Revista Iberoamericana para la Investigación y el Desarrollo Educativo
ISSN 2007 - 7467

https://doi.org/10.23913/ride.v14i28.1979

Scientific articles

Capacidad productiva y eficiencia tecnológica: análisis de sus efectos en la resiliencia de empresas manufactureras en México

Productive capacity and technological efficiency: Analysis of their effects on manufacturing companies in Mexico

Capacidade produtiva e eficiência tecnológica: análise de seus efeitos na resiliência das empresas manufatureiras no México

Silvia Mata Zamores
Universidad Autónoma de Aguascalientes, México
silvia.mata@edu.uaa.mx
https://orcid.org/0000-0002-9917-2691

Rocío Montserrat Campos García
Universidad Autónoma de Aguascalientes, México
rmontsecg@hotmail.com
https://orcid.org/0000-0003-3279-6640

Luis Fernando Landa Suarez
Universidad Autónoma de Aguascalientes, México
ferlan.725.ls@outlook.com
https://orcid.org/0009-0007-6865-9767

Revista Iberoamericana para la Investigación y el Desarrollo Educativo
ISSN 2007 - 7467

Resumen

La capacidad productiva y la eficiencia tecnológica son factores importantes en el desarrollo de la resiliencia de empresas, pues no solo modifican la forma en que se desempeñan en un mercado determinado, sino que también actúan en la regulación de las operaciones de sus activos; sin embargo, su relación ha sido poco analizada, lo que implicaría conocer cómo lograr que una empresa identifique, se sobreponga y se adapte a eventos inesperados en el ambiente cambiante. Por eso, en la presente investigación se recolectó información mediante un cuestionario con una escala Likert de cinco puntos dirigido a empresas manufactureras. Para ello, se efectuó un análisis de ecuaciones estructurales para determinar si la capacidad productiva y la eficiencia tecnológica tienen un efecto positivo sobre la resiliencia. En tal sentido, se puedo determinar que la capacidad productiva tiene un efecto positivo sobre la resiliencia con un ß = 0.36, mientras que la eficiencia tecnológica tiene un efecto positivo sobre la resiliencia con un ß = 0.41, ambas con $p < 0.05$. Estos hallazgos permiten contribuir al entendimiento de como la productividad y la tecnología, vistas desde una perspectiva de capacidad y de eficiencia, permiten a una empresa identificar, adaptarse y sobreponerse a cambios repentinos en el ambiente.

Palabras clave: tecnología, capacidad tecnológica, eficiencia tecnológica, resiliencia.

Abstract

The productive capacity and the technological efficiency are considered as important factors in the development of the resilience of companies, modifying the way in which they perform in a determined market even in the regulation of the operations of their assets, however, their relationship has been little analyzed, which would imply knowing how to make a company identify, overcome and adapt to unexpected events in the changing environment. Thus, in the present investigation, information was collected through a questionnaire with a five-point Likert scale aimed at manufacturing companies and with an analysis of structural equations, the analysis of the hypotheses raised on whether productive capacity and technological efficiency have an effect. positive on resilience, which allowed us to identify that productive capacity has a positive effect on resilience with ß = 0.36 and that technological efficiency has a positive effect on resilience with ß = 0.41, both with $p < 0.05$. These findings allow us to contribute to the understanding of how productivity and technology, seen from a capacity and efficiency perspective, allow a company to identify, adapt and overcome sudden changes in the environment as to understand how a company can develop a resilience process to thrive.

Revista Iberoamericana para la Investigación y el Desarrollo Educativo
ISSN 2007 - 7467

Key words: Technology, technological capacity, technological efficiency, resilience.

Resumo

A capacidade produtiva e a eficiência tecnológica são fatores importantes no desenvolvimento da resiliência das empresas, uma vez que não só modificam a forma como atuam num determinado mercado, mas também atuam na regulação das operações dos seus ativos; Porém, sua relação tem sido pouco analisada, o que implicaria saber como garantir que uma empresa identifique, supere e se adapte aos acontecimentos inesperados no ambiente em mudança. Portanto, nesta pesquisa as informações foram coletadas por meio de um questionário com escala Likert de cinco pontos direcionado às empresas industriais. Para isso, foi realizada uma análise de equações estruturais para determinar se a capacidade produtiva e a eficiência tecnológica têm um efeito positivo na resiliência. Neste sentido, pode-se determinar que a capacidade produtiva tem um efeito positivo na resiliência com ß = 0,36, enquanto a eficiência tecnológica tem um efeito positivo na resiliência com ß = 0,41, ambos com $p < 0,05$. Estas descobertas contribuem para a compreensão de como a produtividade e a tecnologia, vistas do ponto de vista da capacidade e da eficiência, permitem que uma empresa identifique, se adapte e supere mudanças repentinas no ambiente.

Palavras-chave: tecnologia, capacidade tecnológica, eficiência tecnológica, resiliência.

Reception date: May 2023 **Acceptance date:** November 2023

Introduction

The market in which companies operate is characterized by its high dynamism and sudden changes that impose great demands on organizations, forcing them to develop new capabilities and use technological tools (Michaelis *et al* ., 2021). This, added to the competition generated by the trend of economic integration between industries, globalization and technological integration, have raised the demands in various sectors, with rapid changes in operating conditions for companies. In this context, resilience has become a recurring concept in the literature - understood as the ability to positively adapt to adverse situations (Luthar *et al* ., 2000) - hence there is a growing interest in developing clear knowledge about how organizations can acquire new capabilities and transform their business models (Schaltegger *et al* ., 2017).

In the case of the manufacturing sector, according to Hernández (January 14, 2021), this industry has stood out as one of the most resilient during the health crisis, since supply and demand

indicators, as well as vacancy and prices, showed a positive behavior in 2020. The sector took advantage of unfavorable circumstances to increase industrial demand through *nearshoring* .

For his part, García (2020) also highlights that this sector is one of the most resilient in the country, thanks to its dynamism and rapid reactivation during the covid-19 pandemic. Therefore, resilience, which encompasses both organizational capabilities and the adoption of technology to overcome adversities, becomes a key topic to explore the causal relationship between these variables (Hoegl and Hartmann, 2020).

Therefore, it is essential to consider the possibility of measuring the resilience variable in relation to technology and productivity in order to understand how to identify, introduce and develop it in a company (Garc ía, 2020). Resilience is a multidimensional concept that is integrated into an economic, environmental and social context (Fietz *et al* ., 2021). In addition, it constitutes a factor of great relevance to achieve goals in the development of the manufacturing industry, a sector that generates large amounts of waste and considerably consumes raw materials and natural resources (Gonzales *et al* ., 2021), although it is also the main contributor to the economic value of a nation and plays a significant role in the gross domestic product (GDP) (García, 2020).

Specifically, the premise of this study focuses on analyzing productive capacity and technological efficiency as key elements in the resilience of the manufacturing sector in Mexico. The methodology used to carry out this research includes an exhaustive review of the literature, the development of hypotheses and the identification of the study variables, which are integrated into a theoretical model.

The causal relationship between these variables is then examined using a database and structural equation modeling through PLS. Finally, the results obtained are presented, followed by an analysis and the conclusions of the study, as well as the presentation of the limitations.

Literature Review

Productive capacity

Productive capacity is defined as the ability necessary to effectively use technological knowledge. In the manufacturing sector, this is essential for innovation and competitiveness in various markets; Furthermore, it plays a fundamental role in satisfying current demands that require innovation and good performance of human capital in a company (García *et al* ., 2015). Specifically, the creation and dissemination of new knowledge are essential elements of a company's productive capacity. Its development, use and accumulation allow the integration of factors from the external environment that influence the company (Hernández, January 14, 2021).

Productive capacity is a dynamic set of skills that encompasses practices and processes necessary for the effective operational functioning of companies (Bustinza *et al* ., 2016). This is characterized by its dynamic nature, its ability to adapt to change and to renew and improve operational, production and marketing processes (García *et al* ., 2015). In addition, it facilitates innovation in the business unit by promoting production, investment, adaptation and comprehensive support of its operations and knowledge, which gives the company an outstanding capacity to adapt in a constantly changing environment, promoting, in other words, the development of resilience (Hernández, January 14, 2021).

Based on these theoretical contributions, the following research hypothesis can be proposed in relation to the study variables:

H1: Productive capacity has a positive effect on resilience.

Technological efficiency

Technological efficiency in the field of administration is defined as the ability of a unit to maximize the productivity of available resources. According to Delgado (2019), a production process is considered technologically efficient when it is not possible to increase the quantity of a final product without increasing the use of inputs, or vice versa, without decreasing the quantity of some other final product. On the other hand, according to Cachanosky (2012), technological efficiency can be evaluated visually using the economic concept known as the *production possibilities frontier* (PPF).

From an organizational perspective and in the context of manufacturing companies, technological efficiency implies changes in business practices that lead to well-defined organizational structures, a customer-centric approach, a willingness to change and greater integration between processes and employees. of the organization (Črešnar *et al* ., 2023).

Companies make these changes with the aim of improving their competitiveness, increasing productivity, achieving greater business efficiency, reducing costs, improving the effectiveness of human resources and satisfying customers (Dabić *et al* ., 2023).

Technological efficiency is achieved through labor flexibility, which involves access to data and digital tools, as well as facilitating collaboration and communication between company employees. This allows them to have the right tools to carry out their work through the use of an intelligent network and specialized *software* , which increases the productivity and competitiveness of the company. Furthermore, this allows the company to remain in the market by developing resilience capacity (Črešnar *et al* ., 2023). Therefore, the following hypothesis is formulated to identify the relationship between technological efficiency and resilience.

H2: Technological efficiency has a positive effect on resilience.

Organizational resilience

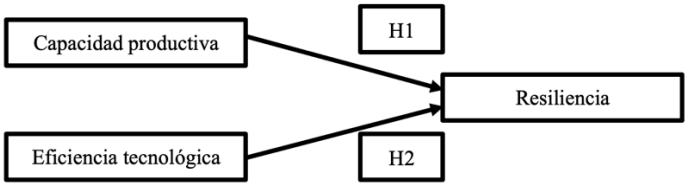
Vaz de Lima and Busanelli (2019) define resilience as the ability to reduce risks and adapt quickly to an external shock, such as an economic crisis, allowing companies to continue operating even under adverse conditions. From the perspective of organizational culture, resilient companies can develop new capabilities and skills to take advantage of emerging opportunities. These organizations recognize these opportunities and modify or reinvent their strategies before circumstances force them to do so. Therefore, the resilience of business units supports the economic system in the face of shocks and mitigates disturbances when faced with unexpected situations (Hynes *et al* ., 2020).

In the case of the manufacturing sector in the state of Aguascalientes, it has experienced notable growth in recent decades, which has required the renewal of its operations to maintain a certain degree of competitiveness and competition at an international level (Gonzales *et al* ., 2021). This has led to the identification of technology and development capabilities, such as resilience, as factors that improve the quality and efficiency of processes in an organization and, in general, its performance (Colin *et al* ., 2016). Furthermore, market effects have an immediate impact on companies, making them important elements to promote economic exchange in the region (Deichmann *et al* ., 2004). For this reason, it is essential to understand the relationship between technology, seen from the perspective of its influence and its efficiency on resilience, to facilitate the economic development of this sector.

Hynes *et al* . (2020) define the resilience-based approach as the ability of a system to absorb and recover from a wide range of disorders. This definition includes the ability to adapt positively

to take advantage of opportunities that may arise as a result of disruptions, through different patterns of response and behavior that an organization develops to face financial pressures (Vaz de Lima and Busanelli, 2019). . Considering this approach, a theoretical research model has been proposed, as illustrated in Figure 1, which details the relationships to be investigated between the technological capacity and efficiency and the resilience of a company.

Figure 1. Theoretical research model



Source: self made

Method

Research relevance

The research was carried out through the collection of information provided by the administrators of 246 small and medium-sized companies in the manufacturing sector of the state of Aguascalientes, Mexico. To do this, a telephone survey carried out by a *marketing* company was applied . The sample was calculated based on the total population of 672 units, with a confidence level of 95% and a margin of error of 5%. The administrators responded to the survey analyzing the study variables of this research. Of the sample, more than 50% of the companies have been in the market for 5 to 24 years, 90% of the managers are men and only 10% are women. The majority of administrators (43%) are between 45 and 59 years old.

The survey used measurement scales for the variables of productive capacity and technological efficiency, as well as for resilience, adopted from a previous study on the ability of a company to regulate the sustainability of its supply chain in turbulent environments (Chatterje and Chaudhuri, 2021). The items of each variable were measured using a five-point Likert scale for subsequent analysis in structural equations.

Results

The data were analyzed using IBM SPSS Statistics 27 and SmartPLS 4. In the first stage of analysis, the descriptive statistics of the data were presented in Table 1, which includes the mean values and standard deviations of each variable, as well as the AVE values. represented on the diagonal. The correlations are shown at the bottom of the table, and the squared correlations at the top. The correlations have a significant value at a significance level of 0.05. An exploratory analysis was not conducted because the data collection questionnaire was previously validated by Chatterje and Chaudhuri (2021), who reported that they did not find a predominant individual bias.

Table 1 . Descriptive statistics and AVE values

Variables	Mean (SD)	(1)	(2)	(3)
Productive capacity	4.13 (0.75)	(0.71)	0.34	0.49
Technological efficiency	4.09 (0.73)	0.58*	(0.68)	0.46
Resilience	4.22 (0.79)	0.70*	0.68*	(0.74)
The values on the diagonal represent the AVE (*average variance extracted*); values below are correlations; values above squared correlations. *The correlation is significant at a significance level of 0.05.				

Source: Own elaboration

Table 2 corresponds to the confirmatory factor analysis using the varimax rotation method with Kaiser normalization and principal components analysis. The solution revealed three factors that explained 61% of the total variance. This table details the three study variables with their respective items and corresponding loadings. The productive capacity variable has five items, technological efficiency has five items and resilience has four items.

Table 2 . Variables and item loading

Variables	Item scale	Factor 1	Factor 2	Factor 3
Technological capacity	TCT1 TCT2 TCT3 TCT4 TCT5	0.78 0.62 0.71 0.70 0.68		
Technological efficiency	TFT1 TFT2 TFT3 TFT4 TFT5		0.67 0.72 0.71 0.69 0.67	
Resilience	PRO1 PRO2 PRO3 PRO4			0.76 0.79 0.61 0.68
Varimax rotation method with Kaiser normalization and principal components analysis				

Source: Own elaboration

Table 3 shows the variables and the standardized loadings of their items with $p<0.05$. In addition, the analysis of reliability and validity of the variables is described using Cronbach's alpha (α), the average variance extracted (AVE) and the construct reliability (CR). Acceptable levels of reliability and validity were found (Hair *et al* ., 2022). CR values are higher than AVE values, which, according to Dabič *et al* . (2023), indicates that each variable effectively measures the phenomenon under study without bias.

Table 3 . Variables and standardized item loadings

Variables	Item scale	Standardized load p<0.05
Productive capacity (α=0.71; AVE=0.72; CR=0.83)	TCT1 TCT2 TCT3 TCT4 TCT5	0.79 0.84 0.74 0.79 0.78
Technological efficiency (α=0.72; AVE=0.70; CR=0.82)	TFT1 TFT2 TFT3 TFT4 TFT5	0.85 0.82 0.79 0.80 0.77
Resilience (α=0.79; AVE=0.75; CR=0.88)	PRO1 PRO2 PRO3 PRO4	0.78 0.81 0.80 0.75
Cronbach's alpha = (α); Average variance extracted = AVE; Construct reliability = CR		

Source: Own elaboration

Table 4 presents the results of the structural equation model used to test the hypotheses formulated in the research project. This model identified the causal relationship between the three variables: technological capacity, technological efficiency and resilience. As previously mentioned, adequate levels of validity and reliability were demonstrated (Hair *et al* ., 2022).

Structural model estimates and fit indices were calculated and revealed that productive capacity has a positive effect on resilience with a value of ß = 0.36. Similarly, technological efficiency was found to have a positive effect on resilience with a value of ß = 0.41. Both effects have a significance level of $p < 0.05$, leading to the acceptance of both Hypothesis 1 and Hypothesis 2. Overall, these findings provide an understanding of how productivity and technology, considered from capability perspectives and efficiency, allow a company to be resilient in the face of unfavorable circumstances in its environment.

Table 4 . Estimation of the theoretical model and fit indices

Hypothesis	Standardized Estimates	Decision
H1: Technological capacity has a positive effect on resilience	0.36 ($p<0.05$)	H1 is accepted
H2: Technological efficiency has a positive effect on resilience	0.41 ($p<0.05$)	H2 is accepted
Fit indices: X2=378.06, df=90, RMSEA=0.04 CFI=0.89, NFI=0.88		

Source: Own elaboration

Discussion

After analyzing the research results, solid evidence has been found that supports the proposed hypotheses. This evidence suggests that productive capacity and technological efficiency have a positive impact on business resilience. In other words, these variables have the capacity to increase and promote resilience in companies, which implies that those companies that have high levels of productive capacity and technological efficiency are more likely to maintain their resilience in the face of any unexpected circumstance or event that occurs in the constantly changing business environment.

These findings align with the contributions of Badoc-Gonzales *et al* . (2021), who highlight that business resilience encompasses a wide range of responses of an organization to stimuli from the constantly changing environment, which are oriented towards responsible use of available resources. In this context, technology, as noted by Bustinza *et al* . (2016), it is considered an available resource that allows an organization to maintain the continuity of its operations in times of uncertainty and disturbances in normal operating conditions.

In this sense, this research has integrated productivity and technology into two variables, namely, productive capacity and technological efficiency, following the approach of Chatterje and Chaudhuri (2021), which has allowed us to analyze the process of building resilience. business. In business literature, resilience has consistently been compared to a company's ability to generate effective responses to natural disasters (such as earthquakes and fires) and human events (such as armed conflicts and financial crises). These changes are designed to protect, support and improve the company in difficult situations (Hadjielias *et al* ., 2022).

In addition, there is an abundant literature that supports the study of resilience in small businesses (Hadjielias *et al* ., 2022), which have been the central focus of this research due to their limited resources to operate. Resilience is understood as a concept that has significant

repercussions on the economic system of these companies, which in turn directly influences the economic sector in general of countries with a high presence of small businesses, such as the case of Mexico and the state of Aguascalientes. The latter has 672 units classified as small and medium-sized companies (National Institute of Statistics, Geography and Informatics [Inegi], November 1, 2020).

Despite the contributions of the literature in relation to productivity, technology and resilience, some authors, such as Duchek (2019), describe resilience as a meta-capacity that is integrated into different aspects of an organization. They argue that through various stages—such as anticipation, coping, and adaptation—resilience becomes a strategic and systematic process to defend and recover in unexpected situations. This coincides with the findings of the present research, but differs to the extent that Duchek highlights that the resilience process uses available resources only in one of its stages: anticipation. It suggests that technology is relevant at this stage of the process, but that, in the coping and adaptation stages, it does not play such a crucial role, since resilience in these stages is more related to organizational aspects than to available resources or capabilities.

However, this interpretation can be understood from the same perspective as Duchek (2019), who identifies resilience as a systemic process in which various parts of a company contribute to a common result: the ability to generate a defensive response to circumstances. unfavorable. In this context, technology is not seen as an isolated ingredient, but as an essential component in the response by forming part of the resources available to take proactive action before or during an unwanted event. Therefore, resilience must be considered as part of a complex process with multiple stages.

Conclusions

The main focus of this research was to identify the influence of productive capacity and technological efficiency on resilience. The findings, beyond presenting quantitative data, also incorporated a significant amount of literary contributions that enriched the field of knowledge on business resilience. These results are not only applicable to small and medium-sized companies, but are also relevant to those companies with business models that operate in the asset market. Consequently, it can be generalized that resilience is a complex process that allows companies to identify, address and overcome unexpected situations that threaten the continuity of their operations.

Likewise, it was possible to recognize the importance of technology in a company, as well as the productivity of its human resources. Improving the capacity and efficiency of an organization will allow for more prosperous performance in the market, making it less susceptible and vulnerable to continuous changes in the environment. This will not only provide you with a competitive advantage but will also strengthen your sustainable position, optimizing your overall performance and ultimately economic activity in any sector that is part of a country's economy. In short, it can be said that technology plays a fundamental role in a company's ability to be resilient in the face of adverse situations.

Considerations and limitations

The limitations of the research are presented primarily in a practical rather than theoretical context. This means that the study of productivity and technology, considering capacity and efficiency, involves the identification of various advances implemented in different companies. Similarly, resilience refers to a defense and adaptation response that varies depending on the available resources and dynamic capacity of each entity, which includes the need to distinguish between different types of adversities that can affect companies.

Furthermore, there is a scarcity of literature related to the study of these variables, which limits the integration of literary contributions from different authors in the analysis. In the business environment, it is essential to consider the importance of available resources, as these facilitate operations and allow companies to develop new skills that give them a distinctive advantage over other organizations. Consequently, resilience becomes crucial in a constantly changing environment, as current circumstances put the continuity of the least prepared companies at risk. Likewise, the increase in this demand highlights the need for continuous preparation and the development of new skills to lead at various market levels.

Future lines of research

This research project has made it possible to identify that both productive capacity and efficiency in the use of technology are strategic objectives that enable a company to become more resilient in the face of adverse situations and, therefore, more competitive in the market. This opens the door to future lines of research that are closely related to the study of competitiveness, considering it as a capacity acquired after a company has proven to be productive, efficient from a technological point of view and resilient. Therefore, a theoretical model could be designed to investigate the effect of these variables on competitiveness.

Another line of research could analyze the impact of these variables on the economic performance of a specific sector that has been proven resilient. This would help understand how these variables are reflected in a company's financial results and, therefore, identify the nature of their relationship.

References

Badoc -Gonzales, BP, Mandigma, MB and Tan, J. (2021). SME resilience as a catalyst for tourism destinations: a literature review. *Journal of Global Entrepreneurship Research* , *12* (1), 23-44. https://doi.org/10.1007/s40497-022-00309-1

Bustinza, OF Vendrell-Herrero, F., Perez-Arostegui, M. and Parry, G. (2016). Technological capabilities, resilience capabilities and organizational effectiveness. *The International Journal of Human Resource Management* , *7* , 1-23.

Cachanosky , I. (2012) Technical efficiency, economic efficiency and dynamic efficiency. *Market Process Magazine* , *9* (2), 51-78.

Chakravarty, A., Grewall , R. and Sambamurthy , V. (2013). Information technology competencies, organizational agility and firm performance: Enabling and facilitating roles. *Info Syst Res* , *24* (4), 976-997. https://doi.org/10.1287/isre.2013.0500

Chatterjee, Sh . Y Chaudhuri , R. (2021) Supply chain sustainability during turbulent environment : Examining the role of firm capabilities and governance regulations . *Operations Management Research* . https://doi.org/10.1007/s12063-021-00203-1

Colin, M., Galindo, R. and Hernández, O. (2016). Information and communication in technologies, strategy and supply chain management in manufacturing SMEs of Aguascalientes, México. *Annals of Data Science* , *3* , 71-88.

Cooke, L.F., Cooper, B., Bartram, T., Wang, J. and Mei, H. (2016). Mapping the relationship between high performance work systems, employee resilience and engagement: A study of the banking industry in China. *The International Journal of Human Resource Management* , *30* (8), 1-22.

Črešnar, R., Dabič , M., Stojčić , N. and Nedelko, Z. (2023). It takes two to tango: technological and non-technological factor of Industry 4.0 implementation in manufacturing firms. *Review of Managerial Science* , *17* (3), 827-853.

Dabić , M., Maley, J.F. Črešnar, R. and Nedelko, Z. (2023). Unappreciated channel of manufacturing productivity under industry 4.0: Leadership values and capabilities. *Journal of Business Research* , *126* . https://doi.org/10.1016/j.jnusres.2023.112900

Deichmann, U., Fay, M., Koo, J. and V. Lall, S. (2004). Economic structure, productivity, and infrastructure quality in Southern Mexico. *Ann Reg Sci . 38* , 361-385. 10.1007/s00168-003-0171-8

Delgado, W.G. (2019). Technical efficiency of manufacturing companies in Colombia. *Journal of Social Sciences , 24* (2), 73-82.

Duchek, S. (2019). Organizational resilience: a capability-based conceptualization. *Business Research , 13* (1), 215-246. https://doi.org/10.1007/s40685-019-0085-7

Fietz, B., Hillmann, J. and Guenther, E. (2021). Cultural Effects on Organizational Resilience: Evidence from the NAFTA Region. *Schmalenbach Journal of Business Research , 73* , 5-46. https://doi.org/10.1007/s41471-021-00106-8

García, A., Pineda, D. and Andrade, MA (2015). Technological capabilities for innovation in manufacturing companies. *University & Business , 17* (29). https://dx.doi.org/10.12804/rev.univ.empresa.29.2015.11

García, J. (2020) The resilience of the manufacturing sector. *Forbes* . https://www.forbes.com.mx/la-resiliencia-del-sector-manufacturero/

Gonzales, R., Díaz, M. and Govea, AM (2021). Implementation of Environmental Practices and Innovation in Manufacturing Firms in Mexico: regional analysis perspective. *Interciencia , 46* (3), 104-109.

Hadjielias , E., Christofi , M. and Tarba , S. (2022). Contextualizing small business resilience during the COVID-19 pandemic: evidence from small business owner-managers. *Small Bus Econ , 59* (1), 1351-1380. https://doi.org./10.1007/s11187-021-00588-0

Hair, J.F., Hult, G.T.M., Ringle, C.M., & Sarstedt, M. (2022). *A primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)* (3rd ed .). Thousand Oakes, Ca:Sage .

Hernández, F. (January 14, 2021). Industrial market, the most resilient to the onslaught of the pandemic. *Urban center* . https://centrourbano.com/2021/01/14/industrial-resiliente-pandemia/

Hoegl , M. and Hartmann, S. (2021). Bouncing back, if not beyond: Challenges for research on resilience. *Asian Business & Management , 20* , 456-464. https://doi.org/10.1057/s41291-020-00133-z

Hynes, W., Trump, B.D., Love, P., Kirman, A., Galaitsi , S.E., Ramos, G. and Linkov, I. (2020). Resilient financial systems can soften the next global financial crisis. *Challenge , 63* (6), 311-318.

National Institute of Statistics and Geography (Inegi) (November 1, 2020). *2019 economic census* . https://www.inegi.org.mx/programas/ce/2019/

Luthar, S.S., Cicchetti, D., & Becker, B. (2000). The construct of resilience: A critical evaluation and guidelines for future work. *Child Development , 71* (3), 543-562.

Michaelis, B., Rogbeer , Sh., Schweizer, L. and Özleblebici , Z. (2020). Clarifying the boundary conditions of value creation within dynamic capabilities framework: a grafting approach. *Review of Managerial Science , 15 ,* 1797-1820. https://doi.org/10.1007/s11846-020-00403-2

Schaltegger , S., Etxeberria, IÁ. and Others , E. (2017). Innovating Corporate Accounting and Reporting for Sustainability - Attributes and Challenges. *Sustain Dev , 25* (2), 113-122.

Vaz de Lima, D. and Busanelli , A.C. (2019). Financial residiese of municipal civil servants' pension funds. *R. Cont. Fin , 30* (81), 425-445. DOI: 10.1560/1808-057x201908810

Contribution Role	Author(s)
Conceptualization	-Rocío Montserrat Campos García-
Methodology	-Luis Fernando Landa Suarez-
Software	-Rocío Montserrat Campos García-
Validation	-Silvia Mata Zamores -
Formal Analysis	-Luis Fernando Landa Suarez-
Investigation	-Silvia Mata Zamores -
Resources	-Silvia Mata Zamores -
Data curation	-Rocío Montserrat Campos García-
Writing - Preparation of the original draft	-Luis Fernando Landa Suarez-
Writing - Review and editing	-Silvia Mata Zamores -
Display	-Rocío Montserrat Campos García-
Supervision	-Silvia Mata Zamores -
Project management	-Rocío Montserrat Campos García-
Fund acquisition	-Silvia Mata Zamores -