THE ORGANIZATIONAL RESILIENCE IN STARTUPS THROUGH THE LENS OF INNOVATION

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Abstract

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The operational continuity of organizations, especially startups, is a significant concern for all stakeholders directly or indirectly involved with the company. Crises are typically unpredictable and abrupt, as seen in the recent COVID-19 crisis that disrupted the entire economy. Consequently, startups are required to be resilient in the face of environmental turbulence. Resilience is the ability to adapt a company's activity to adverse conditions while relying on innovation, diversity, flexibility and resilience (Norman, 2000). Among the substantial factors of resilience, innovation stands out. In this context, our research aims to understand the influence of innovation on the organizational resilience of startups during crises. Through an exploratory approach, data collection involves semi-structured interviews with 31 startups operating in various industries. Thematic content analysis highlights that managerial, technological, and social innovation enhance the organizational resilience of startups in times of crisis.

Keywords: Organizational Resilience, Resilience Factors, Innovation, Startups, Crises

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1. INTRODUCTION

The economic environment is characterized by volatility, uncertainty, complexity, and ambiguity (VUCA). Major international incidents such as the 2008 global crisis and the COVID-19 pandemic have demonstrated that crises are unpredictable and abrupt events. The recent pandemic crisis shook the cohesion of organizations worldwide, altering the competitive landscape and the overall business environment. Global values and habits changed, influencing the demand for products and services and altering work practices (Belghitar et al., 2021). These crises prompted companies to review their business procedures to better manage the consequences of unexpected and unforeseen events that could disrupt their activities (Bhamra et al., 2011). In this

logic of crisis and adversity, the question of managerial innovation and the development of a resilience mechanism have become a necessity for all businesses today more than ever. Innovation should play a crucial role in adapting to the new context and, consequently, in the survival of businesses (Priyono et al., 2020). Organizational resilience should enable organizations to resist or respond to a crisis and adapt to environmental constraints.

Research on organizational resilience has mainly focused on large small and medium-sized enterprises (SMEs). However, few studies have analyzed this issue in the context of startups. Startups are key drivers of economic development, job creation, and innovation. Nevertheless, they have fewer resources to withstand existential threats (Latham, 2009; Limnos et al., 2014). Unlike large enterprises, startups are unique in their organizational structures, leadership styles, available resources, and internal atmosphere. Therefore, they are considered more vulnerable than other companies and operate in more challenging circumstances.

In particular, Moroccan startups are impeded by gaps that can hamper their development. These include limited access to finance, a sometimesinadequate technological infrastructure, a lack of experience and skills, limited market awareness, regulatory barriers and so on. To overcome these deficiencies, it is essential to foster an environment conducive to innovation, both in products and services and in approaches to solving these structural problems. In this respect, innovation is an essential driver for the growth and development of startups, especially in a developing country like Morocco. It will foster their competitiveness on a global scale, stimulate economic diversification, and support the creation of skilled jobs while optimizing the use of resources and strengthening their reputation on the market. By adopting innovative approaches, startups can build resilience and make a significant contribution to Morocco's economic growth.

In this perspective, organizational resilience has become imperative for Moroccan startups, allowing them to overcome uncertainties and ensure their prosperity. A resilient company will constantly find ways to take risks and leverage opportunities (Aldianto et al., 2021). Linnenluecke and Griffiths (2010) defined resilience as the ability to accept adversity and recover from it. Organizational resilience is a complex combination of behaviors, attitudes, and relationships that can be created, evaluated, and controlled.

Innovation on its part is also considered a constitutive element of the future of startups; it represents a decisive and substantial factor in determining the performance and success of these young companies. It is imperative for the survival and success of the organization in a turbulent market environment and a key factor for the longterm success of these businesses (Ratten, 2015).

In this perspective, the objective of our article is to understand and explain the influence of innovation on organizational resilience given that innovation has a crucial importance in the startup life cycle. Therefore, our research question is as follows:

RQ: How does innovation influence the organizational resilience of startups in times of crisis?

In order to define the key concepts and the state of play in our research, we will begin with a literature review on the organizational resilience of startups. We will then draw on previous studies to demonstrate how startup innovation can strengthen the organizational resilience of startups.

After reviewing the literature, we focus on the epistemological posture and methodological choice, followed by analysis and discussion of the results gathered from 31 selected startups. This exploratory study is based on an interpretativist epistemological posture and a qualitative research methodology in the form of semi-structured interviews, which enables us to analyze and provide elements of an answer to our main question. Finally, the conclusion of this work sets out the answers to our research question, identifying the main findings and limitations of the research, as well as avenues for further study and future development.

Through this article, the literature is enriched by a conceptual framework enabling startups to use innovation to strengthen their organizational resilience. The results of our thematic content analysis show that managerial, technological and social innovation increase the organizational resilience of startups in times of crisis. In other words, our results contribute to the literature by deducing that innovation influences the organizational resilience of Moroccan startups.

The structure of this document is as follows. Section 2 reviews the relevant literature. Section 3 analyzes the methodology used to conduct empirical research on Moroccan startups. Section 4 presents the main findings and discussion. Section 5 concludes the paper.

2. LITERATURE REVIEW

Before discussing the methodology and results of our study, we will start with a conceptual overview of the different concepts used to clarify the perceived differences in contribution.

2.1. Organizational resilience: A double-edged sword for startups threatened by crises

The emergence of economic crises is generally unforeseen. The recent COVID-19 crisis is undeniable evidence of this uncertainty. This pandemic has triggered a global crisis (Fakir & Erraoui, 2021), with significant economic impacts and social upheavals (Sharma et al., 2021; Woolliscroft, 2020).

To address this low-probability, high-influence problem, management science researchers have sought to understand how organizations can prepare to respond and overcome these different forms of crises to maintain performance and anticipate decline and failure (Perrow, 1999). The objective is to find relevant solutions for organizations to reduce the harmful effects of crises (El Boussadi & Aaouid, 2023). Among the revolutionary solutions proposed, resilience stands out.

Resilience is a polysemic concept applied in various fields (Burnard & Bhamra, 2011). In the field of information technology, resilience refers to the ability of a system to fulfill its function despite malfunctions in one or more of its constituent elements (Eddahani et al., 2022). In the ecological domain, resilience is defined as "the ability of an organism or population to recover or regenerate, and the ability of an ecosystem to recover more or less quickly from a disturbance" (Koninckx & Teneau, 2010, p. 21). In physics, it refers to the internal capacity of a material to return to its original shape after receiving a shock. In psychology, it denotes an individual's ability to resist trauma, bounce back from adversity, and land on their feet despite life's setbacks.

Under the pen of managers, resilience is a multidimensional phenomenon that addresses the actions organizations face in situations of uncertainty (Rhazzane et al., 2023). Similarly, the Organisation for Economic Co-operation and Development (OECD, 2019) defines resilience as



"the ability of systems to absorb a disturbance, recover from disruptions, and adapt to the changing situation while maintaining, for the most part, the same function as before the shock" (pp. 9–10).

To this end, resilience is a concept linked to several fields and has diversified with each new use, culminating in the field of economics in the concept of organizational resilience. The latter refers to the ability of a group to avoid organizational shocks by building continuous systems of actions and interactions aimed at preserving the expectations of different individuals about each other (Weick, 2003).

Weick and Sutcliffe (2011) emphasize that organizational resilience combines three closely related capacities:

• absorption capacity refers to the system's ability to absorb, resist shocks, and maintain business continuity;

• bouncing-back capacity, which denotes the organization's ability to invent a new future, act, and prepare new solutions for unpredictable situations (Rhouiri et al., 2022);

• adjustment capacity, which, in turn, allows the organization to reinvent itself and adapt at any moment to disruptions and changes it faces (Weick & Sutcliffe, 2015).

In light of the various definitions mentioned above, we can conclude that the concept of organizational resilience is multidisciplinary. Moreover, debates surrounding its definition highlight that, for businesses, the most crucial aspect is their ability to anticipate, resist, adapt, and recover, especially in the face of unexpected and disruptive shocks that potentially threaten the company's survival.

2.2. Startups' innovation: A strategy for organizational resilience

The emergence of Moroccan startups began to solidify after the creation of an ecosystem that fostered startup development, particularly with the saturation of the job market and the gradual change in the mindset of young people. Currently, Morocco has over 2000 active startups in various domains (Saoura & Abriane, 2021). These businesses are generally considered to be in a growth phase.

The term "startup" originated in the United States and is used to describe young companies with high growth potential, regardless of the sector. According to business historian Fridenson (2006), a startup is a high-growth company that uses new technologies and requires significant funding through fundraising. Unlike typical companies, startups do not immediately know what they will produce, who their customer is, or how to profit from it.

Other researchers define startups based on criteria related to innovation and technology. Tarillon et al. (2015) defines startups as "innovative entrepreneurial firms under twenty-five years old that market products and/or services with high technological content and have a high growth potential" (p. 68). These definitions highlight that startups are generally characterized by innovation, high growth potential, recent establishment, and a significant technological component.

However, startups operate in a complex and constantly changing environment, where crises are inherent and can have detrimental effects on their health. Therefore, startups need to adapt, demonstrate flexibility and agility, and leverage their innovative nature to absorb shocks induced by crises, showcasing their resilience.

Studies on business recovery strategies demonstrate that innovation is a fundamental resilience strategy. Research has shown that more innovative and high-performing organizations are more likely to resist crises or recover quickly, providing empirical evidence of the positive relationship between innovation and resilience (Bristow & Healy, 2018).

In this context, innovative activities contribute to protecting startups against crises and developing competitive capacities. Innovation, in times of crisis, becomes a means of survival and success in the face of unprecedented challenges (Klodane & Zvaigzne, 2017). Innovation processes involve renewing the organizational resource base by reorganizing existing resources and introducing new resources and factors of production. This enables organizations to respond to environmental challenges and market opportunities, seeking sustainable competitive advantages (Zollo & Winter, 2002). Therefore, innovation has a significant influence on organizational resilience and serves as a driver of sustainable development in countries (Gupta, 2023). In other words, innovation is a powerful trigger for organizational resilience. It turns out that startups, with their expertise in innovation, are more flexible and adaptable during difficult periods, making them more resilient. Innovation contributes to startups' resilience at the managerial, technological, and social levels.

Managerial innovation manifests through dynamic capabilities, identifying and seizing opportunities, and leadership agility, leading effectively during periods of rapid change, uncertainty, and increasing complexity.

Technological innovation is essentially linked to technological capability as a crucial factor for startup resilience.

Social innovation, related to knowledge management within startups, is stimulated by creating an environment that enhances the emergence, capture, and validation of new ideas (Prax, 2007).

3. RESEARCH METHODOLOGY AND APPROACH

Before proceeding with the presentation and analysis of the main results of our study, it is necessary to first describe the research process in this field by identifying the profile of the respondents and the reasons for their selection, as well as the research instruments and techniques used for analysis and interpretation.

Based on a multidimensional literature review, our research aims to identify and clarify the specific characteristics that startups must embody to be resilient to environmental changes. We also aim to highlight the emergence of the concept of organizational resilience during a crisis. More specifically, we seek to understand and explain the influence of the innovation factor, as an attribute of the startup, on organizational resilience.

Given these objectives, we have chosen a research strategy based on an interpretative epistemological stance and an exploratory qualitative research methodology in the form of semi-structured individual interviews.

In qualitative analysis, the researcher analyzes and interprets data from interviews. It aims to understand the interpretations resulting from the phenomenon under study, which are obtained through relationships (Pourtois & Desmet, 2007). They enable us to gain an understanding of complex interactions, based on tacit processes (Marshall & Rossman, 2006). We opted for semi-structured interviews, widely used in management science and particularly in the analysis of business situations, to gain a detailed and in-depth understanding of the aforementioned problem. According to Bourdieu and Passeron (1968), semi-structured interviews offer a valuable opportunity to delve into the thoughts and experiences of the interviewees. The goal is to obtain the viewpoints, reflections, and observations of individuals with specific knowledge and difficultto-access information.

The construction of a qualitative sample tends to be more random (Miles & Huberman, 1994). The notion of a "statistically representative" sample has little meaning in qualitative research and has been replaced by the concept of a "progressive construction of the sample", i.e., until redundancy of responses. In this sense, our sample of 31 startups was based on data we collected about these companies through our knowledge rather than based on a random selection of companies.

The individuals interviewed in our study are mainly leaders or entrepreneurs of startups operating in various fields (restaurants, clothing, real estate, services, pharmaceutical industry, etc.). They expressed great openness to our in-depth inquiry approach. We have been able to address the challenge faced by many researchers related to the unavailability of study subjects in the field or the lack of data collection freedom. In our study, the interviewees are the leaders and founders who showed great openness to our in-depth inquiry approach. The duration of the interviews with each of them was spread out, on average, at 45 minutes per person.

The selection of interviewees is presented in the following Table 1.

Number of startups	Profile	Field of activity	Years of experience
3	CEOs	Pharmaceutical	Between 5 and 10 years
4	CEOs	E-commerce	Less than 5 years
3	Managers	Technology	10 years or more
3	CEOs	Industry	Between 5 and 10 years
3	Entrepreneurs	Foodservice	Less than 5 years
3	CEOs	Service	Between 5 and 10 years
1	Administrative managers	Industry	Less than 5 years
5	Entrepreneurs	Service	10 years or more
}	Managers	Technology	Between 5 and 10 years

Table 1. Sample of interviewees

Note: CEOs — Chief executive officers.

Our data collection was based on permission to record the speeches of the interviewees, all of whom finally agreed. At the same time, we opted for observational notes to record what we observed that did not appear in the speeches. Following the qualitative approach, the data were analyzed using semantic logic, applying the thematic content analysis approach. In the case of semantic processing, the analysis is carried out manually, using the content analysis approach to analyze the meaning of the ideas expressed, the words and their meanings.

4. RESULTS AND DISCUSSION

After presenting our research methodology and the way, we conducted our interviews, as well as the method used to analyse the data generated by our qualitative study, this section presents the results obtained.

The thematic content analysis was carried out in four stages, corresponding to the four sections of the interview guide. The first stage consists of collecting general information about the startups interviewed. The second aims to analyse the dynamic capacity of the startups. The third stage focuses on the startup's technological capacity. Finally, the fourth stage is used to study startups' knowledge management.

4.1. Results

We chose to use the thematic content analysis method in this section. We were able to explore the depth of the data collected using this method, which includes discourses that are very rich in information on the subject in question. We present the results of our exploratory study by theme in order to remain consistent with the logic used when presenting our interview guide.

Following the summary table, we conducted interviews with managers of startups in different sectors of activity, intending to diversify the sources of information and identify the different opinions of managers working in multiple activities, in order to identify the relationship between innovation and their resilience during the crisis period.

According to the interviewees, innovation helps startups to adapt to changes such as evolving customer needs, competition and new regulations. It also enables them to find new opportunities for growth by developing new products or services in association with new partners. All the interviewees confirmed that, in addition to these elements, innovation enables startups to differentiate themselves from the competition by offering unique and innovative products or services.

Indeed, innovation is crucial to the organisational resilience of startups. It is an essential means of enabling them to face up to challenges and grow in an uncertain environment.

To facilitate the analysis of all the results, we chose to opt for sub-variables of innovation, namely dynamic capacity, which explains managerial innovation, technological capacity, which explains technological innovation, and knowledge management, which explains social innovation, while relating these to organisational resilience.

All of the respondents explained that during the crisis, innovation at all of these levels enabled them to ensure business continuity and meet the different needs of their customers, which ensured their resilience during this difficult period.

4.2. Discussion

4.2.1. Dynamic capacity as a source of managerial innovation

Following the data collected via the interviews conducted with the startups that were the subject of our study, we found that the majority of startups confirmed the influence of dynamic capacity as a sub-variable of managerial innovation on their resilience during the pandemic crisis:

• a quick adaptation to environmental eventualities impacted by the crisis, manifested by the rapid adjustment of their platforms for product sales by adding home delivery to meet customer needs while maintaining a tolerable level of sales during this critical period — a strategic reorientation favoring this method of sales over the traditional one;

• a rapid response to emerging trends by adjusting production lines according to demand and need;

• exploitation of unexpected opportunities, exemplified by one startup in our sample creating an application for patient monitoring, addressing a new need arising from the crisis.

Dynamic capability, therefore, translates into a quick adaptation to changes, a rapid response to new contexts, and an effective exploitation of opportunities generated by the crisis. This dynamic capability varies from one startup to another based on the industry, managerial style, goals, emotions, and sensations of individuals as management actors. It can also be deployed and exploited by the leader and their ability to detect and identify opportunities and threats, as well as reconfigure financial systems.

According to the results obtained and with the agreement of the majority of startups, we can validate that managerial and organizational dynamic capabilities positively influence resilience through the continuous renewal of activities in times of turbulence.

4.2.2. Technological capacity as a source of technological innovation

Technological development has profoundly influenced the management of startups, which, depending on their activities, use digital technologies in their daily operations, with notable repercussions on the continuity of the operational cycle during times of crisis.

On one hand, the analysis of our sample reveals that the degree of dependence on new technologies is high among the startups in our study. According to managers, technological development is now a crucial lever for the smooth operation of activities. The evolution of digital technology automatically influences daily work methods and increasingly helps innovate management styles. According to surveyed leaders, the stronger a startup's technological potential, the higher its level of efficiency and effectiveness, allowing it to maintain an overall performance at an acceptable level in response to deployed efforts.

In the same vein, the use of new technologies has a relative impact on the creativity of startups.

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Some find them necessary to enhance creativity and research within the organization, while others do not see them as essential. This largely depends on the industry. Most managers agree that information and communication technologies enable startups to be more adaptive, flexible, and creative, encouraging collaboration with stakeholders, expanding the startup's market, and making it more resilient.

This technological capability minimizes costs, saves resources, and increases them through an online presence, facilitating the startup's entry into new markets. Technologies also enable remote work without a physical presence at the workplace, emphasizing the importance of technological advancement during a crisis.

On the other hand, innovation plays a crucial role in the growth and sustainability of startups. The majority of startups in our survey confirm innovating their products to satisfy customer needs. Some even innovate in management processes. However, three startups made no modifications compared to the pre-crisis period. Managers consider innovation as the key to a startup's success in the face of increasingly stiff competition.

Innovation allows startups to ensure growth and development, strengthen and maintain sustainable competitiveness in evolving markets by introducing new products, increase productivity, improve product and service quality, and easily adopt new technologies. One startup in our sample, specializing in collaborative work tools, developed additional features to meet the increased needs of remote work, supporting productivity during the COVID-19 crisis by including features for remote project management, secure file sharing, and video conferencing.

From the above, it is evident that the higher a startup's technological and innovation capabilities, the better it can ensure resilience during unprecedented crises.

4.2.3. Knowledge management as a source of social innovation

Knowledge management as a part of social innovation refers to the amount of knowledge that a company can acquire over time. This can form the basis for the application of knowledge in the presence of uncertain conditions, such as COVID-19.

This knowledge management leads to the creation of a fertile environment that enhances the emergence of new ideas, their capture, validation, and transformation into projects. It also forms a strong link with the entity's objectives and is automatically related to organizational resilience, which is why we have dedicated a section to study it.

Results have shown that the majority of startups mobilized knowledge management systems during the crisis, deemed useful and effective, though a minority did not apply such a system, considering it unnecessary.

Eleven startups created a shared database containing practical guides, tips, and resources to facilitate remote work, reinforcing the continuity of operations. When asked about the effectiveness of knowledge management, responses delineated the following five effects:

• developing the knowledge and skills of employees;

• improving communication and collaboration within teams;

• enhancing productivity and flexibility of the entity;

• improving relationships with all stakeholders, especially customers, by meeting their needs.

Healthcare startups, in particular, created a shared knowledge base to collect and disseminate crucial information on medical protocols, the latest health recommendations, and best care practices. This allowed them to quickly access necessary information and adapt their practices during a crisis.

Knowledge management also facilitated the handling of intellectual assets. From the analysis of the results, it is evident that, for the majority of startups, knowledge management positively influences resilience through innovation in unusual periods by improving productivity to meet customer needs and developing the knowledge and skills of employees due to effective intellectual asset management, thereby improving team communication and collaboration.

5. CONCLUSION

Our research introduces the concept of business resilience based on a synthesis of the literature review related to this concept, providing a growing insight into the organizational resilience of startups. To enhance our literature review, we conducted a qualitative study to understand the influence of the innovation factor on the organizational resilience of startups. For practical implications, our study focuses on startups, given their high vulnerability to crises.

In conclusion, we can state that to overcome crises and to have resilience capacity, startups must be innovative in their business practices, as innovation enhances their organizational resilience. This occurs across three dimensions: managerial, technological, and social.

On the managerial front, the results show that the dynamic capabilities of startups are considered a response to the changing needs of the market. This capability translates into the emergence of new products/services, more efficient processes, or other changes aimed at addressing environmental conditions changes during and after the crisis.

On the technological front, startups prepare systems to develop their businesses during a crisis by maximizing digital development (automation, remote work, and artificial intelligence) to be adaptable to change.

On the social front, startups indicate that agile leadership is necessary to help the management analyze and make decisions regarding innovation processes, and knowledge management, which holds a strategic position in increasing innovation capacity and thus the resilience of startups.

According to these results, the aforementioned factors can help startups anticipate changes, reduce the risk of uncertainty, and strengthen the organizational resilience of startups during potential crises. This will undoubtedly have a positive impact on these entities, allowing them to renew their resources and skills, and build effective strategies to enhance their competitiveness in the market and, consequently, their sustainability.

In conclusion, this study is one of the few to have addressed the question of the influence of innovation on the organizational resilience of startups. However, it is imperative to note that this study has limitations that must be taken into consideration. Firstly, our study did not use any significant theory to support the conceptual framework of the study. Then, in our methodological design, the choice of an exploratory interview approach did not allow us to generalize and validate the results obtained. And finally, we limited ourselves solely to exploring Moroccan startups.

These limitations pave the way for future research. We believe that other research strategies can be adopted to analyze the role of innovation in the organizational resilience of startups, such as the use of quantitative methods, which will make it possible to increase the study sample, validate the results obtained and generalize them. We can also recommend comparing these results with other countries that may present particularities in relation to the Moroccan context and explore other factors that can ensure organizational resilience for companies.

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