El desarrollo de nuevas herramientas y técnicas para mitigar el impacto económico de las pymes en los Altos de Jalisco

The Development of New Tools and Techniques to Mitigate the Economic Impact of SMES in Los Altos de Jalisco

O desenvolvimento de novas ferramentas e técnicas para mitigar o impacto econômico das PMEs nos Altos de Jalisco

Luis Aguilar Carvajal
Universidad de Guadalajara, México
laguilarc@cualtos.udg.mx
https://orcid.org/0000-0001-6362-6906

Gabriela Villanueva Lomelí
Universidad de Guadalajara, México
gabrielav@cucea.udg.mx
https://orcid.org/0000-0002-3506-6515

Guillermo José Navarro Del Toro
Universidad de Guadalajara, México
guillermo.ndeltoro@academicos.udg.mx
https://orcid.org/0000-0002-4316-879X

Resumen
El presente trabajo ofrece un panorama de la manera en que, ante la contingencia de covid-19, las pequeñas y medianas empresas (pymes) dentro de los Altos de Jalisco, México, lograron mantener un equilibrio en la mayor medida posible. Se revisaron técnicas y herramientas para que las empresas pudieran detectar cuáles son las fortalezas y debilidades tanto internas y externas para prevenir o corregir desajustes en sus diferentes sectores.
Asimismo, se presentan algunas de las herramientas más utilizadas por estas empresas, con las cuales lograron construir métodos eficientes para mitigar el impacto económico dentro de las mismas.

**Palabras clave:** covid-19, inteligencia de negocios, pymes.

**Abstract**

This paper offers an overview of how, in the face of the COVID-19 contingency, small and medium-sized enterprises (SMEs) within Los Altos de Jalisco, Mexico, managed to maintain a balance to the greatest extent possible. Techniques and tools were reviewed so that companies could detect the internal and external strengths and weaknesses to prevent or correct imbalances in their different sectors. Likewise, some of the tools most used by these companies are presented, with which they managed to build efficient methods to mitigate the economic impact within them.

**Keywords:** COVID-19, business intelligence, SMEs.

**Resumo**

Este artigo oferece uma visão geral de como, diante da contingência da covid-19, as pequenas e médias empresas (PMEs) dos Altos de Jalisco, no México, conseguiram manter o equilíbrio na medida do possível. Foram revisadas técnicas e ferramentas para que as empresas detectassem os pontos fortes e fracos internos e externos para prevenir ou corrigir desequilíbrios em seus diferentes setores. Da mesma forma, são apresentadas algumas das ferramentas mais utilizadas por essas empresas, com as quais conseguiram construir métodos eficientes para mitigar o impacto econômico dentro delas.

**Palavras-chave:** covid-19, inteligência de negócios, PMEs.

**Fecha Recepción:** Junio 2021  **Fecha Aceptación:** Diciembre 2021
Introduction

The 2019 coronavirus disease (covid-19) pandemic has definitely tested the ability of small and medium-sized enterprises (SMEs) to deal with a crisis on a global scale. Among all the bad things, it gave SMEs an opportunity to realize what they were doing wrong and what could be changed to avoid accentuating the economic depression. Indeed, for those who noticed that they could improve their products, their service or perhaps their business, endless ideas arose that allowed them to avoid the economic ravages, at least, in the worst case, partially; however, there were also many entrepreneurs who were not aware of such a situation.

The covid-19 pandemic further altered the deterioration of many economies worldwide, starting with Asian countries, where the outbreak was a wake-up call for the rest of the world. Despite the fact that global trade had already had some declines since the 2008-2009 crisis, the covid-19 contingency was something that did not take into account the size of a business or its economic or political power. The world stopped, and a large part of the companies could not cope with this situation. This spread throughout Europe, North and South America, Africa and Oceania.

To know the impact of the covid-19 pandemic, it is enough to bring some figures: from its beginnings to the present, 504,818,732 total cases have been registered, and a total of 6,199,408 deaths. Now, according to vaccination records, there are a total of 11,181,357,071 vaccinated (Center for Systems Science and Engineering at Johns Hopkins University, 18 de abril de 2022).

In medium and large companies, there is normally no preparation or contingency plan for a situation of this magnitude, since the daily problems experienced by SMEs are different from what is experienced within a pandemic or from the consequences brought by the strong stumbling blocks of the global economy. Therefore, in the face of the magnitude of an economic, social and political crisis such as that of covid-19, creativity and ingenuity to be able to develop different strategies was and is a fundamental part of coping with the functioning of SMEs (Shared Value, June 17, 2020).

Currently, the creation of micro-enterprises not only contributes to reducing unemployment and obtaining subsistence income for many families, but also facilitates the participation of women in the creation and management of their own business and allows
university students the possibility of self-employment and job creation (Pomar, Rendón y Hernández, 2006).

**Theoretical framework**

In the state of Jalisco, Mexico, in January 2020 the unemployment rate was 3.28% below the country average. In addition, an income 23% lower than the cost of the basic food basket was recorded (National Council for the Evaluation of Social Development Policy [Coneval], 2020).

According to Coneval’s own poverty measurement (2018), at the time of the declaration of the characterization of covid-19 as a pandemic by the World Health Organization (WHO) (March 11, 2020), in Mexico, and particularly in Jalisco, there was no capacity to attend to the population in terms of medical services, jobs that covered the needs of food, basic services and decent housing.

During the period October-December 2020, the population aged 15 and over available to produce goods and services in the country was 57.6 million (60.4% of the total), when a year earlier it had been 56 million (59.7%). The increase of 1.6 million people is a consequence of both demographic growth and the expectations of the population to contribute or not to economic activity. While 77 out of 100 men in these ages are economically active, in the case of women, 45 out of 100 are in this situation (National Institute of Statistics and Geography [Inegi], 2020).

According to the Government of the State of Jalisco (sf), in 2013 99.5% of the companies installed in Jalisco were SMEs, which implies that this type of company represents the main source of employment for the people of Jalisco: it generates 7 out of 10 jobs.

The vast majority of these companies are made up of people who, not having had an opportunity in the industrial sector or not having found a job, not having found a job with a decent and sufficient salary or coming directly from the economically inactive sector of the population, they found an alternative in self-employment. That is why, in most cases, they are inclined and take risks to create their own business.

This is how Cruz, López, Cruz and Meneses (2016):
Micro or family businesses that are created for economic reasons, since being limited with their income and facing fixed expenses, they have to venture into this business model, even many times simply because they do not want to hire for the low wages that they offer themselves as employees, countless entrepreneurs who, without having an intuition of how to manage a business, put their plan into action, although with certain consequences that these businesses generate when they are not adequately prepared in administration, direction and control of these (p. 331)

Now, it is necessary to mention that everything starts from a specific point and that the problems of a company can be divided into two aspects: internal and external. It is vitally important to pay close attention to the current symptoms, however minimal they may seem: a lack of primary resources, lack of personnel, loss of internal communication, lack of strategies, as well as accounting and financial insufficiency; more damage is having forgotten the purpose for which the corporation was created.

Failure to meet commitments, responsibilities, lack of factors of production and mismanagement lead to no other path than failure. But all is not lost, there are institutions that manage to get ahead in the face of crises, manage to adapt to their environment and primarily cover a consumer need. In the end, this, the consumer, is the one who has to be satisfied.

The figures mentioned above explain why Jalisco has a lax economy and little contractual ability, which causes one of the first failures in the system that results in the recession and the closure of many companies. According to statistics from a few years ago, Cruz et al. (2016) mention the following:

[Inegi] identified in the 2009 census the following reasons why micro and small businesses do not grow (...). More than 68.2% of these businesses are managed informally, so it should be considered that MSMEs are limited by large companies, but this is mainly due to the lack of equity that exists, although these also include some limitations that are not allows them to be highly competitive by observing their main weaknesses:

- They find it hard to get clients.
- They are inclined to hire unskilled workers.
- There are few sources of financing.
• They find it hard to get committed suppliers.
• Get customers over time and market your products to the customer.
• They do not carry out previous market studies.
• They do not distinguish between what is quality and price.
• They lack customer service strategies.
• A lack of knowledge of managing marketing strategies. (2016, p. 331).

This type of business or manufacturing usually finds limitations either in marketing their products or in presenting a service, and they have not thought about the possibility of being complementary companies to others (Hernández, 2005, cited in Cruz et al., 2016, p.333).

Other problems that may arise are:
• Mismanagement of an adequate profit margin when negotiating.
• Lack of intuitive ability in dealing with some suppliers, customers or company personnel.
• Constant innovation is avoided by not changing existing methodologies (fear of the unknown).
• There is mistrust of immersion in the technological field due to lack of knowledge.
• Not being able to lead an organization, therefore, not taking risks.
• Lack of organization, management, management and use of the resources obtained.
• Few staff willing to combine with the company.

**Developing**

When the covid-19 pandemic emerged, businessmen had to limit their diversification even more, since the population required a greater supply, yes, but in the production and marketing of basic products; essentially, for the health and food sector. While the more elaborate products or those that required a higher production cost had to reduce their amount of elaboration in order to provide a better alternative.

As time went by, society adapted to a somewhat different lifestyle. Indeed, the lives of many people changed in some aspects, there was an acceleration in the business, educational and health sectors, which led to the use of new platforms and the adoption of a new environment of coexistence, teaching and work.
As a result of this event, the federal government implemented some methods for companies to reactivate themselves, in addition to carrying out standards in the health regulatory framework. It is worth noting the economic support provided to different entities of society. These tools include:

- Advance the support granted by the Welfare Secretariat.
- Microcredits were created to help companies affected by Covid-19: a loan of 25,000 pesos and an interest rate of 6.5% and three months of grace (Banco de México [Banxico])
- Support was provided for domestic workers and independent entrepreneurs.
- Regarding state and municipal support, up to now 1.95 billion pesos have been allocated through different programs, such as the Jalisco Covid-19 Plan, “Income Protection”, “Jalisco Protects You”, the “Strategic Project in Support for the Economic Reactivation of the Agricultural, Aquacultural and Fishing Sector” and Fuerza Mujeres.

Although many economic supports were offered, not all people had or have access to them. Due to this, some SMEs went bankrupt; others preferred to close because they were not formalized, and still others decided to adapt to change, relying on various marketing tools and technology, and meet the new needs of society.

As has already been seen, SMEs have a lot of economic relevance in Mexico, so they carry an enormous responsibility, even more so in the context of a pandemic. Currently, SMEs need to be up-to-date in different areas in order to be competitive, such as technology and marketing (Durán, Urzúa and Flores, 2015).

With these tools, they must develop new techniques and strategies, seek to attract the client in terms of their needs, but above all, constantly update themselves. In this way, obtain the resources and income that the company requires and at the same time leave a good taste in the customers’ mouths.

Every time SMEs face a more closed, more difficult and demanding market, there is more and more competition, since they participate both in the internal and external markets. Even so, they create business-to-business relationships and continue to be recognized for their ability to create jobs. Worldwide, they are the predominant companies (Ankomah, Abratt, Bendixen and Pitt, 2007). And yet:
The productivity of large modern companies grew since 1999 at an average annual growth rate of 5.8%, traditional companies decreased their productivity at a rate of 6.5% per year. In other words, SMEs face the big problem of having low productivity and they have not had the expected impact on our economy. (Sánchez, 1 de marzo de 2018, párr. 3).

The problem is that these companies do not have the strength or capacity to face the great challenges that the global economic order presupposes; however, there are processes that allow better understanding of the customer and the market, which are the key to improving economic performance, consumer loyalty and differentiation from the competition (Durán et al., 2015). Now, Sánchez himself (March 1, 2018) emphasizes the following:

It is important that they improve in our country because empirical evidence points out two fundamental and distinctive characteristics of SMEs. In almost all countries these companies have a very high participation in the creation of wealth. They are undoubtedly the oldest economic units and from them the modern productive organization begins. (párr. 4).

Once as a company you know the needs of the market, you can create through tools, methods so that customers have greater accessibility to products and services. Very little percentage of small and medium-sized companies decided to invest in marketing appropriate to these needs through social networks, web pages or sales platforms; those that did expand their market and improved their distribution channels (Pérez, 2004).

Along these lines, Nieto and Velásquez (2004) propose the business modernization model, which works systemically and strategically on the key components of the company:

- Strategic direction.
- Market management.
- Financial management.
- Operation management.
- Human management and organizational culture.
- Environmental management.
- Knowledge management.
- Organizational development: structure and culture.
- Communication and information.
Tools implemented internally by SMEs, based on their needs to mitigate the impact of the pandemic

In addition to the support and tools implemented by the government, SMEs developed various tools that helped mitigate the economic impact caused by the pandemic to continue generating liquidity and not remain stagnant:

- **Home delivery**: seeks to reach consumers safely without the need for them to go to the facilities to obtain the products they want, on the contrary, the products arrive at the door of their homes. Thus, they are given the option of a more comfortable and simple service to make their purchase.

- **Payments through bank transfers using a QR code**: consists of making payments for the products purchased through bank transfers or by scanning a QR code to avoid physical contact with credit, debit or cash cards.

- **Home office**: implements the development of work practices and their management through electronic means from home to safeguard the health of its employees. A way was sought for the employees, most of them, to work from the comfort of their homes and from there to comply with the same schedule that they had assigned for their day.

- **Reduction of visitors, diners or clients within its facilities**: this strategy seeks to reduce the number of people within the facilities of each SME and thereby achieve the implementation of a healthy distance, since with fewer people the space is less reduced, while giving the opportunity to go in person to consume the products or pick them up in person (Shared Value, 2020).

  - **Added value**: provide a differentiating value to the product and service compared to that offered by the competition and thus be seen as unique and attract more customers.

  - **Other techniques or recommendations aimed at the internal management of SMEs**:
    - Design and follow an explicit strategy that serves to guide or direct the company.
    - Have advice, support and a help network between businessmen and strategic contacts.
• Possess and cultivate an entrepreneurial culture with tenacity and self-confidence.
• Increase ethics in the company. If the vision and mission of a company are not founded, there is no delimitation of where it is going or where it intends to go.
• Increase savings to invest and be willing to share ownership in exchange for “opportunity cost” capital.
• Seek an efficient operation and reduce costs.
• Have a good knowledge of the market and offer quality products.

Recommendations aimed at the SME environment:
• Create or expand business networks and contemplate alliances. Reduce processing, costs and times
• Effective promotion of support and advice programs aimed at new family SMEs.
• Reduce financial costs.
• Create tax incentives to support new SMEs.
• Improve access to credit for SMEs and share the risk with the entrepreneur.
• Recommendations associated with the family dimension of the company.
• Promote the commitment of family members to the company.
• Achieve a correct separation of business and family issues (treating the company as a company and the family as a family).
• Objectively assess familiar candidates to join the company and only accept those who are capable of contributing significant value.
• Make life and career plans for family members who work (or intend to work) in the company, focused on their personal development and that of the organization.
• Create and develop government bodies that facilitate decision-making in the family organization and drive it towards professionalization.
• Periodically, build scenarios that allow predicting results (can we continue working together or should we think about a separation?).
• Carry out a correct planning of the succession and its adequate execution.
And it is that in the case of the new family SME in Mexico, it faces a large number of internal, external and family challenges. The latter can be lessened through adequate training, both of their managers in the first instance and of employees in general. On the other hand, the external challenges may diminish to the extent that businessmen and the Government work together in the definition and establishment of laws and policies aimed at the systematic removal of these obstacles. (Domenge y Belausteguigoitia, 2010).

**Surveys**

Taking into account the above points, a survey was carried out. It was applied to a sample of microentrepreneurs in . A total of 200 companies were selected. The survey was carried out virtually, to facilitate safe access and the reduction of concentration, as well as the emptying of the results. The meeting included the following questions:

- How much do you think the pandemic affected your SME's economic activities?
  - a) lot.
  - b) Fair.
  - c) Little.
  - d) It did not affect.

- Do you consider that the tools implemented by SMEs, such as offering home delivery, home office, etc., helped maintain a good flow of capital, mitigating the economic impact?
  - a) Yes
  - b) No

- According to the previous question, which of the following tools was the most successful for you in trying to mitigate the economic impact of your SME?
  - a) Home service.
  - b) Home offices.
  - c) Reduction of visitors, diners or clients within its facilities.
Graphs and results

Below are the graphs with the results, in order to know the economic impact caused by the pandemic and all those strategies that they put in place to keep their companies alive. The result of what has already been mentioned is shown below (figure 1).

**Figura 1.** Impacto a las actividades económicas por la pandemia a las pymes

Most SMEs were affected by the pandemic. Of the 200 people surveyed, 120 mentioned that it affected them a lot, while 50 were regular and 30 were slightly affected. Thus, most companies and families have experienced economic problems.

Along the same lines, 67% of those surveyed agree that the covid-19 contingency greatly affected the economic activities of their companies. On the other hand, 28% think that the offense was not so much. Continuing with this sequence, only 5% mentioned that the effects were very minimal. And finally, no one considered that the pandemic did not cause any damage or disruption. Basically, one way or another, there were modifications and changes.
Regarding the second question, 65% of those surveyed considered that tools such as home delivery and having a greater approach to technology were a great boost to continue carrying out their activities, while the remaining 35% did not implement those kinds of strategies.

It is necessary to highlight that the implemented tools were of the utmost importance to keep the companies on their feet. Many made smart decisions that worked well. Of the 200 people surveyed, 130 mentioned that the strategies put in place were functional enough and only 70 said the opposite.
Figura 3. La herramienta más eficaz aplicada por las pymes

![Diagrama de pastel mostrando las herramientas utilizadas]

Fuente: Elaboración propia

Regarding the last question, 50% implemented the home service, 20% took other actions outside of those mentioned and the remaining 30% carried out the work from home and with a reduction in their visits.

The implementation of the strategies allowed the company to manage its economic status in the best possible way. This is how endless activities were created that the company was not used to doing. Of the 200 businessmen surveyed, 100 promoted home delivery, 30 home offices, 30 reduced visits and another 40 developed strategies other than those mentioned.

**Discussion**

This new normality that is currently being experienced turns out to be one of the most emblematic and significant moments that humanity has had to suffer in recent years. Individuals and legal entities were affected to the same extent, both economically and socially and culturally. For this reason, the continuous and constant work in the face of this calamity was notorious and relevant in order to remain competitive, continue generating liquidity and thus continue with its commercial operations.
The opinion of 200 businessmen was only a panorama of what is happening to many companies in our environment. Housewives, students, professionals or employees are constantly searching for solutions, because having a job is not enough, and keeping them alive after a crisis is more challenging, but at the same time more enriching. Because that's how the world works, otherwise it doesn't move, it stagnates.

Companies had a great economic impact due to covid-19. Therefore, the vast majority took relevant measures in the face of this event. The main thing that the companies did was to evaluate possible risks in the future, decision-making was essential, the communication of positive information for employees, customers and suppliers was necessary, social responsibility increased, since drastic measures had to be taken regarding the health and hygiene, budgets and execution plans had to be adjusted, they had to be more attentive to the costs incurred in all areas of the companies, they carried out infallible sales strategies to boost their businesses, they transferred their physical stores to the Internet. In general, they had to adapt.

In this regard, Álvarez (2020) mentions the following;

The great challenge for companies today is to provide products and services under the new conditions if they want to survive. That is, modify its value propositions and that these are adapted to the current context, personalized, fast and intelligent where technology is an essential ally. Digitization today has become an essential requirement for the survival of companies. Companies must develop digital capabilities to continue operating uninterrupted in the context of the restrictions of the pandemic and then be able to maximize growth opportunities in the post-crisis (párr. 9).

Therefore, there are financial support programs, but in addition to seeking investment or capital, it is necessary for companies to seek data, reflections, guidelines, proposals and conclusions of what is happening in relation to this health crisis that affects everyone. The foregoing with the intention of not conforming only to a theoretical or conceptual exercise, but rather to develop a business tool that is of great use to companies. This innovation that we are talking about in times of pandemic disease should aim to go through the problem first to produce occupations with a view to managing a future scenario, still uncertain at various points (Pandelica, Pandelica and Diaconu, 2012).
For this reason, SMEs must seek through “creativity” the strategies that, implemented with the help of the appropriate technological tools, help them maintain their place in the labor market, without reaching such an early dissolution. It is important to mention that we are in a world where "commercializing" or "undertaking" successfully encompasses a very broad field of different economic-administrative and social sciences.

The life cycle of a product or service is ending before its maturity stage begins, and it is essential that SMEs carry out analyzes and projections of future events that may occur to prevent them from falling into decline without sufficient reason. Great projects arise from a small idea, and once they are put into practice, whether it is a company or a small business, the key is to attack a need or improve something, always with the specific aim of moving towards its main objective.

Conclusions

Human ingenuity in the face of disasters, accidents or calamities is amazing. Perseverance and the desire to want to move forward despite the circumstances are without a doubt the most effective tools of all, since, thanks to them, and with creativity, it is possible to obtain palpable solutions in a timely manner.

Once we are clear about the tools that we will use to mitigate the impact that covid-19 generated and generates, applying them in a strategy is most favorable. Having a contingency plan for the economic impact is key to cushion the damage caused to the liquidity of SMEs in the Altos de Jalisco.

The tool called business intelligence contains sequences of skills and resources that are intended to manage the extensive database that companies compile by carrying out studies that use and take advantage of the data obtained in a greater way. Therefore, it is necessary to exemplify the methods of business intelligence in companies (Tapia, Erazo, Narváez and Matovelle, 2020). As we have seen, the scenarios that occur in the pandemic in the different investigations show us at the conclusion of this investigation that important changes are coming in the ways of conceptualizing companies.

Most of these companies differentiate themselves from their competition by having a high degree of digitization, innovation, agility and resilience. It is important to indicate that most of these factors were built before the pandemic, which is why they were able to respond
better to it. However, the coronavirus has managed to promote a very enriching business model.

**Future lines of research**

Once the tools and strategies implemented in the face of the economic impact have been found and tested, we will always seek to maintain continuous improvement in these, whether or not there is a contingency, in order to ensure that, should a new calamity arrive such as the one experienced and is being living, already have the necessary prevention to get ahead in the face of any adverse situation in the different stock market, economic, social and basic areas.

Despite the difficult situation that Jalisco companies are experiencing as a result of the pandemic, there are some that, instead of experiencing a drop in their sales and facing financial difficulties, have rather become stronger. Soon we will be within reach of new methodologies that will revolutionize our context and we will be aware of their feasibility and implementation.

Also, an interesting research, which is being requested by many employers, is the "revolution of jobs." Many think that technology will replace man, the truth is that for millions of years man has been the gateway to new inventions and creations, but without a doubt the one that came to change the world was the Internet. In just a few years, the world became totally connected. Companies required faster, more efficient and simpler processes and the machines provided solutions to these problems.

But, certainly, what will happen to jobs? What will happen if professionals or institutions do not measure the power that a click currently has? It is such a big world, but still so unknown in most areas of learning. Technology does not wait, but, just as the internet was a great invention, it is important to know, what do I need to update myself? Why can't I continue with the same methodology as when I studied? Certainty and security are needed to make decisions and that can only be achieved by learning what the planet offers us every day.
References


<table>
<thead>
<tr>
<th>Rol de Contribución</th>
<th>Autor (es)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conceptualización</td>
<td>Luis Aguilar Carvajal</td>
</tr>
<tr>
<td>Metodología</td>
<td>Gabriela Villanueva Lomelí</td>
</tr>
<tr>
<td>Software</td>
<td>Guillermo José Navarro del Toro</td>
</tr>
<tr>
<td>Validación</td>
<td>Luis Aguilar Carvajal</td>
</tr>
<tr>
<td>Análisis Formal</td>
<td>Guillermo José Navarro del Toro</td>
</tr>
<tr>
<td>Investigación</td>
<td>Guillermo José Navarro del Toro</td>
</tr>
<tr>
<td>Recursos</td>
<td>Luis Aguilar Carvajal</td>
</tr>
<tr>
<td>Curación de datos</td>
<td>Guillermo José Navarro del Toro</td>
</tr>
<tr>
<td>Escritura - Preparación del borrador original</td>
<td>Luis Aguilar Carvajal</td>
</tr>
<tr>
<td>Escritura - Revisión y edición</td>
<td>Guillermo José Navarro del Toro</td>
</tr>
<tr>
<td>Visualización</td>
<td>Guillermo José Navarro del Toro</td>
</tr>
<tr>
<td>Supervisión</td>
<td>Luis Aguilar Carvajal</td>
</tr>
<tr>
<td>Administración de Proyectos</td>
<td>Guillermo José Navarro del Toro</td>
</tr>
<tr>
<td>Adquisición de fondos</td>
<td>Luis Aguilar Carvajal</td>
</tr>
</tbody>
</table>