The Development of Organizational Resilience in the Face of Extreme Events

by

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COMMITTEE APPROVAL

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Abstract

With the research I conducted, I addressed a sustainability problem: organizational disaster resilience. Catastrophic events such as earthquakes affect millions of people worldwide, and disasters will continue to occur. My research was oriented to answer the following question: *how can business leaders develop resilience in their organizations in the face of extreme events?* I studied the phenomenon from the perspective of the Mexican experience with earthquakes, particularly in small and medium enterprises (SMEs) after the September 19, 2017 earthquake in Mexico City. Business leaders can make a difference due to the influence they have as employers and their access to resources. Existing resilience definitions and conceptual frameworks were compared to empirical research to support the development of organizational disaster resilience. The findings of my research reflect that organizational resilience can be developed through four main dimensions: agents, enablers, place, and chronology. The dimensions are succinctly represented in the proposed model (see Appendix C), as well as the outcomes to be expected from the agents, enablers, and the place in which resilience is developed and evolves in a non-linear chronological continuum. This last feature considers the anticipation, coping, and adaptation phases from a disaster described previously in the literature (Duchek, 2020). My research provided novelty in the incorporation of some terms associated with the mentioned organizational resilience dimensions, and in presenting the transdisciplinary perspective from individuals who are located in an emerging economy. The incorporated denominations in the description of resilience agents not found previously in the literature include: the concept of neighborship, the need to address the grieving process in the workplace, the consideration of

spirituality as part of the integral perception of employees, and the enhancement of social capital through solidarity and intersectoral partnerships. Similarly, the description of agent leadership provided some new elements to consider, regarding the responsibility leaders have to act humanely, fairly, and ethically to develop resilient organizations. Furthermore, the enablers dimension in the model incorporated the importance of natural, technological and intellectual capitals that seem to be fundamental for the survival and adaptation of organizations to crises and/or extreme events. Additionally, the incorporation of intergenerational education was introduced, as organizations can congregate at the moment individuals from four generations. The preservation of the memory and experience of the older generations to face catastrophes may be valuable when addressing future catastrophes. Also, the concept of prospective transformation was included as part of the resilience enablers to underline the importance of considering the future of the organization while dealing with an emergent crisis. In addition, the ecological view concerning resilience included the concept of place *(habitat).* The geography of resilience beyond the reference to buildings and equipment (McManus, Seville, Vargo & Brundson, 2008) has not been previously addressed in this way and is referred to the place where leadership occurs (Jackson & Parry, 2018). The importance of adaptive architecture and flexibility in work schemes requires a new lens to transform the status quo, and reduce the tension that SMEs may face in a disaster environment that can be at the expense of entrepreneurs when there is a lack of external support. Finally, the perception of catastrophes as external forces that alter the “normal” organizational life (Lavell & Maskrey, 2014), may be transformed to learn to live or *convīvere,* as the Latin origin expresses in relation to living with someone or something (Wordsense Dictionary, n.d.)- and not only coexist - with recurrent crises that organizations encounter, and especially SME’s experience practically on a daily basis. My dissertation portfolio included one peer-reviewed journal article, a case study with a teaching note to be used in business schools to discuss how resilience can be developed in organizations, and a second article published in Harvard Business Review (HBR), directed to a practitioners' audience. The results reflect a comparative analysis I conducted with business leaders to document lessons learned and understand resilience development mechanisms that supported 10 organizations during their recovery from the 19S earthquake. My contributions to the field are both theoretical and empirical. The knowledge co-produced with the research participants is summarized in an organizational resilience development model and expands the literature in the emerging resilience field, and especially in the SMEs body of work in relation to disaster management. My study may lead the way to continue exploring the phenomenon in organizations, adding this discussion to the individual and societal aspects referred to the resilience construct previously studied. Also, through the elective portfolio components, the HBR article and the case study for business schools, my research intends to cover a blind spot in the priorities of practitioners, and more specifically leaders, who may not have previously considered the importance of developing resilience in their organizations in the face of contingencies.

Dissertation by Portfolio Synthesis

While I was preparing my application for the doctoral program, I needed to start exploring a topic for my research. Before the doctoral program started, on September 19, 2017, there was an intense earthquake that affected Mexico City where I live, and the event triggered my interest in studying this topic. Coincidentally, this earthquake occurred the same day 32 years after a devastating earthquake that also affected Mexico City in 1985, when I was 11 years old. I remember going on that occasion with my mother to visit the victims' camps, and I wished that I was able to do more than distribute food to the affected families. These earthquakes altered the existence of thousands of businesses and citizens. Considering that more earthquakes are anticipated, I saw the need to proactively support the preparation of business leaders and their organizations for future events. Also, when considering the number of people affected globally by various types of crises and natural disasters, it adds up to millions every year, as has been the case with the COVID-19 pandemic. Disruptive events will continue to happen and organizations require continuous adaptation to live with crises.

Statement of the Problem: Research Questions

The statement of the problem that my research addressed was oriented to answer the following research question: *How can business leaders develop resilience in their organizations in the face of extreme events?* The initial research question had two changes, the first one reflecting the reference to resilience *in the face of* extreme events, instead of *after* extreme events. Derived from the literature review, I understood resilience is not developed after an adverse event, but also before and during the crisis (Duchek, 2020). The second change to the research question considered the scope of the type of event in which organizational resilience occurs. Originally, the question only considered earthquakes but after conducting the analysis of the data, and with the impact of the current pandemic, the need to expand the question to other types of extreme events became clear. The set of subquestions derived from the main research question were as follows: a) what does a resilient organization look like?; b) what gives life to an organization that faces a grieving process after experiencing human casualties and a significant loss of assets in an extreme event?; c) how were leaders able to build resilience in their organizations in the face of an extreme event?; d) what strategies and support networks are needed for business leaders to develop resilience in their organizations in the face of an extreme event? The answers to the questions were documented in the journal article, and are summarized as follows:

a) What does a resilient organization look like?

Considering the four dimensions in the organizational resilience development model (see Appendix C), a resilient organization may be able to work with the agents, enablers, place, and chronology, to activate each of the components consciously. For example, about the agents, a resilient organization would evaluate the current status and work on the individual and community resilience attributes described by Abramson et al. (2014). A resilient organization would also enforce a distributed leadership structure and permeate a culture of humane leadership (Dimitrov, 2015). Similarly, a resilient organization would identify its strengths and weaknesses regarding the resilience enablers, and the place as described in the model. From a systemic perspective, the organization would address the chronology concerning crises, paying attention to the anticipation, coping, and adaptation stages (Duchek, 2020).

b) ***What gives life to an organization that faces a grieving process after experiencing human casualties and a significant loss of assets in an extreme event?***

In a resilient organization, the agents who act responsibly are what give life to an organization in an extreme event. During the data collection phase, in one of the focus groups, a business leader mentioned that "it is comforting to look back and notice that the decisions you took were very good and people noticed it. Some employees were *wearing the T-shirt* (demonstrating engagement and sense of ownership) for our company, and others who didn't". In other words, this research question may be reformulated as 'who' instead of 'what' gives life to an organization under these circumstances.

Furthermore, another element consistently mentioned by research participants was the importance of addressing the grieving process and caring for the employees' wellbeing, especially in the coping and recovery stages after the event, in this case, the earthquake.

c) ***How were leaders able to build resilience in their organizations in the face of an extreme event?***

This research question is closely related to the primary research question of the present study oriented to understanding how resilience is developed in organizations in the face of an extreme event. The answer points to the six resilience enablers considered in the organizational resilience development model (see Appendix C): a) crisis management prior knowledge and experience; b) risk awareness and response capacity; c) operational continuity; c) prospective disaster management; d) having an adaptive organization; e) the process of reflection and learning from previous occurrences.

Duchek (2020) described the importance of the prior knowledge base for organizations to become more resilient. Other vital components are the perspective the organization has about risk and its response capacity and what Lavell & Maskrey acknowledge as a disaster management view that becomes "mainstream and effective" (Lavell & Maskrey, 2014, p. 267). Furthermore, the concept of operational continuity is derived from the reflections of a business leader who expressed in one of the focus groups that right after being affected by the earthquake "you never had time to think, but you continue to execute, you are worried and need to solve [issues]…". In this sense, other research participants mentioned as well the importance of the continuity of the operations after establishing a new office in a couple of days, and using the words of one of them, "to move forward, that is the most important thing because you are already operating". When the concept of operational continuity is compared with previous work, there is a vast field around business continuity for practitioners that has been documented extensively, for example, in the ISO norms 22301:2019 (2019) and the ISO 22316:2017 (2017). However, there are at least two considerations in the application of these type of frameworks. One of the aspects to take into account is that these norms are supported primarily in a Western viewpoint from developed economies and require to be customized to the political reality, geographical, demographic, and socio-cultural aspects from each country, and to emerging economies more specifically. Furthermore, for some SME organizations with limited resources, access to this type of implementation may be out of reach, and at a minimum, leaders can focus on the operational continuity.

The reference in the model presented in the paper to the adaptive organization concept considers some of the resilience attributes described by Abramson et al. (2014), and the resource availability that Duchek (2020) underlined when she delineated the anticipation stage to build organizational resilience.

Ultimately, the remark about reflection and learning considered in the enablers' components in the model, is associated with Gray and Jones (2016) work, which was focused on the organizational learning process for SMEs towards business resilience and sustainability, and the reference to continuous developmental opportunities as part of the Human Resources system components for developing a capacity for resilience (Lengnick-Hall, Beck & Lengnick-Hall, 2011). For some research participants, the research process that allowed them to have a moment to reflect on what worked after the 19S was highly appreciated. As one participant expressed, "we have not previously reflected on what worked well to replicate it, I believe that a resilient organization learns… the formalization of lessons learned helps to generate this type of culture…".

In this way, the need to allocate time and space to reflect may be of value for organizations to manage contingencies better. In this sense, the application of the appreciative inquiry principles (Cooperider, 2005) facilitated the discussion about what worked after the earthquake, instead of focusing on the gaps.

*d) **What strategies and support networks are needed for business leaders to develop resilience in their organizations in the face of an extreme event?***

Considering the elements included in the organizational resilience development model (see Appendix C), business leaders could benefit from the understanding of resilience as a process, as Duchek (2020) defined it. From that viewpoint, leaders may introduce specific actions in their business strategies to develop elements such as social, economic, human, and political capitals (Abramson, 2014) that can be supplemented with natural, technological, and intellectual capitals. As one of the interviewees mentioned, the strategic levers that include the construction of networks inside and outside the organization, are developed before a crisis emerges, and become active in the coping phase when the crisis arises. In her words, beyond the donations and offers of various spaces to continue operating after their building collapsed, different people helped them, including their competitors “the offices that we are currently using were offered by a company that was our competitor…many of my competitors offered resources to support our clients while we recovered…”. In sum, business leaders need to consciously develop their networks to be ready for any type of contingency, being one of the critical relationships the one with their neighbors.

Theoretical framework

The complexity of the phenomenon required the consultation of various disciplines rather than one main specialized field. In consequence, the theoretical framework that served the purpose of this research included four fields of knowledge: resilience, organizational resilience, disaster management, and crisis management. These fields intersected in the organization, as this was the main focus of the research.

The study of human resilience started at the end of the twentieth century (Werner & Smith, 2001), and the application of the resilience concept to social systems can be attributed to C. S. Holling (2001). Some of the existing models describe the construct and the process associated to organizational resilience (McManus, Seville, Vargo & Brundsdon, 2008; Duchek, 2020), while other scholars focus on the generation of tools to measure and compare an organizations’ resilience (Lee, Vargo, Seville, 2013).

Also, as I explored the topic, I addressed the role of the leader in reference to resilience, and previous work on strategic human resource management and the development of organizational resilience was fundamental (Lengnick-Hall, Beck & Lengnick-Hall, 2011), as well as its relation with crisis management (Wang, Hutchins & Garavan, 2009) and the possibility for organizations to grow after a traumatic experience (Nava, Matsuno & Kohlbacher, 2020). Then, tangentially I looked for literature related to the type of organizations studied: SMEs, in emerging markets. The result from the literature review on SMEs, resilience and disasters, helped me to understand the level of complexity of the phenomenon and the difficulty to find previous models for SMEs to face natural disasters (Alesch, Holly, Mittler & Nagy, 2001; Gray & Jones, 2016). Also, I was able to understand that most of these studies have been conducted in developed economies that do not consider the governmental voids to respond in a disaster situation that increase the vulnerability of micro, small, and medium businesses.

In sum, the research conducted was transdisciplinary in nature, and therefore, several disciplines were consulted in the literature review, with an active involvement of practitioners in the co-production of knowledge, transcending the academic boundaries (Wickson, Carew, & Russell, 2006).

Methodology and Methods

The methodology that I selected for this research was the case study (Yin, 2018), supported by the principles of appreciative inquiry (Cooperrider, 2005) to understand what worked and some of the best practices the organizations studied took in terms of developing resilience. The methods associated with the case study methodology included interviews, focus groups, archival records, documentation, and physical artifacts (Yin, 2018). The data collection sources and the list of tools to process each component were summarized in a list (see Appendix A).

The research was conducted in three stages in which data collection, records keeping, and the analysis methods varied according to each source of information. The outcomes of each stage can be observed in the figure (see Fig. 1).

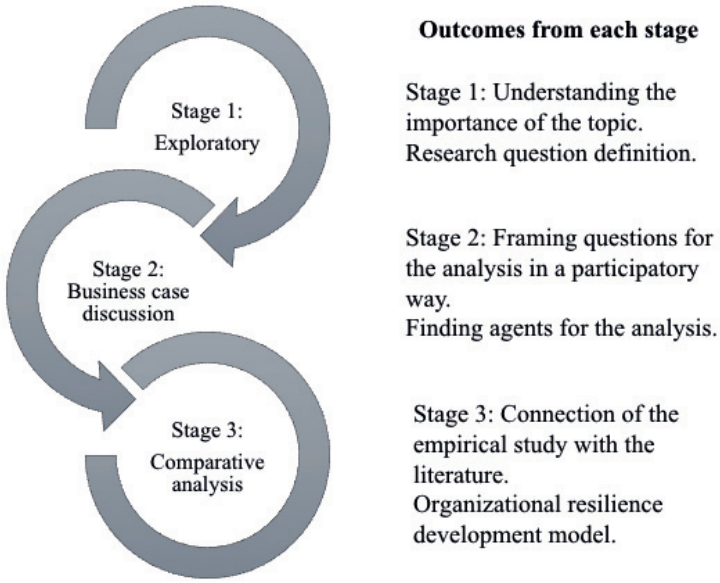

Figure 1. Data collection sources and outcomes

The first stage involved the exploration of the area in which the majority of office buildings were damaged in Mexico City. I captured the environment in six site visits by observing and taking a total of 769 photographs of the urban scene to compare the recovery process over time. The second stage of the research involved a series of interviews and a focus group with employees to document a case study from a family business affected severely by the earthquake. The teaching case was also tested and discussed with more than one thousand business leaders, and from this universe I was able to find a subset of 10 volunteers who participated in two focus groups to analyze some of the conclusions of the case discussions, and who became my research participants. The third stage involved a comparative analysis of the documented case with 10 businesses affected to understand how other organizations recovered from the earthquake damage over time. In total, I conducted 13 semi-structured interviews and three focus groups (see Appendix A).

One of the challenges that the research presented involved the collection and processing of a significant amount of information from a variety of sources. I mitigated this challenge by establishing a systemic mechanism to classify the information manually at first by using cards, then adding the categories to an excel spreadsheet and comparing them with the NVivo records.

The familiarity with the information was critical to move forward. Also, as valuable as the process was, the involvement of practitioners in the reflection and generation of information presented some challenges, as research participants did not always reach a consensual conclusion; there were heated discussions, and I needed to moderate some of the dialogues as a result. I addressed these situations by listening to every participant and respecting their perspectives and requests. For example, in one focus group a participant wanted to show a video that the others considered to be too sensitive. I intervened to ask the participant to stop the video and show it to me in an individual interview, honoring the need of the group to avoid being exposed to potentially disturbing images of rescue activities that took place after the earthquake.

All the interviews and focus groups were transcribed verbatim, and the data analysis started as a manual process of open coding, classifying the statements into first order codes (Giogia, Corley and Hamilton, 2013) Then, after working with the codes in NVivo and supporting the data in an excel spreadsheet, emerging categories were compared iteratively to the literature, to build the conceptual model following the principles of grounded theory applied to cases blends to develop theory (Eisenhardt, Graebner and Sonenshein, 2016).

Research Quality Considerations

The methodology and methods were aligned to five research quality criteria I considered for my research: relevance, credibility, legitimacy, effectiveness, and reflexivity. The theoretical foundations to these research quality criteria and the nuances applied to this transdisciplinary research were considered from the research design to the data collection, the analysis of information, and the process to present the results.

Due the nature of my work, it is significant to describe the rationale behind the consideration of the mentioned criteria. In the past, the terminology of validity and reliability used for quantitative research was adapted for qualitative inquiry. Guba and Lincoln (1981) developed four categories to establish trustworthiness in qualitative research that included credibility, transferability, dependability, and confirmability. The framework has been reviewed by some scholars and has evolved to standardize knowledge production (Denzin & Lincoln, 2000). Traditional academic criteria to assess research quality were no longer sufficient, and generation of knowledge is now oriented toward providing real-world solutions for global grand challenges, emphasizing the context and social engagement. As the boundaries between disciplines are surpassed and the involvement of stakeholders in complex systems is continuous, "there is a need to consider different principles and criteria to define and evaluate research quality in a transdisciplinary research (TDR) context" (Belcher, Rasmussen, Kemshaw, & Zornes, 2016, p. 1).

As Hesse-Biver and Leavy (2008) asserted, the criteria traditionally used to judge the usefulness of research (validity and reliability) do not consider how knowledge is conceived in terms of who creates it, what can be counted as knowledge, its mobilization, or the achievement of authenticity and trustworthiness. In transdisciplinary research, the actors are critical, as their contribution is in knowledge coproduction and must be accounted for.

With the antecedents mentioned, the principles I considered in my research design were oriented toward initiating change, considering relevance, credibility, legitimacy, and effectiveness (Belcher et al., 2016, pp. 8–12). Even though the terms in Belcher et al.'s (2016) model are different, the principles are similar to the traditional ones (as confirmability and dependability are related to legitimacy), credibility is maintained, and transferability is also closely connected to the legitimacy of the study. The criteria that provided a different approach included relevance and effectiveness (Shuttenberg & Guth, 2015; Belcher et al., 2016), as these criteria were oriented toward saliency, problem-solving, and change, not considered in the original framework from Guba and Lincoln (1981). Therefore, for my research, I took into account the framework suggested by Belcher et al. (2016), applying the criteria to develop relevant, credible, legitimate, and effective research. The topic's relevance is connected to the impact of catastrophes that affect globally millions of businesses every year.

Moreover, I developed a credible research through a rigorous process in which I followed the 2014 Tri-Council ethical guidelines, including the documentation of informed consent for participants who were fully aware of the implications of their participation, and I gave them information about the research progress continuously. Also, the treatment to all the data collected was careful, and I maintained a chain of evidence regarding each step of the research.

In addition, I made sure the research was legitimate, while fairly representing the actors' voice, and ensuring their participation was volunteer; I used different sources of information to cross-check the contextual evidence; I considered different viewpoints to compare and contrast their opinions; I worked consciously on generating an inclusive environment; and I listened to and acknowledged the research participants' needs. Moreover, I addressed effectiveness through my research, as the research questions were focused on solving a complex problem (e.g., resilience to earthquakes in businesses), and they were oriented toward generating change to reduce the recovery time for impacted organizations and for future occurrences and other types of catastrophes.

After reviewing the four criteria in Belcher et al.'s (2016) proposal, I concluded there was a missing component. The proposal from Richardson and St. Pierre (2005) concerning creative analytical process and the four proposed criteria (e.g., substantive contribution, aesthetic merit, reflexivity, and impact) resonated with my intention to instill change; therefore, I added the reflexivity component (Richardson & St. Pierre, 2005, p. 964) for my research. I considered originally that my research would apply a creative process to cocreate a more promising future with business leaders and an adapted reality and that process can be instilled through the teaching case discussion in the classroom. The recommendation would be to promote the use of artifacts (for example pictures) in the discussion, to recall memories from other crises, and how those were managed.

The application of the concepts of relevance, credibility, and legitimacy in my research can be summed up as the importance of the topic, the accuracy of the information generated, and fairness (Schuttenberg & Guth, 2015). Similarly, Belcher et al. (2016) defined the four main principles I mentioned, stating that relevance is referred to as social significance and applicability; credibility is related to scientific rigor, integration, and reflexivity; legitimacy incorporates inclusion and fair representation of stakeholder interests; and effectiveness is a criterion that assesses "actual or potential contributions to problem-solving and social change" (p. 1).

In sum, I considered five main attributes that were in line with the purpose of my study: relevance, credibility, legitimacy, and effectiveness, including reflexivity as another criterion that supported the awareness generation in the business leaders who participated to provoke change. I adhered to the ethical principles from the 2nd edition of the Canadian Institutes of Health Research, the Natural Sciences and Engineering Research Council of Canada, and the Social Sciences and Humanities Research Council of Canada's (2014) "Tri-Council Policy Statement," which supports the robustness and rigor of qualitative research and that respects the human rights of the individuals participating in my research.

After finishing the research process, I see the need to add something to the discussion on qualitative research and quality criteria. I did not find in the literature how to code for silence and tears, movement, pauses, or sighs, and these were some of the most important gestures and moments in the conversations I had with the research participants. I consider it is necessary that emotional displays are also treated as valuable, legitimate data.

I would also like to address one aspect related to the possibility to transfer the learnings from my study to other organizations. It is necessary to clarify that the findings only represent the universe of the ten organizations in the comparative analysis, and the application of the conceptual model on organizational resilience would still need to be tested in other organizations, in different contexts, and with organizations of different size. On the other hand, the results of my research were translated into a theoretical contribution that surpassed my original intention just to bridge the existing theory with an applied study. Giogia, Corley and Hamilton (2013) also inquired about the possibility to generalize from case studies, their answer being that "if the case generates concepts or principles with obvious relevance to some other domain" it is possible (p. 24).

Portfolio Format

The dissertation by portfolio format included three pieces: an article for a practitioners' audience, a case study to be used in business schools, and an academic article for a journal. The research design in which these three elements were developed followed the process suggested in one of the main inductive research rigor recommendations for qualitative studies (Gioia, Corley, and Hamilton, 2013). Other authors support the case study methodology as a systematic approach to collect, analyze and present inductive research, especially to address grand challenges and complex problems (Eisenhardt, Graebner and Sonenshein, 2016). In this sense, the linkage between the portfolio pieces followed the logic of studying a phenomenon with an inductive approach, using the case study methodology as the common thread to serve the business people community and the academy, and simultaneously sustain the outcome with the necessary research rigor to contribute a trustworthy reference for practitioners and to be used in future research when studying organizational resilience.

The integration of the case study to be used in business schools to discuss organizational resilience is oriented to educate future generations and executives to become aware of the topic and develop the competencies to strengthen their businesses to live with the crises that will arise, in the best possible way.

Knowledge Dissemination and Transfer Plan

The knowledge dissemination and transfer plan can be summarized in two ways. The first, by understanding that this research was a social process. Discussions and exchanges of views were constant and occurred throughout the entire research process and in various forums in which the research was introduced and socialized (see Appendix B). The second aspect of the transfer plan is related directly to the nature of the portfolio components. Especially for the journal article published in Harvard Business Review (HBR), the media has a robust platform to distribute and communicate the content produced. When the article was published, it was disseminated directly by the HBR site and through social media including Twitter and LinkedIn. I also distributed the link to access the article via email, through Whatsapp to my personal and professional contacts, and also via Twitter, LinkedIn, and Facebook.

The case study has been extensively discussed this year (see Appendix B), especially with the emergence of the current COVID-19 pandemic, which required the analysis of cases associated with other crises. This case was introduced in a recent Custom Program for executives at IPADE to help them adapt their businesses to the effects of the pandemic. Beyond the publication of the official case study by Emerald in the coming months, the case has been already programmed for the Business and Society course in an interdisciplinary course in the Executive MBA, also at IPADE. The case was deployed online for the first time, as the face-to-face courses migrated to virtual platforms due the pandemic.

For the academic article, beyond the publication in a journal, I presented my research findings in the EURAM academic conference, on December 2020 (originally in Dublin but with the pandemic travel restrictions, in a virtual format). I have already prepared the abstract to be published in the proceedings, and I will inform the audience that the article will be accessible when published.

Journal Article Manuscript

This portfolio component was written by me, as a single author, and has been submitted to a peer-reviewed academic journal, Geoforum. I selected this journal for its well-known reputation in publishing novel high-quality peer-reviewed articles addressing exploratory and interdisciplinary work that considers human geography and social, political, economic, and environmental research.

I would like to underline how the journal's guidelines are aligned with my research and the values that guided my efforts while working on the selected topic, by focusing on three main aspects:

Ethics. From a philosophical viewpoint, following an Aristotelian way of thinking, the ethics in my research are, in the end, the search for the common good in relation to developing more resilient organizations and communities, as pointed out in the Sustainable Development Goals (2015). My research can also be considered as ethical, as it adheres to the guidelines referred to in the Canadian Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans – TCPS 2 (2018). Also, I strictly adhered with the Royal Roads University Ethics requirements.

Transparency and openness. These principles guided me to acknowledge others' work, by ensuring proper citation and using information correctly, providing the corresponding sources. Citing other author's work properly was carefully considered in every step of the process, not only to follow the academic APA requirements but to value and respect the work and effort of other scholars. Also, I was careful throughout the research process to register contributions of research participants, and while I respected the anonymity required for this type of research, I provided clarity when I included someone else's ideas in my manuscripts. I want to note that all of the interviews and focus groups throughout my research were conducted in Spanish, and the comments included in the journal article in which I cite research participants were translated by me.

Awareness and compassion. These values are related to the continuous reflective process that my research promoted, for various reasons. Mainly, the reference to awareness for this research is associated with the need to be aware and respectful of contextual differences. These aspects were derived from working in the field and with research participants who faced significant challenges and honoring their experience in a disaster environment, while facilitating the verbalization of what many of them never shared before with others. In some cases, while recalling their experiences and stories, participants preferred to refer to artifacts, images, or just remain silent after a question, while they knew the researcher cared about them authentically. Also, I needed to translate their views to a different language, English, and a different context, the academic, in a foreign country, Canada. While I tried to represent participant's contributions fairly, I also encountered difficulties in the process, with the language, and in the understanding of a different culture, the Canadian, and with a new set of rules defined by the academy. The way to mitigate these challenges was to learn to apply the same awareness and compassion to myself and seek external support when needed.

I would also like to point out the contribution of my work, considering the theoretical and empirical implications. From a theoretical perspective, my research moves the discussion forward as it goes beyond the definition of the resilience construct or the community response at a macro level, which has been the preferred analysis of a significant proportion of previous work (Duchek, 2020; Abramson, 2014). The study of resilience is an emerging field, and more specifically the understanding of organizational resilience has been somewhat limited because the interest of some researchers has been primarily focused on the psychological side of individuals' resilience and only recently some scholars have addressed the need to apply the concept to management literature (Lengnick Hall, Beck & Lengnick-Hall, 2011). My study pursues understanding of resilience mechanisms in SME's and organizations in general, with the perspective of a non-Western approach, providing novel elements to the discussion.

Also, it is appropriate to consider that some of the insights in the proposed model (see Appendix C), may apply to other crises, not only earthquakes. Moreover, the empirical implications are more evident as demonstrated by the COVID-19 pandemic. The effects of crises require leaders to respond more effectively, supported by the knowledge, learnings and experience of those who have already faced uncertain and complex situations. Through the reflections shared in this journal article, individuals in organizations may address their efforts more precisely. For instance, the Beirut explosion or the pandemic adaptive process, understood through the organizational resilience model, could mitigate escalation of other crises by taking into account the agents who need to be more conscious about the place in which organizations may operate before, during, and after a crisis, as well as the enablers of organizational resilience such as the reflection and learning from previous occurrences.

Elective Portfolio Components

Article for Harvard Business Review (HBR)

The article can be found in the following link and was published in HBR online:

https://hbr.org/2020/02/how-businesses-can-brace-for-catastrophe?ab=hero-main-text

Harvard Business Publishing is a subsidiary of Harvard Business School, and the magazine is focused on management and is directed primarily to practitioners. The number of visitors per month to the HBR website is approximately 10 million (Wieckowski, 2020). My interest in publishing in this highly reputational media, was in the opportunity to address one of the global grand challenges that we are facing as humanity, natural disasters, and generate interest from leaders to increase crisis resilience awareness. In my experience as a Human Resources practitioner for more than 20 years, and as a business school professor, I have observed that many leaders have blind spots and the disaster resilience topic was often out of their scope of attention. In November 2019, I expressed my interest to one of the editors to publish in HBR. I did not know that the COVID-19 pandemic was about to start in only a few weeks. Among the criteria that HBR considered for the publication, I want to mention two aspects: originality and usefulness. The organizational resilience topic was uncommon in management literature, and therefore my study was an original piece. As the COVID-19 pandemic was spread globally, there was increasing interest from the practitioners' audience in learning about coping with disasters, and the development of resilience for leaders in general, understanding the importance of raising awareness on this matter. Second, the utility of the content was a priority for the editors. I was asked to work on a set of recommendations for leaders to include in the publication. One of the challenges was to translate the findings and what I learned from the literature, into something practical. I was able to address this requirement by working with my research participants, emphasizing the practices they took to develop resilient organizations. I was diligent in confirming that statements included in the article were accurate reflections of their views.

Case Study

Originally, the case study was going to be developed in Spanish, for the internal use of IPADE Business School where I work. Later, I learned about the Emerald emerging markets case writing competition, and I decided to participate. The link to information about this competition is here: http://www.ceeman.org/competitions-awards/case-writing-competition

I prepared the case study, the epilogue, and the teaching note, and the materials entered the peer-review process. The feedback I received initially was to develop a teaching plan that would base the discussion in the case content, and less in the theory. I decided to propose two alternative plans for the educator to decide what would work best for the course and the program in which the case is inserted.

The intent of the case study was to translate academic research into an outcome that could serve educational purposes. This opened up the possibility to help transform society throughout coming generations, with a continued impact on the development of more sustainable organizations and communities.

It has been rewarding to observe how students in the online forum from one of these courses shared deep thoughts with the group after having the case discussion. Here is an example:

> The only advantage we can take from a catastrophe is learning that will help us minimize risk, continue a business, make financial forecasts and what sometimes you stop doing, a simple accolade to your team. Through "Minute Zero" we can see how any person, society or company can have tools to manage to face the only constant that is change. With resilience towards the individual and/ or the organization it could help to identify which is your heel of Achilles, and focus on reinforcing those failures such as culture, values; how to delegate, strengthen and empower your team, to renew with greater speed and adaptability; have a differentiator always concerned about being reborn together with your team and therefore with your company.

I am satisfied with the outcome because beyond the deliverables I have prepared for my dissertation and graduation requirements, I feel I have contributed to the support and development of more resilient organizations in the educational environment. I have initiated conversation on a relevant topic, in a timely moment. This has been recently reinforced by an invitation to participate in a live HBR webinar, conducted on September 30, 2020. My article was included in a book to be published by HBR in October, 2020 entitled, Climate Change: The Insights You Need from Harvard Business Review.

Conclusion

My research sought to answer the question about how business leaders develop resilience in their organizations in the face of extreme events. In the original research proposal, I suggested that bringing business leaders together to explore strategies and networks to develop resilient organizations would invoke the beginnings of change, but transformative change would be dependent upon continuous action-oriented research. What happened since, and especially in 2020 with the occurrence of the global pandemic, changed our society in fundamental ways, accelerating the need to become aware of the importance of developing resilience as individuals, in our organizations, and society as a whole, also for the coming generations.

The value of my research outcomes includes both theoretical and empirical contributions. The definition of an organizational development model for SMEs expands the literature by initiating the discussion regarding a topic that was not sufficiently explored. Despite the limitations that the research has due to the specific context in which it was developed in a developing economy and with SMEs, some of the theoretical insights may apply to other crises and larger organizations, to guide the efforts of leaders who are interested in developing disaster resilience to build more sustainable businesses and communities.

I would like to continue the discussion after I graduate by participating in other forums with practitioners and scholars, and possibly by contributing to other publications on the topic. This research has triggered unexpected positive outcomes, such as the book already published by one of the research participants in which she continued to reflect on the research questions of my study. Also, for me as the facilitator of the process, the research generated a fundamental and transformative change to remain open to uncomfortable first-time situations that are beyond my control. I started a journey in which I can flow and live, not only coexist, with adversity. One of the key personal learnings was to change the perspective about experiencing disasters as exogenous forces (Lavell & Maskrey, 2014) and embrace them as part of life, and as an opportunity to grow and advance.

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Appendix A

Data Collection Sources

	Source	Data collection tool
1	Entrepreneur A initial contact (2018)	Interview (recorded)
2	Site visit 1 (2018)	Observation (field notes diary and photographs of public spaces)
3	Site visit 2 (2018)	Observation (field notes diary and photographs of public spaces)
4	Site visit 3 (2018)	Observation (field notes diary and photographs of public spaces)
5	Attendance to museum exhibit at Museo de Memoria y Tolerancia	Observation (field notes diary, exhibit compilation book)
7	Site visit 4 (19S 2018)	Observation (field notes diary and photographs of public spaces)
8	Demonstration attendance (1985 and 2017)	Observation (field notes diary)
9	Book presentation on 19S by Juan Villoro	Book: "El vertigo horizontal"
10	Site visit 5 (2018)	Observation (field notes diary and photographs of public spaces)
12	Site visit 6 (19 S 2019)	Observation (field notes diary and photographs of public spaces)
13	Entrepreneur A in case study	Interview (recorded)
14	Entrepreneur B in case study	Interview (recorded)
15	Employees group case study	Focus group (recorded)
16	Book review (Alarcon et al.)	Annotated bibliography
17	Book review (Becerra)	Annotated bibliography
18	Book review (Cruz Atienza)	Annotated bibliography
19	Youtube videos on 19S review	Diary notes
20	Attendance to museum event "Réplicas"	Conference notes
23	Alumni sessions volunteers' reflection group 1 (2019)	Focus group (recorded)
24	Alumni sessions volunteers' reflection group 2 (2019)	Focus group (recorded)
26	Leader C	Interview (recorded)
27	Leader D	Interview (recorded)
28	Leader E	Interview (recorded)
29	Leader F	Interview (recorded)
30	Leader G	Interview (recorded)
31	Leader H	Interview (recorded)
32	Leader I	Interview (recorded)
33	Leader J	Interview (recorded)
34	Leader K (ARISE and UN Global Compact)	Interview (recorded)
35	Leader K (ARISE)	Meeting (meeting notes)
36	Newspaper report referred by interviewee	Diary notes and NVivo memo
37	Facebook site referred by interviewee	Diary notes and NVivo memo
38	Website referred by interviewee	Diary notes and NVivo memo
39	Attendance to first ARISE conference (Oct 29, 2019)	Conference notes
40	Literature review on 19S (peer-reviewed sources)	Annotated bibliography
41	Risk Atlas review (Mexico City)	Annotated bibliography
42	Entrepreneur A book review	Annotated bibliography

Appendix B

Research Dissemination Efforts

	Source	**Media**
1	Public presentation of the case story with the protagonist at Foro Istmo (Mexico City)	Forum Presentation
2	First interview publication	Istmo Journal
3	UN PRME Forum, Case Western University (June, 2019)	Research proposal shared at conference presentation
4	Presentation of the research proposal to IPADE faculty with two discussants from invited universities, Rollins and Cranfield (August, 2019)	Presentation and discussion
5	Case study discussions with the protagonist participation and the attendance of 1006 participants (2019)	Case study sessions with IPADE Business School alumni (11 sessions)
6	Interview recording after the case discussion	IPADE video memory
7	Case study teaching plan shared with other business schools (INALDE in Colombia and IESE in Spain)	Email and USB pen drive
8	Training session for the Human Resources team to deliver guide the case study discussion (June, 2020)	Zoom
9	Case study discussions (May-July 2020)	Case study online discussions (7 sessions), one of them with the participation of the protagonist. From the Human Resources' IPADE team, four professors guided discussions with other groups
10	Introduction of case study in interdisciplinary MBA course	Case study discussion in a recurrent MBA course

Appendix C

Organizational Resilience Development Dimensions

Chronology	Leading through time: Anticipation, coping, and adaptation Living with crises	Dimension	Elements	Outcomes
Chronology	Leading through time: Anticipation, coping, and adaptation Living with crises	Agents	• Individual identity and resilience attributes: Physical, mental, emotional, spiritual, material • Organizational community culture and resilience attributes: activation of human capital, social resources, trust, mutuality, community organization • Distributed leadership across the entire organization • Neighborship • Humane leadership: encouraging, accountable and caring	• Individual self-efficacy and adaptive functioning • Agent leadership: People centric, fair, ethical • Organizational community agency • Intersectoral partnerships
		Enablers	• Crisis management prior knowledge and experience • Risk awareness and response capacity • Operational continuity • Prospective (vs reactive) disaster management • Adaptive organization: responsive self-organization, resource availability through economic, technological and intellectual capitals • Reflection and learning from occurrences	• Organizational adaptive functioning • Resilience capabilities development • Intergenerational education (organizational memory) • Prospective transformation
		Place	• Leading through space and place: flexible work schemes and structures • Sustainable livelihoods: natural capital • Country context: political capital, social capital, community resilience and governance	• Resilient organizational livelihoods • Adaptive organizational architecture

Portfolio Component 1: Teaching Case Study

Minute Zero: The Impact of the 19s Earthquake on *Proactive Strategies*

The teaching case with the epilogue and the teaching note, were accepted for publication on October 22, 2020 and are in the process to be released by Emerald Emerging Markets Case Studies, under the DOI:10.1108/EEMCS-04-2020-0113

Abstract

The case provides the possibility to discuss the meaning of organizational resilience, and learn how to face extreme events. The course that the case is aimed at, is referred to Business Sustainability, Crisis Management, or Corporate Social Responsibility.

The study level and expertise required to address this case is medium. The richness of the discussion from the perspective of the students is related to the possibility to empathize with the protagonist and the different actors involved, and to build on previous experience with crisis management to observe the potential risks and courses of action. Moreover, the professor also requires taking a neutral position to balance the requirements from a humanitarian perspective, with the business needs.

The case is framed within the context of the September 19, 2017 earthquake in Mexico City. ProActive Strategies' offices collapsed, causing some people to lose their lives and others to be injured. The protagonist needed to decide if the organization could survive and recover or needed to be closed after the earthquake.

After ProActive Strategies survived and recovered, it was possible to identify the main stages to develop organizational resilience in this organization: anticipation, coping, and adaptation.

Also, the paper provides empirical evidence about how organizational resilience is anchored in the attributes at individual and community levels that include human, economic, social, and

political capitals, enhanced by technological capital. Furthermore, the enablers of resilience add external entities and the ecosystem at a macro-level, considering political, social, and economic aspects of the context.

The expected learning outcomes are:

- To clarify the meaning of resilience and its attributes.
- To explore the influence of the leader on the development of organizational resilience.
- To identify critical decisions for the recovery of a business after an external event such as the earthquake that took place on September 19th in Mexico City.
- To point out the stages for the development of organizational resilience, in the short, and long term: anticipation, coping, and adaptation.
- To clarify the actions that could be taken to prepare an organization for an extreme event or respond to a large-scale crisis.

Teaching Notes are available for educators only. Please contact your library to gain login details or email support@emeraldinsight.com to request teaching notes

The teaching note and the epilogue of the case to be used in the case discussion are the supplemental materials to this case.

The case study aims to understand how resilience can be developed in organizations when facing an extreme event. It is aligned with the Sustainable Development goals, in particular with SDG9 referred to the development of sustainable industry.

Portfolio Component 2: Harvard Business Review Article

How Businesses Can Brace for Catastrophe

by Yvette Mucharraz y Cano

February 06, 2020

The original article in accordance to copyright can be found published in HBR online:

https://hbr.org/2020/02/how-businesses-can-brace-for-catastrophe?ab=hero-main-text

The article was also included in the Insights from HBR collection on Climate Change, and can be found in print or as ebook in the following website:

https://store.hbr.org/product/climate-change-the-insights-you-need-from-harvard-business-review/10404

Portfolio Component 3: Journal Article

Developing Organizational Resilience in a Catastrophe: An Empirical Study

Abstract

This paper concerns a sustainability problem: the development of organizational resilience in the face of a catastrophe. The number of people affected globally by crises and natural disasters adds up to millions. Disruptive events will continue to happen, and organizations require continuous adaptation to live with crises. The research is oriented to answer the question: *How can business leaders develop resilience in their organizations in extreme events?* The study takes the perspective of small and medium enterprises in emerging markets. The research design is based on the case study methodology, to understand what worked for a group of leaders who represented ten SMEs affected by an earthquake. The findings reflect that organizational resilience can be developed through four dimensions: agents, enablers, place, and chronology, as evolves in a non-linear chronological continuum. This last feature considers the anticipation, coping, and adaptation phases from a disaster (Duchek, 2020). The context in which the research took place was associated with the 2017 earthquakes in Mexico, and the crisis triggered may have similarities with other catastrophic events like the COVID-19 that increased uncertainty and vulnerability, especially for SMEs that represent in Mexico more than 95% of businesses, being the first employment generators.

Keywords

Organizational resilience, sustainability, crisis management, disasters

Paper type

Empirical paper

The journal article was recently submitted to the Geoforum journal and there is an editor already assigned to work in this publication. Considering the journal's requirement to publish novel work, the content is not included in this synthesis paper.