# A STUDY ON FACTORS INFLUENCING BUSINESS RESILIENCE IN THE CONTEXT OF DIGITAL TRANSFORMATION

# Teodora Elena FOGOROS

The Bucharest University of Economic Studies, 71131, Romania teodora.elena@icloud.com

### Marieta OLARU

The Bucharest University of Economic Studies, 71131, Romania olaru.marieta@gmail.com

### **Cristian ILIE**

The Bucharest University of Economic Studies, 71131, Romania dgaeur@gmail.com

## Roxana Maria GAVRIL

The Bucharest University of Economic Studies, 71131, Romania roxana.gavril@gmail.com

#### Abstract

This research paper aims to highlight the factors influencing business resilience in the context of digital transformation, based on an empirical approach. In the existing literature, the focus is on the concept of digitization and its antecedents and outcomes, lacking its effects on organizational resilience. First, the paper presents an overview of the existing literature on resilience's importance in business nowadays, followed by a concise outline of the impact of digital transformation in this process, as observed by recognized publishers in the latest years. As the business environment has a dynamic and unpredictable trace, due to accelerated digitization evolution, organizations are striving to turn any risk of resilience into an advantage. Secondly, after conducting an empirical research based on a quantitively analysis of 100 recent research papers, we identify the factors of influence on business resilience and the influence of digital transformation on business resilience. We strive that this research will help future organizations to better understand the importance of resilience and to easily adapt digitization in their processes.

**Key words:** business resilience, digital transformation, dynamic environment, organization adaptability, risk anticipation

**JEL Classification:** *O31*, *M16*, *M20* 

# I. INTRODUCTION

As the business environment is becoming more unpredictable and dynamic, resilience becomes very important for organizations. Due to accelerated innovation and technology evolution, climate changes and the sanitary crisis, the economic situation was kept in a continuous tension and stress. Based on a recent research study made in the United States which implied 5800 small firms, a percentage of 43 were expected to close due to the pandemic (Bartik, Bertrand et al., 2020). Even though the availability of data and connectivity increased due to the digital revolution, there are risks implied such as security breaches and failures. Customer expectations increased as well, and organizations must show social responsibility. Resilience supposes the capacity of an organization to face stress, recover critical functionality and prosper in altered circumstances (Reeves and Whitaker, 2020). The term has its origins in physics, referring to the ability of a material to rebound to its original form once deformed (Liu et al., 2021). Basically, taking chances and advantage of situations can define a resilient organization. Nowadays, firms are following traditional approaches in their strategy, such as maximizing short-term returns or executing stable plans. Hence, adjectives such as unpredictable, changeable, unknown are creating resiliency, which requires following different business models which embrace a multitimescale perspective and unidentified risks. Based on Reeves and Whitaker research (2020), so that the structure of an organization become more resilient, there are several principles to follow: redundancy, diversity, modularity, adaptability, prudence, and embeddedness.

Like Hidayat et al. (2020) specified in their research, the usage of technology and innovation in business is to establish a good and profitable relationship with the customer and to provide the needed comfort. Social-media utilization, websites with e-commerce, digitalized marketing are one of the few ways to keep up with the

changing market. Basically, adapting to the changing digital world from an enterprise perspective supposes the integration of internal and external resources over information, communication, and connectivity technologies to amend strategy and processes (Vial, G., 2021). As Zhang et al. (2021) showed in the results of their research, the digital transformation has a positive impact regarding organizational resilience, as it helps firms to resist risks and to adapt to changing environmental contexts. Though, firms are required to strengthen the learning and experience of its employees for deep digital knowledge. As stated by Fogoros, et al. (2020) in their research, technology's evolution will impact the organizational field in various way, mainly in e-HR practices: e-recruiting, e-selection, e-learning, e-performance management, etc. In their article, Fogoros, et al. (2020) mentioned that the process of digital transformation supposes the digitization of business models and new approaches on existing business processes, since the new digital technologies are introducing the artificial intelligence, IoT, 3D printing, cybersecurity, etc. It is considered that digital transformation is a phenomenon transcending the globe while influencing the business activities of organizations worldwide (Grab et al., 2019). Due to all this technology solutions which are gradually growing, work activities that consists of repetitive tasks are at risk of being replaced (Grab & Olaru, 2020).

Taking all this into consideration, the presented research follows to hook up existing studies, papers and information conducted by recognized publishers from the field of business resilience with the drivers and effects of digital transformation. By assessing and analyzing the various factors of influence, the factors influencing business resilience leads to be introduced towards the end of this paper by intending to work as a framework for future research on this subject.

# II. RESEARCH PURPOSE

The present research on business resilience and digital transformation displayed that the recent research on the subject focuses on the following issues:

First, the spotlight on the need of upgrading technology usage in organizations, by adapting procedures and processes to new ways of work. Thus, digital technology can help firms to reduce response times, stimulate decision-making process and quickly rely internal and external sources of information through connectivity technologies and computing, to reshape the corporate vision to the changing digital world (Zhang et al., 2021). It is often considered that organizations which implement a new tool and name it digital transformation will fail. As Casalino et al. considered in their article (2020), digital transformation supposes a total rethinking of what should be done, taking into consideration new technologies and new customer needs; becoming quicker, cost-efficient, and flexible is the real challenge of innovation. Also, another policy that organizations must take into consideration is the utilization of online media in marketing their products and services. Digital marketing is considered one of the proper and efficient ways to target more customer in a short time, due to its measuring: targeting audience by subject of interest (Hidayat et al., 2021).

Secondly, the organizational resources and capabilities' of adapting to artificial intelligence and on the effects of automation. It was established by Dubey et al. (2019) the big level of significance of big data analysis on supply chain resilience and proved later by Li et al. (2021) that digitization can boost information processing capabilities and organizational agility. To optimize existing business processes and products, firms should focus on the accumulation of digital knowledge by combining digital technologies with existing resources and capabilities (Zhang et al., 2021). Achieving digital transformation should happen in a gradual manner, emphasizing with traditional flows. In his research, Andriole, S.J. (2017) debated that instead of adapting disruptive technologies such as virtual reality, organizations should adopt familiar technologies that are widely utilized, such as mobile phones.

Thirdly, the customer expectations related to products are influenced by fast changes on the market and by innovation. Self-service, order online, customer website interactions and social media interactions are considered consequences of digital transformations. Due to the possibility of reviewing products or services, customers share their concern or feedback about it with the customer service believing that their evaluation will reach the product teams.

Even though innovation is referred as introducing something new, in terms of products, process or marketing, scholars argue that innovation doesn't suppose completely new ways of function but improving traditional models and adapting it to changes.

# III. METHODOLOGY

This research is an outcome of an early PhD research, based on statistics made before the possible future

changes introduced by the COVID-19 context. The chosen research method was examining and reviewing approximately 100 similar research, opinions, and main ideas in the academic literature, having as center focus to identify the frequent observed factors of influence on business resilience, in the context of digital transformation. Drawing a comprehensive picture on business resilience will help us to have an overall view on the resilience implications, digital transformation impact on employees and customers and organizational learning based on current needs. All things considered, this paper establishes the factors of influence on business resilience, how can organizations help their employees to easily adapt to change and how can digitization help firms' processes to become structured, cleared, and ready for a digitalized future.

### IV. RESEARCH RESULTS ON THE FACTORS INFLUENCING BUSINESS RESILIENCE

Scholars defined resilience in their research a "portfolio of capabilities" (Manfield and Newey, 2017), meaning the capability of a firm to minimize vulnerability, recover fast, striving to become sustainable, being responsive and develop new opportunities withing a challenging environment (Hussen Saad et al., 2021). Though, as we can observe in Figure no.1, the publishment tendency of academic research on business resilience didn't represent a point of interest since long time ago. The graphic was conceived by searching on the international website ScienceDirect (<a href="https://www.sciencedirect.com/search?qs=business%20resilience">https://www.sciencedirect.com/search?qs=business%20resilience</a>, accessed 31st January 2022) the articles published by keywords "business resilience".

Based on numbers, the interest on this subject increased starting with 2016, with a number of 2177 articles published, doubled in 2020 with 4032 papers and later in 2021 tripled, with 6147 publications. Clearly, the sanitary crisis increased the interest of researchers and of organizations on improving businesses and turning it into resilient ones.

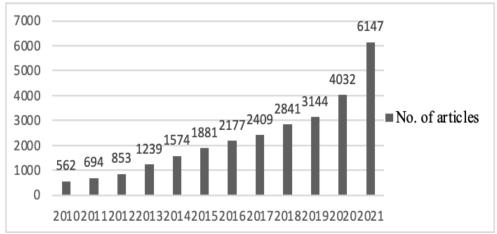


Figure no.1 – Publishment tendency on business resilience

Source: authors' own research

So that we identify the main factors influencing business resilience in the context of digital transformation, 100 scientific papers were taken into consideration, as stated in Table no.1. Therefore, three matching organizational sectors were identified and valued as follow: firm characteristics (1), business environment (2) and entrepreneurial characteristics (3). After valued each organization sector, we identified the matching between the identified factors of influence and the organizational sector.

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Table no.1 – Factors influencing business resilience

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No.	Source of research	Factor of influence	Matching organizational sector
1.	Aldianto et al., 2021	Dynamic capability	2
		Technology capability	1
		Agile leadership	1
		Knowledge stock	2
		Innovation ambidexterity	1
		Increased industry needs	2
		Need of promoting product digitally	2
2.	Burnard & Bhamra, 2011	Systematic discontinuities	2
3.	Biggs et al., 2015	Maintain performance, income, employment	1
4.	Dahles & Susilowati, 2015	Natural hazard crisis	2
		Political turn oil	2
		Economic recession	2
5.	Ortiz-de-Mandojana & Bansal, 2016	Financial volatility	2
6.	Torres et al., 2018	Human capital	3
		Entrepreneurial orientation	3
		Social capital	1
7.	Tengblad, 2018	Financial capital, size, business age	1
8.	Alberti et al., 2018	Macro-economic conditions	1
		Infrastructure and location	1
9.	Liu et al., 2021	Organizational: resources, capabilities, relationships, communication, strategy, and learning	1
		Social capital	1
		Work passion	3
		Personnel structure, hierarchy, capital structure	1
		Leadership decisions, leadership inspiration, leadership learning	1
		Business model, social responsibility	1
10.	Hidayat et al., 2020	Government support	2
		Crisis management	1
11.	Chhatwani et al., 2022	Depression	3
		Financial fragility	2
		Owner's psychology	3
12.	Li et al., 2021	Crises, disasters, and turbulent environment	2
		Financial shocks	2
		Long-term political unrests and conflicts	2
13.	Akgun et al., 2014	Technological discontinuities	2
		Quickly changing customer preferences	2
		Technological know-how	1
14.	Heinz et al., 2021	Support of a continuous improvement process	1
		Ability to anticipate change	3
		Leadership type (accept failure)	3
		Positive culture towards behaviors that promote resilience	2
15.	Miceli et al., 2021	Sustainability	2
	i		

Source: authors' own research.

The results cand be observed in Figure no.2 and concludes that the business environment and the firm characteristics are the main organizational sectors which contain factors influencing business resilience in the context of digital transformation.

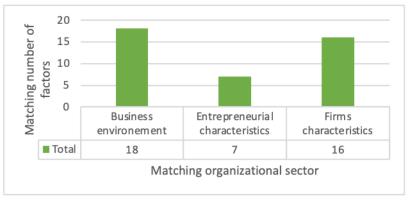


Figure no.2 – Organizational sectors which influence business resilience

Source: authors' own research

# V. RESEARCH RESULT ON THE INFLUENCE OF DIGITAL TRANSFORMATION ON BUSINESS RESILIENCE

During the last years, many supply chains revealed inefficiencies and several risks because of the sanitary crisis. To avoid this in case of future crisis and to build long-term resilience, organizations need to prioritize the investment in digital transformation. Starting with 2020, a huge part of the public institutions (schools, hospitals, and businesses) has depended on technological innovation and had to invest and adapt very quick in digital solutions to survive the market. As revealed in a survey made by Deloitte (Gurumurthy et al., 2021), "digitally mature companies", which represents firms that function based on a digital strategy and infrastructure, are more resilient and agile in a crisis and financially considered, they are more stable.

In the early 1990s, launching a website for a firm was a differentiator on the market and entrepreneurs hoped to become the first-mover advantage. Eventually, all firms had a website; the advantage remained on the strategy and on the approach. Therefore, we can imagine that in the following years, companies will adopt cloud computing, artificial intelligence and automation so only embracing it in organizations will not be enough. The difference will be made based on firms' resilience strategy and on the ability to deliver value that cannot be found anywhere else (Gurumurthy et al., 2021). Also, the next generation of connectivity, 5G, will create new opportunities at a global level, with new ways of learning and working, meaning that there will be better economic opportunities and innovative technologies, such as autonomous vehicles, smart houses, and energy-efficient cities (Gurumurthy et al., 2021). The ability of an organization to rebuild depends on its level of digitalization, by creating new value propositions and by enabling business model innovation, stimulating restructure and its capabilities to transform (Zhang et al., 2021). In an organization that incorporates strategic and dynamic leadership, where people resources are practicing according to the underlying technology to quickly respond to unexpected business disruptions, the approach is digital resilience (Deloitte, 2018). As we can observe in Figure no.3, there are five critical success factors for digital resilience.

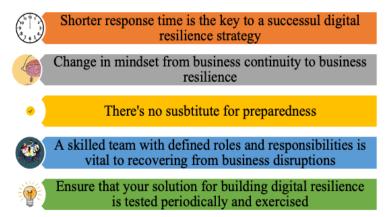


Figure no.3 – Critical success factors for digital resilience

Source: Deloitte, 2018, available online at:

www2.deloitte.com/content/dam/Deloitte/in/Documents/risk/Ramping%20Resilience%20in%20Digital%20Age\_Final%20web.pdf, accessed on 1st of February 2022

Based on recent research, creating resilience with the aid of digital transformation supposes balancing short-term necessity with realizing long-term opportunity (Dunne et al., 2020). There are various opinions in the scientific literature regarding the influence of digital transformation on business resilience. Based on Dunne et al. (2020), organizations should review IT systems for capacity and security; indeed, online meetings are a great way to gain time and energy, but behind that, there is the need of good remote hardware and software audit to assure an indefinite period of work from home. Moreover, businesses should take into consideration the automation of routine tasks to obtain productivity gain. Therefore, cybersecurity risks should be as well taken into consideration and invested in it, as data confidentiality decreased in terms of safety, because of remote working.

There are several methods so that digital transformation can help organizations to become more resilient, based on research made by Bakerfield Solutions (2021), that we will remind below:

- a. processes are up to date: with the aid of innovation, organizations should try to improve efficiency and reduce costs by automating different processes, to drive better strategic decision-making.
- b. prioritize flexibility: the equilibrium between the time at home and comfort when working became one of the demand of employees after the sanitary crisis, so organizations must rethink their hybrid work strategy to avoid staff turnover.
- c. becoming future proof, by adopting cloud-based systems which can easily be scaled up as company grows.

Even though digital transformation projects are interesting and important nowadays, the focus of organizations should always be to keep their activity running while trying to improve the resilience scope through new digital solutions.

# VI. CONCLUSIONS

This paper concludes that business resilience represents a matter of interest nowadays and by considering the factors on influence identified, it can be easily impacted by digital transformation. In the first part of this research, we concluded that the main organizational sectors which influence business resilience are business environment (dynamic capability, knowledge stock, natural hazard crisis, government support, financial capability, etc.) and the firms' characteristics (leadership style, business model, social capital, etc.). In the second part, we analyzed the influence of digital transformation on business resilience, and we observed that automating processes, prioritizing flexibility, adopting cloud-based systems and invest in cybersecurity are crucial aspects which needs to be taken into consideration by organizations to compete on the market. Moreover, we concluded that growing resilience with the aid of digital transformation supposes balancing short-term necessity with long-term opportunity.

In the following years, companies will adopt cloud computing, artificial intelligence and automation of processes and will turn it into a basic need or more, a requirement. Remembering the market 30 years ago, when owning a website for its business represented something extremely rare, puts the advancement of technology on a good light and threats in the same time firms' which are reticent on adapting innovation in their processes.

We aim that this study will help future entrepreneurs and CEOs to better organize their strategy on business resilience and on digital transformation.

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