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## Is Organizational Resilience a Competitive Advantage?

*¿Es la resiliencia organizacional una ventaja competitiva?*

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### ABSTRACT

The research aims to investigate and expose what organizational resilience is and to determine whether it is a source of competitive advantage that drives the efforts of leaders and other stakeholders towards competitiveness. A documentary review was carried out for this work. In addition, qualitative research methodological strategies and case study data collection tools were applied. The main findings of this work are that organizations that cultivate organizational resilience have a more significant learning opportunity to navigate through crises, overcome them and transform.

Keywords: Organizational resilience; company performance; resilience and competitive advantage.

Jel code: L25.



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## RESUMEN

La investigación tiene como objetivo investigar y exponer qué es la resiliencia organizacional y determinar si es una fuente de ventaja competitiva que impulsa los esfuerzos de los líderes y demás *stakeholders* hacia la competitividad. Para este trabajo se realizó una revisión documental. Además, se aplicaron estrategias metodológicas de investigación cualitativa y herramientas de recolección de datos de estudio de caso. Los principales hallazgos de este trabajo son que las organizaciones que cultivan la resiliencia organizacional tienen una oportunidad de aprendizaje más significativa para navegar a través de las crisis, superarlas y transformarse.

Palabras clave: Resiliencia organizacional, desempeño de la compañía, resiliencia y ventaja competitiva.

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## INTRODUCTION

The economic environment is uncertainly and complexly increasing. Organizations and individuals are usually exposed to contingencies that combine unusual and unexpected events with ordinary events, i.e., disruptions that disrupt all organizational processes and affect stability and growth. The case of the H1N1 epidemic in 2009 and the 2008-2009 financial crisis affected Mexico with an economic recession and the loss of 50% of the currency's value against the dollar.

Global disruptive events affect the stability of organizations; although it seems that smaller ones are the most affected, multinational ones are also suffering the ravages of disruptions. For example, in the United States, in 2009, the General Motors Corporation applied to the New York courts to invoke Chapter 11 of the Bankruptcy Act (EFE, 2019). In 2011 American Airlines also invoked that law. In Mexico, in 2010, union problems, rising fuel costs, and the flu contingency in 2009 led to the bankruptcy of Mexicana de Aviación (Gámez, 2019).

Today, the current and unexpected COVID-19 pandemic has affected the whole world, transforming social dynamics and how organizations operate; this represents an uncertain future and increased risk.

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However, Mexican leaders of micro, small and medium-sized enterprises (MSMEs), accustomed to complex situations, have kept their organizations alive. However, at this time, with the pandemic, this stratum of organizations has experienced a loss of economic units; of the 4.9 million micro, small and medium-sized enterprises registered by Instituto Nacional de Estadística y Geografía (INEGI).

In the results of the 2019 economic censuses. Only 3.85 million companies survived September 2020 (INEGI, 2021; Téllez, 2020). It means the disappearance of 1,010,857 establishments (20.81% of the total), of which 24.92% correspond to private non-financial services, 18.98% to commerce, and 15% to the manufacturing sector.

On the other hand, INEGI (2020) mentions that from May 2019 to September 2020, small and medium-sized enterprises were the most affected; in percentage terms, 21.17% disappeared, and only 20.8% of micro-enterprises. An important fact raised by the Business Demography Study (INEGI, 2020) is the 20.8% of missing economic units, 19.1% used computer equipment, and 10% received financing. Theoretically, we can assume that any organization entering the virtual environment and using information technology and funding in their favor would improve their conditions and competitiveness.

Regardless of size, throughout their life cycle, all organizations face a rapidly changing environment that forces them to engage in change processes, which allows for increased efficiency, value creation, and permanence (Jones, 2008, pp. 22-23). For Daft (2011), change means flexibility and openness to innovation to survive.

In this scenario, leaders have contributed to guiding strategies to respond to competitive challenges. On the other hand, today, in the economic sphere (Meza, 2021; Durán, 2021), academic and political environment, Moreover organizational resilience is often used as a competitive strategy in business. The SME Competitiveness Outlook 2020: COVID-19: The Great Lockdown and its Impact on Small Business study note that small businesses that survive the crisis will face new normality that will be resilient, digital, inclusive, and sustainable (International Trade Centre, 2020).

The research aims to investigate and expose what organizational resilience is and to elucidate whether it is a source of competitive advantage that drives the efforts of leaders and members of the organization towards competitiveness. The questions guiding the study are: What is organizational resilience? Is Organizational Resilience a Competitive Advantage? Moreover, how is Organizational Resilience built? Finally, it is discussed whether resilience forges a competitive advantage and whether its application has generated positive results for those who implement it.

The first part presents the theoretical perspective. Then conceptual generalities of organizational resilience and its controversies, organizational change, and role in fostering corporate competitiveness are presented. In the second section, the research methodology is briefly mentioned. The third part presents the discussion and some cases of organizations that have managed to survive the current context and how organizational resilience triggers organizational change and transformations in business models. Finally, some reflections are presented.

### **THEORETICAL PERSPECTIVE: ORGANIZATIONAL RESILIENCE AND CHANGE**

Organizations face an environment dominated by new technologies and unsuspected threats; since the end of 2019, information technology has revolutionized the world in all its areas; these challenges demand new answers. The growing competitive pressures and the rapid adoption and use of information technologies (IT) as a competitive strategy, which in theory provides certainty, require organizational transformations to coordinate the efforts of employees under new working modalities, such as the home office; mainly to serve current clients and attract new ones, in a hybrid context: physical (offline) -virtual (online), as well as to manage the relationship with its sources of supply, with competitors and with the

government, among others. These changes finally disrupt the initial organizational design and move organizations toward new strategies and business models to face the contingencies of the environment to be more competitive.

The main forces for change in a complex, changing, and volatile environment are divided into macro-environmental and micro-environmental details. The former are global forces: economic, political, demographic, social, cultural, ethical, physical/natural, and science and technology; they are forces that bring organizational opportunities but also threats. In contrast, the details of the microenvironment are competitive forces close to the organization.

They are within its marketing system and our suppliers, competitors, marketing intermediaries, customers, and other audiences interested in the production organization and the internal forces. Both types of parties at a given time can affect the organization's ability to serve its markets (Lamb, Hair and Mc Daniel, 2011; Kotler and Armstrong, 2013; Jones, 2008), both offline and online. In this scenario, organizational resilience plays a fundamental role in the competitiveness of organizations. Deloitte notes that resilient organizations have the potential to forge flexible cultures that foster agile strategies and maximize the use of technology (Deloitte, 2021).

#### *Organizational resilience*

Risks and challenges are present in all areas of daily life. Significant challenges were created for organizational life; uncertainty and disruptive events became daily. Chen, Xie and Liu (2021) mention that these events, due to their probability of occurrence and impact, can be of two types: black swan or gray rhinos; the first describes a theatrical event with a low probability of occurrence and significant socio-economic impact, an example of these being the attacks of September 11, 2001, while the second, are high probability crisis and high impact potentials: according to Kelman (2021) are a “metaphor of overlooking how big and obvious is coming”, such as climate change and the COVID19 pandemic in 2020-2021, the latter says the author, there were predictions that something like this would happen and that it was only a matter of time.

However, some organizations survive and grow in adverse conditions, and others do not, so if all economic entities live under the same conditions, what explains why there are winners and losers? Some answers to these questions can be found in the organizational literature. These answers show that the critical factor for the success of some and the failure of others is organizational resilience, i. e., the ability to respond and adapt to change. These considerations derive from empirical inquiry findings from case studies.

In this process of organizational adaptation, individuals personally or collectively face adversities. Based on their skills, knowledge, own experiences, and disposition, they deal with risks; each person can act positively (although they may not) in adversity to achieve

personal balance and contribute to organizational balance. The individual capacity to respond to risks and challenges is called resilience by psychology. In contrast, organizations' capacity to survive challenging situations and extraordinary risks, organizational psychology is called organizational resilience. Organizational resilience also depends on capacities, including cognitive, behavioral, emotional, and relational (Hussein and Olivera, 2021).

All organizations face crises, and adverse events, each of its nature responds in a particular way to the environment. The fact is that some considered resilient organizations are getting stronger because they see the crisis as an opportunity to survive, while others, less resilient, are fading, as is the case with the million Mexican MSMEs that disappeared in 2021 (INEGI, 2021), due to the health crisis caused by the COVID-19 pandemic. Resilience also exists among large companies.

However, in 2020, five multinational organizations went bankrupt; Best Buy closed its stores in Mexico, Sin delantal left the country, Cinemex liquidated more than 140 cinemas, and Aeromexico and Interjet declared technical bankruptcy (NEUBOX, 2021). Others were only affected by decrease revenues without ending up (INEGI, 2020).

The literature review shows that the study of resilience has been applied in different disciplines: Physics, Psychology, Engineering, Ecology, Environmental Science, Organizational Science, Business, and Management.

According to some authors (Fundación Factor Humá.prg, 2010; Cossío, Ortega and Padrón, 2017; Meneghel, Salanova and Martínez, 2013), the initial study of resilience was conducted in physics and engineering to refer to the ability of materials to re-establish their shape after being subjected to external deforming pressures. Meneghel, Salanova and Martínez (2013), mention that the term also reaches psychology because of the interest in knowing the etiology and the development of psychopathology in children at risk.

García and Forero (2018) comment that it was in the 1970s that this research was carried out, which revealed the ability of some infants to recover from adverse events. In sociology and economics, resilience indicates the capacity of communities and economic systems to recover from any type of adversity and catastrophic event (Cossío, Ortega and Padrón, 2017). According to Holling (1973), in the ecological literature, resilience explains the processes of self-maintenance of ecosystems in the face of damage and changes caused or natural (Rogel and Uriquizo, 2019),.

Resilience is not a novel concept in the environment, Bégin and Chabaud (2010) declared that "L'idée de résilience n'est pas nouvelle. Traditional Chinese medicine refers to the ability to live systems to regenerate after a severe injury". In the social sciences, resilience has seen various transformations; in the 1980s, it was thought that "the individual is born

resilient and emphasizes human capacity" (Cossío, Ortega and Padrón, 2017). In the 1990s, it was considered that resilience is learned and results from individuals' interaction with their environment. In these years, the study of organizational stability gained popularity among academics, and research focused on analyzing post-disaster resilience (Chen, Xie and Liu, 2021).

Today, in the 21st century, it is said that resilience is built (Cossío, Ortega and Padrón, 2017). From the above, one might think that stability exists as long as a real threat prevails that coerces the individual and the organization. However, this is relative because all organizations have human capital with resilience. In the different disciplines through which resilience has transited, psychology is one of the fields of study. It has found fertile ground for its development, moving from an analysis of individual resilience to an organizational (or collective ones).

The latter is linked to the field of management because of the need to find formulas that explain and help solve the consequences of the continuous and recent disruptions faced by individuals, both individually and organizationally. Currently, in 2021, research, such as that of Hussein & Olivera (2021), is directing the gaze to investigate the impact of Information Technology on organizational resilience and analyze the role of Big Data (analytics and data visualization) in the digital age, to find new ways to serve customers, improve production efficiency or implement new business models.

The documentary review focused on studying of Resilience from the individual to the collective seeks to answer one of the research questions: what is organizational resilience? To provide a channel for the exposition of the meaning of resilience, we begin with the proposal of the American Psychological Association (APA), which addresses the level of the individual: "Resilience is the process of adapting well to adversity, trauma, tragedy, threat, or significant sources of tension, such as family or personal relationship problems, serious health problems or situations. Job or financial stressors. It means "rebounding" from a difficult experience as if you were a ball or a spring" (American Psychological Association, 2011) and coming out well and in better shape.

In terms of organization, some definitions are as follows: according to Meneghel, Salanova and Martínez (2013), organizational resilience is "the capacity of organizations to absorb changes and disruptions, both internal and external, without affecting their profitability and that they even develop a capacity such that, through rapid adaptation processes, they can reap extra benefits from unforeseen and adverse circumstances".

Luthar, Cicchetti, and Becker (2000), suggest that resilience is "...a dynamic process encompassing positive adaptation within the context of significant adversity". Hussein & Olivera (2021, p. 229), citing Duchek (2020), on the other hand, mention that organizational

resilience is a “phenomenon (social), multifaceted, ...,” it is “an organization’s ability to anticipate potential threats, to cope effectively with adverse events, and to adapt to changing conditions.”

Sanchis and Poler (2014) take organizational resilience and business resilience as synonyms and mention that they refer to the company's flexibility to transform, adapt, and the readiness to recover in an agile and efficient way. However, the authors do not mention that the disposition comes from the organization members since it is through their collaboration that the organizations are built and transformed into places of social interaction where members can contribute to creating a competitive advantage and organizational learning (González and Córdova, 2020).

If resilience is built and learned, it can be said that it is a regular and frequent sociocultural process in everyday life – mediated by symbolic elements – that results from individual and collective interaction. In a context where adversities are faced, learning occurs and results in transformation. In this research, organizational resilience is a dynamic corporate process that challenges individual and collective resistance and directs participants towards positive and innovative adaptation to recover from adverse and unexpected situations in changing and uncertain contexts. The dynamic nature of the resilience process is conceived, in terms of Hussein and Olivera (2021), of organizational-environment interaction.

Resilience considers individuals both individually and as part of a collective group and members of an organization, a sector, and a nation; this implies considering resilience from different levels of analysis. Organizations and individuals have always faced various risks and extraordinary challenges, which is why resilience has been present in human beings throughout their evolution.

In the 21st century, understanding and explaining the processes by which some organizations withstand challenges and competitive uncertainty is imperative. Organizational analysis translates and appropriates the concept of resilience to investigate and explain the capacity of organizations (their leaders and members) to respond to and recover from the contingencies and challenges that overwhelm humanity and affect its survival. The use of this notion in this field, according to Salgado (2012), is relatively new. “It is used as a way of designating the resilience of organizations to an unexpected event... as a trigger for forecasting actions... (and) as part of a strategic process.”

Despite the myriad definitions of organizational resilience in the literature, Meneghel, Salanova and Martínez (2013) and Chen, Xie and Liu (2021), among others, agree that organizational resilience does not have a solid theoretical foundation to understand it and to explain how organizations, individuals and groups manage to cope with adversities and environmental stress, adapt and achieve favorable results. It is said that there is still no



consensus among academics on what organizational resilience means (Sawalha, 2015) and that most research interprets resilience from four perspectives: 1. Capacity; 2. Process; 3. Function and 4. Result.

Chen and others consider organizational resilience from two approaches: dynamic and static. The first considers the perspective of capacity and process, a dynamic and progressive process exhibited by firms in response to crises or adverse situations. Static explores organizational resilience from a results and functional perspective; the first is the ability of organizations to remain adaptive positive in the face of crisis, while functional considers organizational resilience as the ability to adapt to dynamic and complex environments.

The incipient theoretical development of this concept has led different authors to propose ways of analyzing and measuring resilience capacity. Duchek (2020), for example, offers to study the construction of organizational resilience from a model that considers three successive stages: 1. Anticipation; 2. Confrontation, and 3. Adaptation; each presents challenges and obstacles.

The first is characterized by observing and analyzing the environment for signs of potential problems and treating them behaviorally with the support of risk management leaders. Next, organizations must act and prepare for potential risks; the critical factor is resources at this stage. During the coping stage, members of the organization must assume and accept that they are during a crisis.

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At the same time, crisis management teams and their leaders must develop and implement solutions; at this stage, the critical factor is human capital-social resources. The third stage comes after the crisis; once the significant disruption has been resolved at a manageable level, the organization must focus on reflection and learning. Behaviorally, this is the time when risk management leaders implement change initiatives, not only to prevent future crises but also to apply lessons learned and build organizational resilience capacity.

This resilience analysis model requires cognitive actions at each stage to generate and select alternatives and measures and implement the best ones to respond effectively to the crisis. Resilient organizations can only emerge when cognition and behavior are amalgamated. The importance that organizational resilience has acquired in the world has attracted the attention of various international organizations to intervene in its dissemination and implementation through general rules that guide actions and subsequent evaluation of their compliance to grant the corresponding international certifications.

The International Organization for Standardization (ISO, 2017) created the norm ISO 22316:2017, Security and Resilience. Organizational Resilience, principles, and attributes

define the “Organizational resilience is the ability of an organization to absorb and adapt in a changing environment to enable it to deliver its objectives and survive and prosper.”

It states that resilient organizations can anticipate and respond to threats and opportunities arising from sudden and gradual changes, both within and outside the organization. This proposal may be helpful for organizations that decide to incorporate ISO 22316:2017 practices into their organizational dynamics. Still, the problem with its implementation is that resilience is a dynamic and continuous process. It may not be possible to regulate and standardize it as cultural components are constructed. That is a process of making sense among the organization members to interpret and resolve threatening events and engage in an organizational learning process for change.

The importance of organizational resilience as a process is also linked to other standards, such as the British Standard BS 25999 published in 2007, which seeks to direct the continuity of the organization in the event of disruptions, which Sanchis and Poler (2014) terms are unexpected disruptions that disrupt the organization or its supply chain. This standard was replaced by ISO 22301; in 2012, and more recently by ISO 22301, Business Continuity Version 2019.

Organizations respond differently to each traumatic event. While adversities are relatively different for each economic entity, unique catastrophic situations that affect the whole world, such as the current COVID-19 pandemic, are not ruled out. However, their scale and impact vary in each organization and context. Meeting the challenges requires building a resilient culture and a robust shared value structure that leads to a resilient organization. However, what is a resilient organization? According to Bégin and Chabaud (2010), a resilient organization is characterized by three aspects: 1. Pragmatism to face reality without showing excessive optimism; 2. A shared value system gives meaning to difficulties and challenges, and 3. The ingenuity to innovate, to propose new solutions in the face of unusual events.

They also point out, based on Hamel and Välikangas (2003), that a resilient organization faces four main challenges: Cognitive, be aware of the changes that will affect the organization; Strategic, to imagine new strategic options in the face of a declining strategy; Political, to reallocate resources to new activities and products; and Ideological, to teach a proactive and focused attitude to the constant search for opportunities. They mention that the resilient organization must take a proactive approach, learn from crises to face future challenges, and identify and correct its strengths and weaknesses. Being resilient requires the organization’s capacity to absorb so as not to collapse in the face of shock, the ability to renew to invent a new future, and the power to take ownership of learning processes.

From the above, it can be said that, in terms of competitiveness, if organizational resilience is improved and strategic and operational elements are combined, the organization will be

able to manage risk more effectively. Organizational strength does not stem from risk avoidance but rather from frequent and controlled exposure to strengthen and learn, leading to organizational change.

### *Organizational change*

Because the organizational environment is highly changing, organizations in general, regardless of their origin, nature, objectives, and size, in an attempt to adapt – gradually or vertiginously – to the requirements of the environment; economic, technological and social, forge the idea of change among their workers. Ideally, change should be planned, but it is also the case that it is imperative and immediate.

To reduce the fear among members of the organization about the disruption of the status quo, it is theoretically suggested that a culture of change should be instituted where norms and values are shared to respond and adapt to changing situations and, above all, to innovate in ways of working, to generate knowledge, to appropriate new technologies and to help develop new strategies and forms of work. Interaction with all Stakeholders will undoubtedly help strengthen their resilience to the benefit of both the worker and the social system.

Planned organizational change is a process that allows an organization to transform itself, leaving behind its current state, and acquire a new one to be competitive (Jones, 2008). According to Jones (2008, pp. 270-271), change can occur at different levels of the organization:

- In organizational functions, prioritizing the essential tasks that generate the most outstanding value to stakeholders may change the structure or introduce new technology.
- Through the transfer and appropriation of new technology and know-how (patents), technological capabilities enable the company to create and develop new products and thus capture new markets or improve its production processes. In addition, the quality of its products establishes a competitive advantage.
- Through innovative ways, human capital motivates and organizes it (without neglecting control) to contribute its knowledge and skills to create value for clients and other stakeholders.
- In organizational capacities, a theoretical assumption is that an organization can take advantage of technology by engaging its employees and harnessing their helpful resources, redesigning the organizational structure, and fostering the institution of norms and values that shape a renewed corporate culture.

These levels are interdependent; the alteration affects the others; however, the critical element of change is the human factor. The main challenge will be to reduce resistance to change at the individual and group levels; at the personal level, according to Jones (2008, pp.

276-278), it manifests itself in absenteeism and rotation, little cooperation, persistence in maintaining obsolete habits or behavioral styles, among other. So, the leader must implement strategies to reduce uncertainty and insecurity. At the group level, the leader's challenge is to influence the strength of informal working group rules and foster cohesion and a sense of belonging at (one level) an intensity that facilitates change.

According to the literature, organizational change is a challenging for the leader and its members; changing organizational inertia is not easy, but it is essential to respond quickly and flexibly to market demands. Fostering creativity among workers and steering the organization toward an innovative culture is competitive. Creativity and innovation have been rationalized and accepted worldwide, especially in the production sector, since the competitive environment forces companies to create innovative and quality products, reduce development time and costs, and always create more excellent value for customers.

Today, innovation is said to be something that both organizations and individuals must practice. The culture of innovation is fundamental to facing the changing world in which we are immersed and fostering organizational change. Organizational resilience and organizational change merge into a collective process of constructing meanings and identities. It involves symbolic elements for the survival and adaptation of the organization to the changing environment. According to Shein (1997), change requires leadership activities and shared experiences (people-to-people contact), bearing in mind that the process of change requires organizational resilience on the part of the leader and the ability and will of the members to face adversity and make possible the organizational transformation.

## **METHODOLOGY OF RESEARCH**

The qualitative research methodology was used to meet the objectives of the research. A literature review was carried out using different sources of information: specialized texts, scientific articles, statistical reports (from INEGI), websites, and reports from national and international organizations that provide information on current topics and companies around the world, such as Deloitte, Forbes, and journals such as *El Financiero*, among others. The international research results carried out by Deloitte in 2020 were also analyzed.

Methodological strategies of case studies were considered in the assignment, which offers the advantage of an in-depth analysis of the case analyzed. However, there are limitations to generalizing the results (Yin, 2003). Participant observation, in-depth interviews with the owner/CEO of a Mexican company, and qualitative speech analysis were carried out. It describes the actor's experiences based on his perception, words, and particular forms of language. The principle of data triangulation was applied so that several sources of

information and methods were available to collect data and enrich the research (Hernández, Fernández and Baptista, 2006).

## DISCUSSION AND EMPIRICAL EVIDENCE

Organizational resilience promotes processes of change within the organization and strengthens the social system's capacity – and of each member of the organization – to respond to adversity and make the organization resilient. Organizational resilience and organizational change are concepts in which learning, and innovation play a crucial role in helping the organization move from one current state to another in better conditions.

Resilience and organizational change are linked to helping organizations reinvent their strategies and business models aspire to a resilient culture, more excellent greater value for stakeholders, and continuously improve and be competitive.

The theory of organizational change discussed in this paper, among others, provides a conceptual framework to explain organizational resilience. This theory assumes that organizations do not remain static and are continually pressured by internal and external forces that condition them to change. Transformations can be planned or presented suddenly and unexpectedly; the former does not immediately change the essence of the organization or the nature of the strategy. Instead, they are gradual, incremental modifications responding to an evolutionary change (Jones, 2008) in which its members are involved to a greater or lesser extent to give the organization the flexibility it needs to innovate.

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In contrast, a drastic and sudden change resulting from unexpected events in the environment, which creates uncertainty among the members of the organization, implies or requires a high level of audacity on the part of the leader or agent of change, to radically alter the way the processes are carried out.

These may be changes in production activity unrelated to previous activities, attention to new markets, disruptive technological change, and Among others, that is to say, a total reengineering of processes in the organization, in terms of Hamer and Champy (quoted by Jones, 2008, p. 283), is the “fundamental reformulation and radical redesign of business processes to achieve dramatic improvements ... in cost, quality, service, and speed.”

An organization does not know if it is resilient, until a threatening event puts it to the test. Being resilient means responding quickly to uncertainty by detonating forecasting and planning processes or changing spontaneously with dramatic and risky changes for the permanence of the organization. In responding to uncertainty, resilience emerges as a long-term sustainable competitive advantage that gives some superiority over the competition. It

constitutes a competitive advantage because it resides in each member of the organization, and competition cannot duplicate it, whereas overall, it results in a distinctive feature that makes the organization different from its competitors.

Today, environmental threats constrain all participants more than ever in the organizational sphere, so it is essential to forge organizational resilience as a strategic weapon for competitiveness. Organizational resilience is a social construct that requires the allocation of meaning by members of the organization and their willingness to take risks to help the organization achieve its objectives. A resilient organization is built on a network of meaningful relationships between members of the organization, processes of identification and construction of meaning, and recognition of their ability to transform reality (Schvarstein and Leopold, 2005).

Resilience resides in people; therefore, organizational resilience must consider three levels of analysis: the individual level, the collective or group level, and finally, the organizational level. Individual resilience is fostered by facing challenges in everyday life and, of course, within the organization in the face of the ups and downs of daily work, today mainly due to the challenges arising from the introduction of new technologies -ICTs-, new forms of work – home office-, new forms of organization – virtual organization-, among others, decision-making and motivation.

Group resilience finds fertile ground in social interaction, collaboration, and teamwork; it is a significant capacity that supports the team's recovery from adverse and demanding situations. On the other hand, organizational resilience resides in the social system and derives from behaviors, perspectives, and social interaction to respond to environmental adversities and dynamically have the capacity to reinvent oneself.

In the current context, the approach to organizational resilience leads us to present empirical evidence. Two examples are addressed; 1. The case of a medium-sized Mexican company that underwent a drastic transformation of its activities at its inception and during its life cycle; and 2. The Organizational Resilience Study by Deloitte<sup>1</sup> (Deloitte, 2021) to 2,260 senior public and private sector executives (CXOs) across multiple industries in 21 countries to examine how leaders and their organizations dealt with the new normal as they make tough decisions, explore new ways of operating, and confront fundamental changes in their strategies.

According to the literature review, it can be stated that the principal agent of change and promoter of organizational resilience is the leader. The administrative theory places him as a kind of hero who guides the organization's destiny. Today, this character plays a fundamental

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<sup>1</sup>Building the Resilient Organization. 2021 Deloitte Global Resilience Report.

role in forging organizational resilience aimed at the recovery of organizations and society worldwide.

Deloitte's study (Deloitte, 2020) entitled "The heart of resilient leadership. Responding to COVID-19", acknowledges that resilient leadership distinguishes successful CEOs from those who do not have five fundamental qualities:

1. Empathy with workers, customers, and ecosystems. Care about the financial performance of the company.
2. Prioritize the mission of the company and have the ability to stabilize it to face crises and find opportunities amidst constraints.
3. Rapid decision-making and decisive actions despite incomplete information.
4. Transparency about the current reality including what they do not know, and the ability to design a future that inspires others to persevere.
5. Long-term focus, glimpse new business models and future innovations.

The resilient leader engages in a dynamic process of disruptive events in three situations: a) when the organization faces the current problematic situation and manages its continuity; b) when it recovers, learns, and emerges strengthened; and c) when it thrives on preparing and shaping the new organizational dynamic.

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In the following cases, the leaders are the ones who promote organizational resilience. In a medium-sized Mexican company, the owner is the one in charge, and in the Deloitte research, the managers or CXOs of public and private companies in different countries oversee it. Organizational changes resulting from building organizational resilience are summarized to learn how organizations and their members are coping with adversities and how they have overcome them. The continuity and growth of the Mexican organization and the testimonies of leaders surveyed by Deloitte regarding the actions taken to adapt, resist and recover quickly allow us to assume that organizational resilience is a critical factor in building competitive advantage.

#### *Empirical evidence*

The Mexican company is a medium-sized entity. It has 68 employees and is part of the automotive sector in auto parts. Although, the company's age and size are variables that are categorized as situational or contingency, it shows a greater formalization of behavior and the consolidation of a bureaucratic structure. The owner of the company, who holds the position of CEO, was interviewed to learn about the company and the organizational change it has undergone during its career and to identify whether there is organizational resilience to face adversity and whether this is its source of competitive advantage.

*Company history:* The Company was founded in 1964, dedicated to producing keys for typewriters of the Olympia brand. It was in operation until 1985 under the command of its founders, two Mexicans of German origin who had extensive experience in the design and manufacture of plastic parts. The relevance of the business was based on the possibility of supplying one of the leading machines manufacturers in Mexico; this technological development was effective from the end of the 19th century to the 20th century. It was beneficial for office work and writers as well.

However, this boom waned despite the efforts of its manufacturers to innovate and develop mechanical machines, electromechanical and electronic. Technological advancement in other industrial areas and the creation of personal computers and word processors soon replaced them. In the 1980s, the use of computers increased dramatically, making typewriters only valid for some niche markets, such as some government departments and secretarial schools.

These events and the desire of the German founders to return to their homeland with their families led them to sell the company (Cordera, 2012). The transfer of ownership to a Mexican businessman took place in 1985; since then, the change process has been a constant of unexpected challenges for the owner. The change defined the stages of the company's development: the first one, which corresponds to the foundation from 1964 to 1985, the second one to the formation, which began in 1985 and ended in 1999; and the third one, the strengthening phase, dates back to the year 2000 and continues to the present day.

*Challenges of the 1st. Stage – foundation:* The Company started operations in 1964, targeting its products mainly German customers. By 1985, the German owners sold the company to a Mexican engineer whose last name is Cordera. The transaction was successful for both parties, and payment was made with the resources obtained from the factory's work (Cordera, 2012). The main challenge was to continue with the dynamic that the company was already doing.

*Second Stage: process reengineering.* In March 1985<sup>2</sup>, Cordera's management started operations, mainly by German clients – through highly profitable contracts inherited from the previous management – who, after three years, refused to enter into a commercial relationship with the company. However, to have it for 24 years: 21 with the Germans and three with the Mexicans. The challenge of losing customers and the problem of having poorly trained staff from the interior of the Republic were among the first challenges the company faced; other difficult moments were the devaluations, mainly because the inputs used in the company were quoted in dollars.

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<sup>2</sup> To show the trajectory of the company, the year 1985 is considered as the starting date, this data was provided by the managing director. However, the official information provided by the staff of the Administrative Management indicates that the beginning date is 1984.



The first evidence of resilience in facing the challenges was the change in the social system. Qualified staff was hired to manufacture of plastic parts and renew the client portfolio. Cordera (2012) mentions that “there challenging difficult years because we had to look for new businesses” (ibid.).

The general manager states that the loss of clients is due to the “classical knowledge that foreigners have regarding the schools their children go to as it gives them a certain confidence which is difficult to obtain when you are not in that environment”.

A social fact can be explained in cultural terms: groups have ties based on identity and belonging. Qualities that give meaning to action.

These events led the owner and the workers to show evidence of organizational resilience by engaging in the process of revolutionary change (Jones, 2008); a radical change in production by entering a production sector utterly different from the original one, the implication of acquiring new technology, new knowledge, hiring highly qualified employees, searching for new markets; more demanding customers, a change that affected all levels of the organization, to achieve survival goals.

Cordera stated (2012), “at first it was to survive, and then we realized that the best way to have some security was by exporting. We looked for many ways to sell to exporters, and the one that convinced us the most was the automotive industry. That is why we are so dedicated to serving this industry. It has a significant advantage: they are highly demanding, and so that eliminates 95% of the competitors who make other kinds of plastic products, so we are left with a very select group of competitors that make us have a certain level to be able to go to this market, and since we use a dollar value it has been very beneficial for our survival ”.

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Despite the company's problems since the year, it began operations, its economic value has increased with the reinvestment. The second phase was completed at the end of 1999 and early 2000. Its achievements have led it to a new phase, the strengthening one, which has allowed it to open a subsidiary in the state of Querétaro.

*The challenges of the 3rd stage: a new beginning.* Since 2000, the company has been directing its commercial strategy towards the automotive industry, which required it to exhibit a certification issued by a recognized certification body. Organizational resilience is evident at this stage when facing the demands of the clients. In this case, the resilience triggers forecasting and planning processes to change their old quality system to the ISO 9001:2008 Quality Management System because it did not meet all the requirements.

This process took about six years; in 2006, the company obtained the quality certification to enter fully into the auto parts industry, now has more than 60% of its sales in that sector. The director's commitment upon certification is focused on continuously improving the company:

*“Once we decided... to have the system certified... we want and... we wanted it to work (,) our main goal was to make the system work in such a way that we would get benefits and not just a cover letter for automotive projects, and it takes a bit of work to change the culture and make people do what they have to do, but somehow the elements of the system have made us have a better company, nowadays we are with the registration along with the internal audits and audits by the certifying body that guarantees the fulfillment of the requirements and for me one of the most important things that we have today: our commitment to being continuously improving, so that we are always a better company” (Cordera, 2012).*

Facing challenges and adapting to a changing environment is evidence that the company is a resilient organization. The foray into the automotive sector began with a German company dedicated to auto parts; the commitment to it was translated into confidence to consider it as a supplier, and the relationship with the company became a presentation card for other companies in the sector, who know (that) . . . company does not (quickly) give projects to new suppliers” (Cordera, 2012) and know the standards and demands imposed by the company. The enrollment into the automotive industry forced the company to acquire state-of-the-art technology to meet the demand of its primary customer.

Not everything has been hunky-dory for the company because despite meeting quality standards and having world-class clients, contextual conditions have affected its stability and led it to reformulate its markets. Especially the devaluations forced it to look for other types of customers; in 1998, it could supply MABE with knobs for the stoves due to a supply problem. Today it is one of its main customers in the household appliance industry.

In 2008-2009, along with the decline in automotive demand, the company was again exposed to severe risks, which were resolved by diversifying its risk into various markets. As a result of this strategic planning, it now has 60% of its sales in the auto parts industry, 30% in household appliances and the rest in cosmetics and other products.

The CEO points out that one of his strategies for directing his efforts is set out in the Business Plan, which is reviewed annually and covers a medium-term period. It also assesses their strengths and weaknesses. One of the achievements of using the business plan is the entry into the cosmetics industry, which represents the company “. . . Fortunately . . . a fairly stable volume because many things' women will stop buying but cosmetics.” There is one sector in which the company aspires to enter: the medical products market.

The company has strengthened and close relationships with its main customers, which has allowed it to grow. Since 2012, it has had its headquarters in Mexico City (formerly known as Federal District) with 68 employees and 70 in a subsidiary in Queretaro.

The Mexican organization, which produces auto parts, is a resilient entity. Although it has faced various challenges and organizational changes, it has emerged stronger from these events. At first, it made a revolutionary change by voluntarily placing itself in a highly demanding production chain. Through continuous learning and controlled exposure to new challenges, it has managed to build organizational resilience as a competitive advantage.

*Deloitte Resilience Study:* An organization does not know if it is resilient until a threatening event puts it to the test. Under this premise and intending to show how resilience represents a competitive advantage for some organizations, the following are the most relevant results of the Global Study of Resilience in an Era of Disruption, conducted by Deloitte in 2020 (Deloitte, 2021).

The study aimed was to find out how organizational leaders perceive the factors or traits that originate resilient organizations and how their companies are coping with the new normal, the challenges faced by new ways of operating, and the changes in their strategies. The study reports the perceptions of 2,260 leaders (CXO) surveyed, and top-level executives, C-suite executives<sup>3</sup>. These executives were interviewed. The informants are in 21 countries and work in the public and private sectors.

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The results of the study reveal that organizations that overcome unexpected challenges are resilient; they have five key attributes or traits:

- a) They are prepared: (successful) leaders are involved in planning for short- and long-term eventualities. More than 85% of managers whose organizations carefully balance their approach to short- and long-term priorities felt they had taken another (pivoted) momentum to adapt to the events of 2020. However, just under half of the organizations that did not take stock felt the same way.
- b) They are adaptable: Leaders recognize the value of having versatile employees – especially after a year like 2020. The most critical feature executives require of the workforce for the future of organizations is flexibility/adaptability. Flexible employees who are willing to fill any position within the work and adaptable to the organization's strategies are required.

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<sup>3</sup> C-suites include the following executive positions: chief executive officer (CEO), chief financial officer (CFO), chief executive operating officer (CEO), chief operating officer (COO), and chief information officer (CIO). They work together to ensure that companies stand firm to deliver on their plans and policies.

- c) Collaborative: Leaders emphasized the importance of collaboration within their organizations; this accelerated decision-making, decreased risk, and led to innovation. Promoting organizational collaboration was one of the main strategic actions that executives took before and during 2020.
- d) Reliable: Executives understand the challenge of building trust. More than a third of respondents were not sure that their organizations had done an excellent good job building trust between leaders and employees. Successful companies focus their strategy on improving communication and transparency with key stakeholders and exercising empathetic leadership.
- e) Accountability: Most executives acknowledge that the corporate world has a great responsibility beyond the bottom line. Eighty-seven percent of respondents mentioned that they had balanced the needs of their stakeholders, so their organizations could quickly adapt and turn around and respond to disruptive events.

These five attributes of resilient organizations enable them to recover from unexpected challenges by promoting agile and adaptive cultures and implementing and effectively using advanced technology. Deloitte mentions that the five attributes are not immutable, nor do they occur spontaneously. Therefore, they depend on the desire, effort, investment, and action of the organization members to cultivate and maintain them. These are elements of a resilient culture built through social interaction, which requires the assignment of meaning.

The study results suggest that organizations may deliberately build and adopt these attributes to build a resilient mindset and culture that will position them better and overcome adversity. Moreover, while this is possible, the survey results show the importance of how organizations prepare for contingencies. Most of the firms that participated in the study had already made investments in labor and technology, skills that enhanced resilience to outperform competition before and during the COVID-19 crisis.

The Deloitte Resilience Report (2021) found that organizations best prepared to deal with disruptions such as increased competition and technology turmoil in Industry 4. 0, in addition to the pandemic, undertook the following critical strategic actions:

- a. a. Implementation of processes that made it easier for the organization to place workers in different roles depending on the need or interests of the workers.
- b. Establishment of training or job rotation programs to enable workers to be retrained.
- c. Increased use of advanced technology to facilitate the creation of new business models and take advantage of market opportunities.
- d. Diversify revenue streams through the development of new products and services.
- e. Provide employees with flexible work options to support work-life balance.
- f. Invest in new technologies and systems that support remote working.
- g. Diversify the supply chain through multiple suppliers/partners.

Resilience means thinking ahead and doing what is needed to respond to and recover from a crisis. The leaders of the organizations that managed to overcome the catastrophic events of 2020 rely on the resilience of their organizations, and their own, as they bear the responsibility to motivate their members towards a resilient culture.

Other findings of the study reveal the concern of managers surveyed about the events of 2020. For example, 60% believe that large-scale disruptions are likely to occur. They say the most serious is the climate crisis of similar or greater magnitude compared to the COVID-19 pandemic.

Disruptive events/social issues which managers anticipate will be most critical for business in the next decade are Climate Change (47%) and Environmental Sustainability. Health care and disease prevention (42%). Education gap; skills and training (39%). Income inequality and wealth distribution (37%). Inequality, racism, sexism (31%). Problems in supply chains (30%). Resource scarcity; oil, gas, water (26%). Food insecurity; hunger (19 percent). Immigration and displaced populations (18 percent) and Sexual problems (8 percent) (Deloitte, 2021, p. 20).

## CONCLUSIONS

Resilience, although inherent in the human being and is formed when the individual faces adversities, today, in the economic sphere, is a new and critical issue because the leaders of the organizations around the world hope to face the future more dramatically contingencies than those currently being experienced. Unfortunately, few leaders knew how resilient their organizations were until the time when they had to respond to the adversities of the pandemic.

The theoretical review provided the opportunity to answer the initial research question: What is organizational resilience? Organizational resilience is a dynamic organizational process that challenges individual and collective resilience and directs participants towards positive and innovative adaptation to recover from adverse and unexpected situations in changing and uncertain contexts.

With the particularities in the trajectory of the case of the Mexican company and the facts discovered by Deloitte in companies that faced adversity in 2020, the question is answered: Is organizational resilience a source of competitive advantage for the organization? As can be seen, the Mexican organization presented is resilient, and through resilience, it has managed to resist and overcome the uncertainty of challenges on its path. The loss of the market and the threat of losing its investment, far from shocking the leader and the company, led them to promote radical organizational changes; the company renewed itself by inventing

a new future, learned from these experiences, and appropriated the accumulated knowledge to grow and consolidate – to be competitive – in a productive sector dominated by large global companies.

An answer to the question “How is organizational resilience built?” In the case of the Mexican company and the resilience study conducted by Deloitte, resilience is built through social interaction and the sense that the participants attribute to it, the desire and willingness to take risks to forge a resilient culture. Resilient companies need to cultivate five attributes and prepare to build resilience, as the Deloitte companies did. It managed to overcome the global health crisis and improve its strategic position in the market.

Definitely, and according to new lines of research that will incorporate the vision of other organization members, resilience is a source of competitive advantage that enables the achievement of positive results by the organizations that cultivate and implement it. In conclusion, a resilient company results from the decisions of a resilient leader in a resilient organizational cultural environment.

## REFERENCES

- American Psychological Association. (2011). *Resilience*. American Psychological Association. Link: <https://www.apa.org/topics/resilience/camino>
- Bégin, L., & Chabaud, D. (2010). La résilience des organisations. Le cas d’une entreprise familiale. *Revue française de gestion*, (1), 127-142
- Chen, R., Xie, Y., & Liu, Y. (2021). Defining, conceptualizing, and Measuring Organizational Resilience: A Multiple Case Study. *Sustainability*, 13(5), 1-25. <https://doi.org/10.3390/su13052517>
- Cordera. (2012, July 15). *Interview: Resilience and Organizational Change*. (I. Guillén, Interviewer) Mexico City.
- Cossío, P., Ortega, A., & Padrón, A. (2017). Importance of organizational resilience in health personnel. In Ortega, A. Padrón, A. Nieto, B. Cordelier, L. Ortiz, L. Gutiérrez, . . . P. Cossío, *New Challenges for Health Organizations in Mexico* (pp. 31-46). Mexico: Pearson.
- Daft, R. (2011). *Teoría y diseño organizacional*. México: Cengage Learning.

- Deloitte. (2020). *The heart of resilient leadership. Responding to COVID-19*. Deloitte.
- Deloitte. (2021). *Building the Resilient Organization. 2021 Deloitte Global Resilience Report*. Deloitte.
- Duchek, S. (2020). Organizational resilience: a capability-based conceptualization. *Business Research*, 13(1), 215-246. <https://doi.org/10.1007/s40685-019-0085-7>
- Durán, C. (2021, May 11). Resiliencia como ventaja competitiva. *FORBES*. Link: <https://www.forbes.com.mx/la-resiliencia-como-ventaja-competitiva/>
- EFE. (2019, May 30). GM cumple 10 años de la quiebra y reestructuración que sanearon empresa. *EFE*. Link: <https://www.efe.com/efe/usa/economia/gm-cumple-10-anos-de-la-quiebra-y-reestructuracion-que-sanearon-empresa/50000106-3989082>
- Fundación Factor Humá.org. (2010). *Resiliencia*. Fundación Factor Humá. Link: [https://factorhuma.org/attachments\\_secure/article/8264/resiliencia\\_cast.pdf](https://factorhuma.org/attachments_secure/article/8264/resiliencia_cast.pdf).
- Gámez, A. (2019, August 21). *Entérate porqué quebró Mexicana de Aviación*. Mexico: El Universal.
- García, M., & Forero, C. (2018). The importance of resilience in organizational change. *Institutional Repository Catholic University of Colombia – RIUCaC*, 1, 41-54.
- González, T., & Córdova, K. (2020). Dynamic capability and resources for resilience in artisan ceramic companies in Jalisco, Mexico. *Cuadernos Latinoamericanos de Administración*, 16(30), 1-19.
- Hamel, G., & Valikangas, L. (2003). En busca de la resiliencia. *Harvard Business Review*, 81(9), 40-52.
- Hernández, R., Fernández, C., & Baptista, L. (2006). *Research Methodology*. Mexico: McGraw-Hill.
- Holling, C. (1973). Resilience and stability of ecological systems. *Annual review of ecology and systematics*, 4(1), 1-23.
- Hussein, A., & Olivera, M. (2021). Business Analytics Capabilities for Organisational Resilience. In *Business Intelligence and Big Data for Innovative and Sustainable Development of Organizations*, 2328-2335.

- INEGI. (2020). *INEGI presents results of the second edition of covid-i and the study on business demography 2020*. Mexico: INEGI. Link: [https://www.inegi.org.mx/contenidos/saladeprensa/boletines/2020/OtrTemEcon/ECOVID-IE\\_DEMOGNEG.Pdf](https://www.inegi.org.mx/contenidos/saladeprensa/boletines/2020/OtrTemEcon/ECOVID-IE_DEMOGNEG.Pdf)
- INEGI. (2021). *Second Results of the Study on the Demography of Business 2020*. Mexico: INEGI. Link: <https://www.inegi.org.mx/contenidos/saladeprensa/boletines/2021/OtrTemEcon/EDN2020.Pdf>
- International Trade Centre, (2020). *SME Competitiveness Outlook 2020: COVID-19: The Great Lockdown and its Impact on Small Business*. Geneva, Switzerland: ITC. Link: [https://www.intracen.org/uploadedFiles/intracenorg/Content/Publications/ITCSME\\_CO2020.pdf](https://www.intracen.org/uploadedFiles/intracenorg/Content/Publications/ITCSME_CO2020.pdf)
- ISO (2017). *Security and resilience. ISO 22316:2017. Technical Committee ISO/TC 292, International Organization for Standardization* Link: <https://www.iso.org/obp/ui/#iso:std:iso:22316:ed-1:v1:en>
- Jones, G. (2008). *Organizational Theory. Design and Change in Organizations*. Mexico: Pearson Prentice Hall.
- 80 Kelman, S. (2021). COVID, black swans and gray rhinos FCW. Link: <https://fcw.com/blogs/lectern/2021/01/kelman-covid-black-swans-gray-rhinos.aspx?m=1>
- Kotler, P., & Armstrong, G. (2013). *Fundamentals of Marketing*. Mexico: Pearson.
- Lamb, C., Hair, J., & Mc Daniel, C. (2011). *Marketing*. Mexico: Cengage Learning.
- Luthar, S. S., Cicchetti, D., & Becker, B. (2000). Research on resilience: Response to commentaries. *Child development*, 71(3), 573-575.
- Meneghel, I., Salanova, M., & Martínez, M. (2013). The Path of Organizational Resilience – A theoretical review. *Aloma. Review of Psychology*, 2 (31), 13-24.
- Meza, L. (2021, May 4). Una organización resiliente tiene cinco características. *FORBES*. Link: <https://www.forbes.com.mx/red-forbes-una-organizacion-resiliente-tiene-cinco-caracteristicas/>
- NEUBOX. (2021). 5 Grandes empresas que quebraron en México por la pandemia. *NEUBOX*. <https://neubox.com/blog/5-grandes-empresas-que-quebraron-en-mexico-por-la-pandemia/>



- Quiñónez, R., & Prado, M. (2017). Organizational resilience: ideas for debate in the Ecuadorian context. *Scientific Journal Dominio de las Ciencias*, 3, 488-504.
- Rogel, E., & Uriquizo, J. (2019). Theoretical approach to resilience in financial organizations. *Journal of Social Sciences. Zulya University*, 25 (2), 112-119.
- Salgado, C. (2012). La resiliencia y su empleo en las organizaciones. *Revista Gestión y estrategia*, (41), 29-40.
- Sanchis, R., & Poler, R. (2014). La Resiliencia Empresarial como ventaja competitiva. In *Creando sinergias: II Congreso I+ D+ i Campus de Alcoi*, Alicante, November 11 (pp. 25-28). Compobell, SL.
- Sawalha, I. (2015). Managing adversity: understanding some dimensions of organizational resilience. *Management Research Review*, 38(4), 346-366.
- Schvarstein, L., & Leopold, L. (2005). *Trabajo y subjetividad. Entre lo existente y lo necesario*. Buenos Aires: Paidós.
- Shein, E. (1997). *Organizational Culture and Leadership*. San Francisco California: Jossey-Bass.
- Téllez, C. (2020). The other tragedy: A pandemic shuts down 1 million MIPYMES in Mexico. Mexico: *El Financiero*.
- Yin, R. (2003). *Case Study Research*. Thousand Oaks, CA: SAGE.

