—that is, to see the positive side of the situation and move on (Coutu, 2002). Therefore, it is necessary to maintain a positive mindset in the organization while undergoing a critical event or change (Asare-Kyire et al., 2023), which will allow the organization to overcome obstacles and find new opportunities where others see only threats. Positive thinking strengthens faith in success, hopes for the best, supports people in difficult situations, helps overcome fears, and, most importantly, promotes the development of creativity and stimulates the search for better ideas to achieve goals.

It is also important to remain optimistic because optimism supports people's physical and mental health, which allows them to cope with stress in difficult situations and remain efficient, increasing motivation and productivity. Optimism unites and strengthens the team,

creates a positive atmosphere, and brings people together into a single and powerful mechanism that finds new opportunities and contributes to the development and sustainability of the company.

Conclusion

In addition to the traditional factors of production, factors that create non-monetary conditions for the development of a company are important for business economics. These factors are the strategic competencies of the firm, which we consider as the ability at the organizational level to ensure the formation of properties that promote business development in the BANI world.

To form the competencies of resilience, 17 elements that affect the behavioral resilience of a company have been identified using content analysis methods. These elements are divided into three groups of characteristics: 1) those that form resilience, 2) those that strengthen resilience, and 3) those that support resilience. The characteristics of the first group play a key role in the formation of resilience. These include the following: the speed of reaction to processes and events; stress resistance; leadership ability; the ability to maintain resource capabilities; flexibility of management decisions; ability to generate innovations; and responsibility for people and decisions.

The factor model of behavioral resilience, SELF&IRR, is substantiated by the method of expert estimation. The components of the model are as follows: S is the reaction speed; E is endurance; L is leadership; F is flexibility; I is innovations, ideas, and ingenuity; R is responsibility; and R is resource opportunities. The proposed model demonstrates the theory of behavioral resilience: the formation of resilience through the firm's behavior, which is determined by the property of the company's available interspecific resources to improve itself, focusing on the properties of anti-fragility.

The model can be used to determine the level of behavioral resilience and to choose a strategy for building business resilience. Four strategies are identified that, according to the level of resilience, can be used to neutralize the negative impact of threats and challenges. These are: 1) system transformation, applied at a low level of resilience; 2) structural transformation, when significant changes are needed in certain areas of the firm's competencies, as there is a limit level of resilience; 3) local (spot) changes in the organization; and 4) adaptation.

These strategies form the necessary prerequisites for transforming the firm's behavior by initiating and implementing changes aimed at improving and updating its business model, business processes, strategy and plans, organizational structure, culture, interaction with personnel, products and/or services, supply chains, and goods movement, etc. The success of these transformations ensures the evolutionary development of the company, which strengthens its viability in new conditions, provides a certain level of protection against significant losses in conditions of danger and restrictions, makes it more reliable and anti-

fragile, and ensures that its products and services are relevant, competitive, and in demand in the market. The last strategy is the adaptation of competencies to changes in the firm's environment, which is used even in conditions of a high level of resilience.

As a result of implementing the chosen strategy based on a certain level of behavioral resilience, the ability to withstand current and future threats is manifested, along with the ability to resist current and future threats, to search for and/or purposefully create new opportunities, and to recover and strengthen according to the "Build Back Better" principle. Such scenarios ensure business development.

The results can be used for further research. Future research can refine the proposed theory of behavioral sustainability and its supporting model, thereby increasing the reliability of the theory for practical applications.

Conflict of interest

The authors declare no potential conflict of interest regarding the publication of this work. In addition, the ethical issues including plagiarism, informed consent, misconduct, data fabrication and, or falsification, double publication and, or submission, and redundancy have been completely witnessed by the authors.

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