

The COVID-19 Effect in Mexican SMEs

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ABSTRACT

This article presents a literature review on how the COVID-19 pandemic changed the way of managing risks in the supply chains of Mexican SMEs. Research was carried out in the most important scientific research databases. The spread of the pandemic in 2020 has affected public health and the world's companies, including micro, small and medium enterprises (SMEs). The impact on business activities is tremendous, and stringent government policy and response to curb the disease are necessary. SMEs are more vulnerable to internal and external events and depend on the capacity of their owner-manager to run the businesses. The Coronavirus is already considered a factor that requires attention on the behalf of Mexican companies. It is now difficult to imagine a world that isn't permanently changed, and organizations need to adapt. The normality of 2019 is not going to return, and Mexico has a fragile economy and a low-budget health system. The SME supply chains contain many links. At the moment of being struck by a crisis such as the present one, we are experiencing that disruption is likely to occur at the weakest link. Supply chain resilience is the adaptive capacity to prepare for unexpected events, respond to disruption, and recover. A Mexican SME that wishes to be resilient must know all the risks that can affect it. An opportunity for SMEs due to the coronavirus refers to the possibility for continuous innovation through the development of new or better products, processes, and business models. Resilience and risk thinking are life-saving phenomena for Mexican SME's.

1. Introduction

The coronavirus (COVID-19) is a viral infection that emerged at the end of 2019 in Wuhan, China, and has spread to all regions of the planet. It is highly transmissible and causes severe respiratory problems. The signs and symptoms are somewhat similar to influenza and seasonal allergies. There is no clinically approved antiviral drug or vaccine available at this moment. Many companies are working on the development of an effective cure [1]. The coronavirus outbreak is a tragedy that is affecting millions of the world's inhabitants. The pandemic also had negative impacts on the global economy, industries, corporations, and small and medium-sized businesses [2]. Many thousands have died, others have lost friends or family members, and many businesses have ceased to exist [3].

The World Health Organization (WHO) declared the problem a health emergency and classified it as a pandemic at the international level. Containment measures were put in place, such

as the closing of factories and offices, cancellation of trips, and a mandatory at-home quarantine was even imposed, leading to an unprecedented economic crisis [4]. In all countries, people are asked to choose privacy and health, that is, protecting their health and staying home to stop the spread. When the population trusts the public authorities, they do the right thing and do not need to be monitored to comply with the quarantine. A motivated, well-informed society is often much more powerful and effective than an ignorant, government-monitored population [5].

The methodology used for this article was a literature review. The theme was the risks in SMEs with the appearance of COVID-19 and its impact in Mexico. Research was carried out in the databases of: Google Scholar, SpringerLink, and Elsevier, among others. Related topics were searched for in books, theses, and lectures. Research started with search formulas and the selection of keywords such as SMEs, COVID-19, Risks, Resilience, and Supply chain.

This situation affects not only the health of the planet but also the structure of the world economic order. As a result, many

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economies are in crisis and on the verge of a recession [2]. Although policies to contain the expansion of the pandemic such as quarantines and temporary closures are necessary, they cause a reduction of international trade, interruptions in supply chains, lower productivity, contraction of economic activity, less investment, closure of businesses and loss of jobs [6]. Coronavirus crudely shows us the limits of the system in which we live, the inequalities that we have wanted to ignore, and the urgent need to revalue and strengthen the public, frequently and collectively [7]. Small and medium-sized enterprises (SMEs) are organizations with fewer than 250 employees, and are the backbone of the world's economy. SMEs have characteristics that support them when there is a crisis. Being small organizations helps them to be flexible when new opportunities arise [8]. COVID-19 is a highly infectious and lethal virus; people's sense of insecurity is significant and may include feelings of severe panic. Fear and anxiety probably force consumers to avoid purchases in shops, restaurants and entertainment facilities, changing their lifestyle and behaviour. SMEs are not immune to this current and future situation [9].

With the disruptions caused to the world's SMEs, a great deal of research has been carried out by various authors on how these companies could successfully face this global crisis. In the case of Eggers [8], he investigated how SMEs had faced crises and disasters before COVID-19 to turn them into opportunities. In the case of authors Omar, Ishak, & Jusoh [2], they investigated how the pandemic affected SMEs in Malaysia to identify strategies to survive risks, based on the experiences of business owners. Thorgren & Williams [10] carried out a study in several SMEs in Sweden. They analyzed what actions they took to survive and prevent a major disaster, looking for how they could have a "better" or "critical" long-term impact. In this way, researching to understand the risks that affect SMEs in Mexico helps us to expand our knowledge of how these companies manage disruptions, seeking to be resilient to this pandemic that has changed the normality of how the world works.

2. Methodology

To prepare this research, a literature review was carried out. The search was guided by risks in the supply chains in Mexican SMEs with the appearance of COVID-19. The information investigated consisted mainly of articles published between March and September 2020. The methodology combined a systematic literature review with the most relevant articles. The literature review was augmented by the use of online computerized search engines including Google Scholar (350 articles), SpringerLink (105 articles), and Elsevier (252 articles). Information was also sought in books, theses, and lectures, using Keywords such as SMEs in Mexico, COVID-19, Risks, Resilience, and Supply Chains. Approximately 700 sources were retrieved and analyzed. In a careful analysis, the articles that contained the best information were selected. Based on this review, the main risks in Mexican SMEs and their effects during the COVID-19 pandemic were found. For the preparation of this investigation, a literature review was carried out.

3. Supply Chain in Mexican SMEs

The focus of a supply chain is to provide the right product to the consumer, at the right cost, with the correct quality and

quantity. This network includes the manufacturing of a product or service, suppliers, retailers, transportation, and customers on both sides [11]. Supply chains work the same way our bodies do to fight the COVID-19 virus. If we imagine the human body as a medieval city to be defended, the immune system would be the army with all its strategies to take care of the safety of the inhabitants. The first line of defence is the wall. In the case of our body, it is the skin. But, there are other possible entrances, such as doors, cracks, water outlets, which are essential for the city to function. In our body, those entrances that are related to the outside are the nose, eyes, ears, mouth, and small wounds, which are the places through which the virus can enter to attack and end the person's life [12]. A supply chain contains many links. At the moment of being struck by a crisis like the present one, the weakest link is the place where the disruption that causes the failure or stoppage of the flow of materials, causing a drop in production, customer dissatisfaction or economic losses. If not corrected on time, these affect the chain and may cause the closure or weakening of any of the companies involved.

Our society seeks efficiency and economic benefit more than safety, a mindset that must change after the current outbreak. Many companies have closed, disrupting trade in most industrial sectors. Entrepreneurs and brands face many short-term challenges in areas such as health, safety, supply chains, workforce, cash flow, changes in demand, sales, and marketing [13]. The pandemic has several characteristics: it is a global phenomenon, with impacts on public health and the economy. It is spread between people, but also in commerce. The world economy is connected by value chains and international movements of people, capital, goods, and services [3]. The prolonged closure of companies in the world economy reduces inventory stock in supply chains. Companies must minimize disruption and adapt quickly to this new business landscape [14].

For Latin America, an increase in unemployment and poverty is anticipated as a result of the global economic slowdown, tourism decline, reduced remittances from immigrants, the interruption of value chains, and the lack of international investment [6]. As to the effects of COVID-19 on the real economy, there are already projections that assume an employment crisis in Mexico. Forecasts for negative growth rate are estimated to be between -3.9% (the most optimistic) and -9.6% (the most pessimistic). Therefore, the extent of the crisis and the duration of recovery depend on strategies implemented by the Mexican government at its three levels [15]. The Coronavirus crisis is projected to be a considerable economic crisis and the greatest challenge since the Great Recession. Unlike the 2008 crisis, it is not in the financial markets, but is now in the real economy, consisting of companies, mainly SMEs and their workers. Demand is expected to affect durable goods more than non-durable products, especially the manufacturing sector [4].

One characteristic of the crisis is that people have been confined to their homes. The population is trying to determine the best way to protect themselves and their loved ones. Many are fearful of losing their jobs or work around people who may be infected. Each country has adopted different actions to manage stress at work and supports its citizens in different ways [13]. Right now, we are in the hands of the decisions that people and governments will be making in the coming weeks that will shape

the world for years to come. And not only health systems, but also the economy, politics, and culture. What world will we inhabit once the storm passes? Even when all of this ends and we survive, the world we live in is going to be different [5]. Mexico, like the rest of the world, is at a crucial moment, in which the response of government and society will shape the future of the country. The challenge is enormous for a country which, in addition to having great inequalities, has received COVID-19 in a situation of great economic fragility, with a fragmented health system, little investment and a government that has not shown itself able to understand the magnitude of this crisis [16].

Contagion in supply chains leads to direct supply shocks among the countries least affected by the pandemic. It is more difficult and expensive to acquire the industrial materials necessary for manufacturing, and the most affected countries sell these inputs at a higher price due to the shortage of units [4]. Ways of consumption and purchase are going to change. We are having supply versus demand shocks. Companies and individuals are changing their consumption habits as regards many products. The demand for non-essential consumer goods is falling, even without supply restrictions [3]. Even if small manufacturers close their businesses temporarily, they continue to face payments such as rent and bank loans, in addition to debts for supplies they had ordered before the pandemic [17]. Despite these difficulties, supply chains are not broken. The global pandemic has been an opportunity to integrate a new set of skills, strategies, and innovations to develop a new chain model, one that is more resilient, more flexible, and with much less dependence on the Asian market [18].

Supply chain risk management only applied to first-tier suppliers, leaving companies blind and vulnerable to crises affecting their lower-tier "invisible" suppliers. Reality shows us that all suppliers are significant, and interruptions at any level can cause disruptions throughout the chain [14].

4. SMEs and the COVID-19 pandemic

In a globalized economy, small and medium-sized enterprises (SMEs) are the main source of dynamism, innovation, and flexibility in developing countries, as well as in industrialized nations. The economic development and job creation of a country are a consequence of the proper functioning of SMEs [11]. The spread of the COVID-19 pandemic has affected various sectors of the economy, including the micro, small and medium enterprises, which are usually resilient when economic problems occur. Currently, SMEs are at the forefront of crises because many employees are limited to doing activities outside the home. The disruption of business activities reduces business performance. Therefore, companies make layoffs and threats of bankruptcy, or they are unable to survive [19].

SMEs face the liability of being small. If a company is small, it controls fewer resources, which makes it more vulnerable to internal and external events, such as the resignation of an employee, a decrease in its finances, a reduction in demand, or a global economic crisis. [8]. Small businesses depend on the intelligence and ability of the owner to run them properly. The owner is a fundamental part of the organization, can develop the supply chain, alliances, performance indicators, and business vision [11].

Survival is difficult for small businesses, even under the best of circumstances. SMEs have limited cash and few reserves. They generally do not have access to credit or capital markets. A temporary interruption can mean the closure of the business. It is not surprising that the restrictions imposed by governments to combat the spread of the pandemic have become a risk for many of them [17]. The effect of the coronavirus on the business activities of SMEs around the world is tremendous. Governments have to put strict policies in place to curb the disease. These decisions cause challenges for SMEs such as cash flow, closure of the operation, dismissal of workers, changes in business strategies, and the search for new sources and opportunities [2]. In recent weeks, purchases of cleaning products have increased, and the population is recycling more garbage by staying at home. At the same time, they accumulate goods, make panic purchases, and some leave the cities to go to the countryside [13].

SMEs have to respond on multiple fronts. They must work to protect the safety of their workers and take care of the operations they perform. They are having an impact on the supply chain and need to move forward in these times of crisis [20]. The most common concern in SMEs we heard was a need for assistance in covering fixed operating costs: rent and mortgage payments, but also utilities and insurance [17]. Micro and small companies are less productive than large companies and have few financial resources to face this crisis. At this time of slowdown and possible loss of jobs, they must be prioritized as compared to large corporations. Forced to close in order to contain the contagion of COVID-19, some companies have announced layoffs and seek a way to reduce their costs during the suspension of activities [7]. It is essential to take action to ensure that fewer jobs are lost and to distribute subsidies to companies and workers to protect the most vulnerable.

The virus does not discriminate, but its economic impact does, so it is necessary to guarantee policies that have the following three priorities:

- Guaranteeing minimum income for the people most vulnerable to the crisis.
- Providing employment protection.
- Encouraging consumption, demand, production, and economic growth.

In Mexico, we had a fragile economy and a low-budget health system even before the health emergency caused by COVID-19 [16]. The President of the Republic, on two different dates, presented the list of welfare programs that minimize the economic and social effect of the pandemic. On April 23, a decree establishing austerity policies for the Secretariats and entities of the Republic until December 31, 2020, was issued [15]. In the case of SMEs, they receive benefits with the following points:

- a) 3 million credits are granted to individuals and small family businesses.
- b) Two million jobs are created.
- c) Fuel prices and taxes are not to be increased.

The government has a very important role in disaster recovery. It manages aid and assistance programs, which provide a basis for

a faster recovery, and the economy should return to normal [21]. Predictions show us that the contagions will continue. It is the government's responsibility to have an adequate policy for the containment of COVID-19, in addition to ensuring that the country has better precautionary measures and preparations before the reopening of its borders [22].

The job loss trend from the first case of COVID-19 detected in Mexico on February 29 is as follows [15]:

- As of March 13, there has been a drop in the number of jobs covered by the IMSS (Mexican Institute of Social Security).
- 346,878 jobs were lost from March 13 to April 6, of which 62% no longer have access to health services, and the remaining 37.7% lose access after seven weeks.
- 47.5% of the jobs lost from March 13 to April 6 occurred in medium-sized companies with 51 to 500 workers.

5. SMEs Disruptions.

No supply chain is infallible; they are subject to different factors that affect their regular operation. Among the possible reasons for this are the closure of plants, the lack of supplies, a lack of information, unforeseen situations such as natural disasters, and epidemics that not only curtail supply but also affect demand [23]. There is a great difference between large companies and SMEs. Large companies have plans for almost all eventualities. It is commonly accepted that SMEs can be disproportionately impacted by extreme events [24]. With technological advances in information processing, there is a greater dependence on networks in supply chains. Companies must incorporate actions to mitigate risks, guaranteeing the safety of the chains and being able to compete effectively [25].

Organizations must be flexible to change. They need to have strategies as to managing the volatility, and ambiguity of the world. Knowing how to manage business risks improves resilience and can be useful for any organization. By knowing the most significant risks, companies implement actions that allow them to act early [26]. The ISO 9001: 2015 standard explicitly addresses the identification and intervention of risks as a preventive mechanism of the management system. This norm helps eliminate potential causes, preventing their occurrence, and minimizing disruptions. Organizations must determine the risks and opportunities to fulfil the purpose of the quality system and thereby increase the trust and satisfaction of the interested parties [27].

Speaking of higher risks, we have to refer to the events of greatest danger for an organization, which are those of High impact / low probability. The reason is that such activities are unimaginable or of such rare incidence that they have never happened in recent memory, and they are not on the "radar" of risk managers. These so-called black swans are events that were thought impossible or that had never been imagined until they happened; experts mistakenly assume that the probability of a black swan is zero, when in fact it is not [28].

Any disruption has consequences on the performance of SMEs, whether in sales, production level, or profits. The authors divide disruptions into eight different phases: Preparedness, Disruptive Event, First Response, Initial Impact, Total Impact, Preparedness for Recovery, Recovery, and Long-Term Impact. The

measurement of business resilience to disruptive events should be carried out before the event so we can act more quickly and with distinct guides to the problem [29]. For successfully managing disruptions, both pre-disruption and post-disruption approaches are necessary and need to be taken into consideration [30].

Disruptions allow organizations to have experiences that help them to have answers to future problems. Analyzing an incident helps to identify lessons learned and to understand supply chain risks. In this way, future outages will be managed efficiently, and partners will have to collaborate to obtain better results [31]. In recent years, the manufacturing of companies has been disrupted by earthquakes in New Zealand, air traffic closures due to terrorism in France, and volcanic eruptions in Iceland. Researchers are concerned about the increase in disruptions of the supply chain and its implications [32]. Many SMEs cannot survive after a disaster, so ensuring their survival during and after crises is essential. Governments should also learn from past disasters [33]. On March 11, 2011, a great earthquake occurred in Japan and a tsunami that destroyed many houses and buildings. This event caused a 15% reduction in industrial production in the following months. Although the heaviest damage was on the east coast of the Tohoku and Kanto regions, companies in other parts of Japan were affected by supply chain disruptions [34].

Historically, many diseases, such as the plague, syphilis, smallpox, or influenza, have caused millions of deaths and caused panic in the world. In recent decades, the appearance of new diseases has created alarm and anxiety across the globe, affecting public health and the world economy. Countries with these problems must carry out inspections of all people at international airports, seaports, and land crossings [35]. In addition to human losses, epidemics threaten the free movement of people and goods in global supply chains. Contagious events almost always include medical and financial problems. They spread through human networks that are very often closely linked to supply chains. They affect several countries and multiple industries simultaneously. The weakest and least prepared companies are the most damaged [28].

Cholera in Peru, SARS in Vietnam, Ebola in Africa, and now COVID-19, which emerged in 2019 in China, are examples of global diseases that affect the economy of SMEs and cause fear among the population. The spread of the Coronavirus from China and its expansion to northern Italy, Korea, and the rest of the world, affects the industry in various ways. Mexican SMEs could be affected by the impact of the Chinese slowdown. Another risk factor is the possible shortage of products that affects the prices of many goods worldwide, so the Coronavirus is already considered a factor that Mexican companies have to pay attention to [36]. It is hard to imagine a world that is not changing because of coronavirus. The success of scientists, together with the political and social leadership, will determine the future. It is time to think about what we can do to help. It is a battle that tests our mutual responsibilities, our strengths, and our compassion [37].

Transportation risks are also a potential cause of disruption for SMEs in the supply chain. However, exporters (packers and wholesalers) are more vulnerable than other nodes in the supply chain [38]. Logistics is the engine of world trade; safety in the transport of goods appears as a critical element in its consolidation.

The World Customs Organization (WCO) developed a regulatory framework, to adopt the necessary measures to guarantee the integrity of transport throughout the supply chain against theft, piracy or terrorism [39]. In Mexican SMEs, the transportation of goods is a crucial element for the success of operations. Unfortunately, trucking theft has become a problem for entrepreneurs and a disruption for supply chains. According to the report of the Executive Secretariat of the National Public Security System [40] from January to September 2018, more than 8,727 thefts of carriers were registered, which meant an increase of 4.10% compared to the previous year, and 87% of these events were violent. These facts directly affect the competitiveness of SMEs, and managers must think about how to deal with it because now it is a risk every time their trucks hit the road to deliver to their customers.

The first research on the impact of natural disasters on business appeared in the 1980s. The first was carried out in the United States after the 1989 Loma Prieta earthquake. SMEs are more vulnerable to natural disasters and can be affected in many ways. There are also interruptions related to public services such as electricity, water supply, sewage, lack of fuel, transportation, and telecommunications. Failures in public infrastructure make companies look for alternative logistical support that allows SMEs to function after disruption of this type [41]. Risks from natural disasters in Mexico are many; the National Center for Disaster Prevention (CENAPRED) [42] mentions in its report for 2017 that the estimated damages and losses amounted to 73,862 million pesos, a figure that was 400% higher per year, which impacted 0.34% on GDP. The phenomena that most impacted the country were those of a geological type, with an earthquake of a magnitude of 7.1 degrees on September 19, representing 90.7% of the losses, and hydrometeorological events caused by cyclonic activity in the Pacific and Atlantic, representing 8.2 % of disasters. Manufacturing SMEs that were close to the epicenters were affected directly or indirectly without being able to do anything about it.

It may be that each of the causes that initiates a disruption is unique. Still, they may have some aspects in common, so that understanding them helps orient collective action towards efficient and effective situations. What is lacking for SMEs to remain is to create conditions for permanence, growth, and transformation into mature companies [43]. These different causes are similar to what happened on January 19, 2019, in which teachers from the Mexican state of Michoacán blocked in six different points and for more than eighteen consecutive days the railroad tracks that connect the main ports of the Pacific: Lázaro Cárdenas and Mazatlan. Eleven states of the Republic were affected, and results included 252 stopped trains, 10 thousand immobilized containers, and 2.1 million tons of cargo affected, leaving many SMEs without supplies for several days [44].

Many lessons can be learned, but one of special concern is that most companies fail to recognize high-impact risks and as a consequence are not able to respond adequately [45]. After a disruptive event, companies must react and control the situation to stop the effects of the disruption as much as possible, and preserve the business structure and the most valuable assets [46]. Disruptions usually occur suddenly, and their impact is

experienced over a long period, requiring much effort and sometimes the help of others [33].

The design of a risk management strategy is the key to a well-functioning value chain. This strategy must identify the potential sources of risks and the appropriate actions to prevent them or reduce the impact of a disruption. As long as the risks are better known, entrepreneurs can identify and prioritize actions to have greater resilience, sustainability, and profitability [47]. SMEs face constant risks that negatively impact all areas, causing losses and endangering their survival in the market. Risk management in the different stages of an SME supply chain should not be an isolated program, but part of the business strategy. The magnitude of the efforts required to control them will depend on the complexity of the operational activities and the size of the company. Most of the time, Small Business owners do not pay attention to this issue because of their company's success in the market.

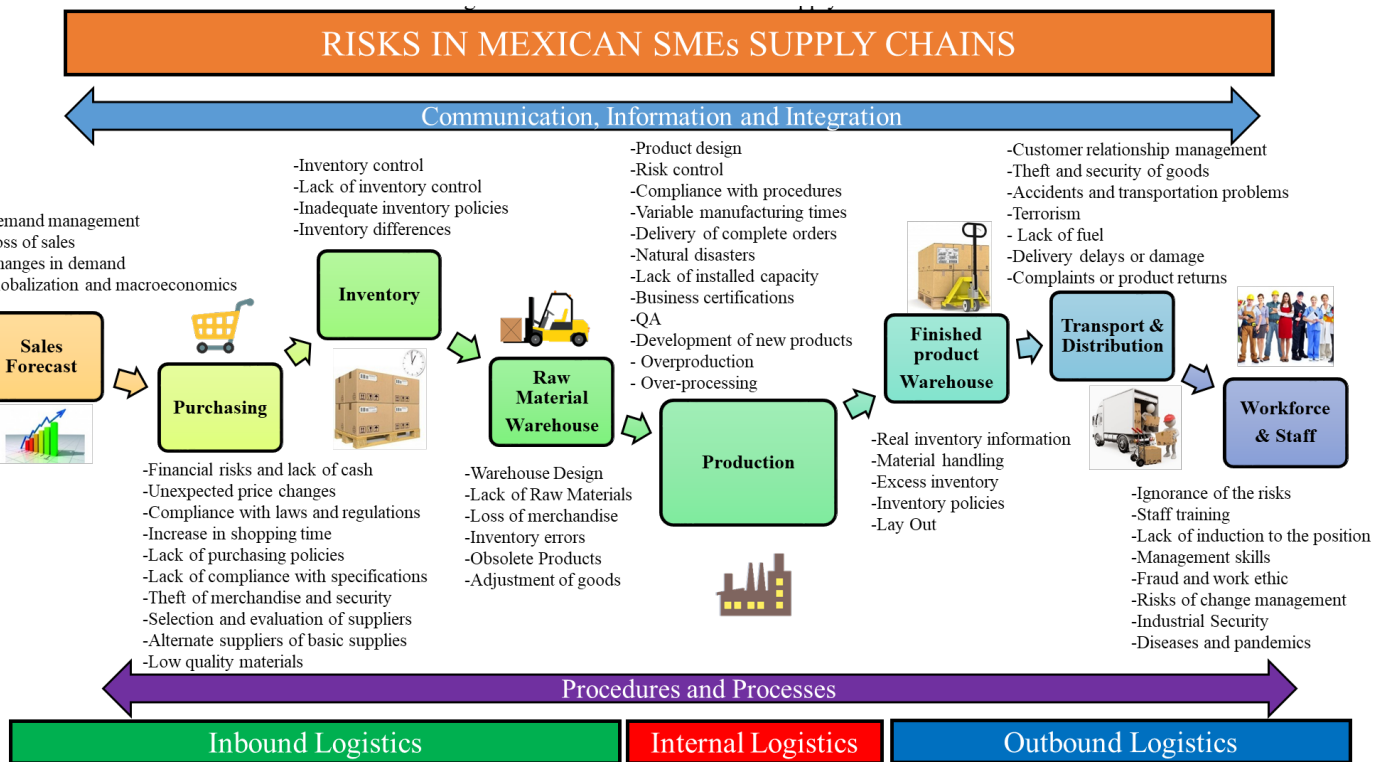
Risks are interconnected with each other. For example, factors such as natural disasters that affect the supplier increase the producer's risk of not receiving the raw material he needs. Logistics operators can be affected by lower demand, which translates into wasted production capacity with lower sales, increasing their risk of liquidity. Finally, distribution and transportation can be affected by the need to lower their inventories. It is essential for the operation and performance of SMEs' supply chain, to develop management strategies that identify the risks to which they are exposed, their probability of occurrence, and the effects they may have in a disruption such as COVID-19. In (Figure 1), a summary of the risks found in the literature review of each stage of the supply chain of SMEs in Mexico is made. The risks were classified into three areas: Inbound Logistics, Internal Logistics, and Outbound Logistics. In this way, it is easy to identify where outages may occur and take the necessary precautions.

6. Resilience in SME's in times of COVID-19.

In recent decades, resilience has become globally significant as the ability of a system to respond to change and continue to develop. This term has been used to describe and explain various life situations in different disciplines, and resilience is something that must be developed in the ecosystem, in humans, and therefore in organizations and specifically in supply chains [48]. The need for an "Antifragile" property is an imperative to ensure the business continuity and future success of SMEs in times of disruptive events. This concept originated from philosophy, and

builds upon the Black Swan Theory, which describes unexpected and unpredictable events having a high impact in a world in which everyone believes that only white swans exist [9].

The word resilience comes from the English language and expresses the ability of a material to regain its original shape after being subjected to high pressure [49]. In the business world, resilience is understood as a crisis management and business continuity, as well as responding to all types of risks that organizations may face, ranging from cyberspace threats to natural disasters and many others [19]. Supply chain resilience is the adaptive capacity to prepare for unexpected events, respond to disruption, and recover from them by maintaining continuity of operations at the desired level of connectedness and control over structure and function [38].



The elements to measure business resilience are the adaptive capacity of the company, vulnerability, probability of occurrence of disruption, time, level of recovery, commitment, and responsibility of the supply chain [50]. Companies seek to become stronger and find the formula to continue despite adverse circumstances [46]. Therefore, they assume two primary missions:

- 1) Implementing strategies to face and overcome the adverse effects produced by those unexpected situations and,
- 2) Developing protective barriers to face eventual future circumstances.

Resilient companies are those that, in times of constant change such as economic-social crises or business globalization, perform better than others, and obtain benefits from adverse or unforeseen circumstances. Some companies are expected to emerge from intense crises, while others could weaken or even go bankrupt. In all these possibilities, those organizations that maintain a tendency to renew and perform better during the crisis are resilient [51]. An organization with these characteristics has a set of capabilities aimed at carrying out robust actions in the face of a specific condition generated by unexpected and powerful events that endanger the survival of the organization [49]. The majority of business resilience risks come from internal factors in the supply chain, thus requiring strong collaboration. The level of resilience risks and barriers varies in SMEs according to their size [19].

Many firms are struggling to survive during the pandemic, which focuses attention on the apparent failings of their business models and on how to build greater resilience in the future. There are new business opportunities [3]. Many questions that we could ask ourselves about the rapid closure of companies due to the pandemic have arisen. For example, how can we take better care of employees in such situations? Why weren't companies ready?

How can companies and countries use this situation to improve their competitiveness? [13].

Diversified supply-chains across companies and geographies significantly reduce exposure. If firms are tied to single suppliers, the risk from disruptions should be carefully measured and contingency plans considered [14]. In most companies, inventories are stored for two to five weeks, with no additional deliveries. Each company has a different supply-chain strategy and ensures their delivery times. If the components do not arrive or their delivery is interrupted for a longer time, production stops. A resilient supply chain must align its strategy and operations to adapt to the risks that may affect it. Therefore, networking with providers is the key to resilience [20]. An SME that wishes to be resilient must carry out the following actions: recruit resilient personnel, define clear and precise positions and functions, have business strategies known by all members of the organization, establish quality systems, have an organizational culture with solid values, be attentive to economic trends, review consumer trends, and promote initiative and creativity among its staff [43].

Business certifications ensure that a business meets the requirements of governing industry standards. The pursuit of these certifications reinforces the commitment to continuous improvement, thus reducing risk in production and demand disruption and reducing trade barriers for firms. There is a positive impact of business certifications on firms' resilience. Certifications could be Hazard Analysis and Critical Control Point (HACCP), Good Manufacturing Practices (GMP), ISO 9000, among others [38]. Some Resilience Models have been used in SMEs worldwide. One of them is: "Healthy and Resilient Organization, HERO", a heuristic model that describes the functioning of healthy and resilient organizations. It is made up of three elements: Healthy organizational resources and practices, Healthy

employees, and Healthy corporate results. This model was created from the global context that refers to organizations that survive and adapt to crises, becoming more robust in the face of these negative experiences [52]. When evaluating risks in a Supply Chain, the SCOR (Supply Chain Operations Reference) reference model provides a common language in the areas of planning, manufacturing, distribution, and return. It includes a methodology that allows an analysis of the operations of the chain, helping them communicate company information, measure performance, and set improvement objectives. Being a reference model, it does not have a mathematical description or a specific method. Its usefulness lies in providing a standard of chain terms and processes to a model using performance indicators [25].

Using information technology during extreme interruptions can help people stay connected and ease their work situation. Lessons from the use of information technology by SMEs to support business continuity during COVID-19 help us minimize some of the risks of information flow throughout the supply chain [53]. The normality of December 2019 is not going to return. In many countries, the concept of omnichannel networks accelerated. People now work, buy, spend, and see their families digitally. Unexpectedly, COVID-19 has done more for digital acceleration than possibly anything seen in the last decade [18]. COVID-19 showed the weaknesses of the business model that existed. Some of the changes that are being experienced are: People involved in the physical distribution of goods can become infected with the virus and stop global value chains. International air travel is limited, but most ports and sea routes remain open. Social distancing and controls for the flow of people create delays. Companies and governments have a shortage of critical goods and services because foreign suppliers are looking for their products with local customers [3].

Some of the problems of lack of supply thanks to COVID-19 indicate that if there had been a previous study on these issues, many problems could have been foreseen: A lack of laws to control price increases due to a crisis; mapping the supply chain and ensuring certified suppliers and products. Government procurement of health products. International supply assessment, trade barriers, and market capacity [54].

Owners/managers must make the right decisions, which promote flexibility in SMEs and the ability to react rapidly in their markets. Another opportunity provided by COVID-19 refers to the possibility for continuous innovation through the development of new or better products, process and business models suggested by employees, customers and partners after the emergency. Also, SMEs could be redesigning and defining new strategies to meet the rising global demand for disinfectants, medical masks and other anti-Covid19 products [9].

In June the SoyLogístico Association of Mexico [55] shared some recommendations based on the experience of its partners and executives from different supply chains to return to the new normal. They issued a document called: "Ten Operational Tactical Actions towards the New Normal", in which some of the points that can support the logistical resilience and continuity of operations in Mexican SMEs are the following:

- Define health and safety protocols so that employees work safely.

- Analyze demand, align supply by adjusting sales and financial plans.
- Analyze the financial situation of the company, and also eliminate or reduce inventories.
- Review supply, and return to local suppliers instead of global suppliers.
- Define an operating strategy throughout the supply chain.
- Analyze the distribution of merchandise, review delivery restrictions, and ensure the requirements of distribution centres.
- Analyze the transport of goods and last-mile deliveries.
- Guarantee clear and continuous communication with collaborators, clients, suppliers, partners, and authorities.
- Have a leadership focused on the achievement of objectives and results of collaborators, seeking to "humanize" operations.
- Promote savings plans throughout the chain and define actions to digitize activities.

7. Conclusion

World political and economic scenarios in this century are leading us to collapse. Economic downturns, competition, corrupt governments, damage to the environment, natural catastrophes, and now global pandemics are leading the world into uncontrolled free fall. Disruptions are not only increasing but are also more potent; the possibility of bankruptcy or closure of companies is escalating. Resilient thinking is not a game; it is a life-saving phenomenon for organizations large and small [56]. Although viruses like COVID-19 have the potential to do much damage, they are very simple invaders. When a large number of them enter our body, our defences go into action to attack them and keep the person alive [12]. The global pandemic is striking Mexican supply chains, more than ever before, communication, timely information, innovation, best logistics practices, and the resilience of the most robust links help them to resist this time of crisis.

In the short term, the effects of the Coronavirus on the global economy are substantial. The temporary suspension of production and supply chains has also had an impact on the evolution of various financial indices. If the adverse effects of the epidemic persist, countries must adopt fiscal, monetary, and economic actions that support consumers and small businesses that are most affected. The COVID-19 emergency reminds the world that it must be prepared for a crisis with risks to the health of the population [6]. It was clear that SMEs' resilience requires partnerships and cooperation among firms, government, and other private organizations. It cannot be achieved by the business entity alone or by the government on its own [41].

In current conditions where demand is changing and customers are more interested in digital commerce, having the right information technologies is important for the sustainability of company operations. SMEs must make efforts to be part of the digital economic ecosystem and use social networks to promote products or businesses. By promoting their brands effectively, they create online communities, knowing the preferences of their

customers effectively and directly [57]. In these times of staying at home, consumer behavior has changed. Consumers are becoming more and more comfortable with digital technology and digital commerce. SMEs need to invest in data analysis technologies in order to know their customers effectively and offer them what they need [58]. The time has come for Mexican micro, small, and medium-sized companies to think about starting operations online. This option is the only way to guarantee their survival and development in the future. According to the Mexican Online Sales Association (AMVO), electronic commerce will grow by 59% due to the pandemic. If the benefits of electronic commerce are expected to be real in Mexican companies and consumers, some challenges have to be overcome, especially in logistics. The first is a lack of capacity of logistics infrastructure under normal conditions, and the second is the issue of the pandemic because demand continues to exceed expectations [59].

The Mexican government is in a race against time to implement a solid economic rescue plan. If it is not successful, the recession will be complicated, and access to financial markets will be restricted. The signs of President López Obrador are disturbing, placing the social and work life of citizens whose life has been altered by the pandemic at risk [16]. The priority must be to support individuals and small businesses urgently. Large companies are able to assume part of the cost of the crisis, especially those that are in sectors that may benefit. Companies with direct links to high government positions should be prevented from receiving financial support [7].

The challenges resulting from the COVID-19 are not disappearing quickly, and government policies for assisting small businesses and managing a return to some version of typical activities continue [17]. A global effort is needed for the production and distribution of medical equipment, test kits, and respirators. Rather than each country trying to achieve this locally, a coordinated effort could accelerate production and ensure that life-saving equipment is distributed fairly [5]. Recent articles debate what the future holds, considering questions such as how long social distancing needs to continue, the social and political consequences of lockdown, and implications for supply and demand chain structures [54].

Future expectations are anyone's guess. The COVID-19 crisis has consumers and companies in continuous uncertainty [4]. Articles published in the popular press or social media discuss how the crisis is changing the way we live and work, and this is driven mainly by small and medium-size organizations that create innovative solutions for problems. SMEs have a unique role in the macro-environment when it comes to creating a path forward [8].

Many changes have affected the supply chains of manufacturing SMEs in Mexico. One has to discover new ways of managing them if one wants to survive in the modern world context. The delivery times and availability of materials and goods are changing due to COVID-19 because no one is manufacturing them. The risks of diversifying with more suppliers globally or developing existing suppliers have to be considered. SMEs are increasing their inventory levels to face future disruptions. Electronic commerce is a new way of selling their products, forcing SMEs to strengthen electronic platforms and their information systems. The distribution, reception, and

delivery of orders must be reinvented, so as to avoid any risk when inspecting or arranging products in the warehouses. What seemed unlikely to happen is happening now, and logistics managers, company staff, and researchers on these issues have to reinvent models to make companies resilient. It is necessary to consider every risk encountered throughout the supply chain.

Conflict of Interest

The authors declare no conflict of interest.

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