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# **Journal of Business and SMEs**

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## **Presentation of Content**

In the first article we present, *Contingency features of manufacturing SMEs due to COVID effects. Southern Region of the State of Hidalgo, Mexico*, by SÁNCHEZ-TRUJILLO, Magda Gabriela, with ascription in the Universidad Autónoma del Estado de Hidalgo, as next article we present, *Analysis of competitiveness in Mipymes during the covid-19 pandemic, case of Tlaxcoapan, Hidalgo*, by TREJO-ENCARNACIÓN, Patricia, HERNÁNDEZ-GÓMEZ, Diana, AGUILAR-REYNA, Verónica and CRUZ-REYNA, Ariana, with ascription in the Universidad Politécnica de Francisco I. Madero, as next article we present, *MSMEs' investment as a competitiveness triggering factor* by AGUILAR-PÉREZ, Esmeralda, with ascription in the Tecnológico Nacional de México campus San Martín Texmelucan, as next article we present, *Influential factors in the growth of sales of MSmes* by ARMENTEROS-PIEDRA, Naisel Rafael, JIMÉNEZ-GARCÍA, Martha and ROMERO-GARCÍA, José Antonio, with ascription in the Instituto Politécnico Nacional.

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## **Contingency features of manufacturing SMEs due to COVID effects. Southern Region of the State of Hidalgo, Mexico**

### **Rasgos de Contingencia de las pymes manufactureras por efectos del COVID. Región Sur del Estado de Hidalgo, México**

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#### **Abstract**

Small and medium-sized companies represent a dynamic sector in the economy of the countries, due to the generation of jobs and what this impacts on the various sectors. The crisis caused by the COVID-19 pandemic generated company closures and therefore the loss of employment of thousands of people, among other social and economic aspects. Mexico presents a complicated scenario, both at the health, economic and social levels. Faced with this uncertain and complex context, there is the argument of the so-called new normal where companies must change their structures, ways of relating, buying and selling, managing human talent and investments, in order to adapt to the new market, particularly digital, remote, fast-paced and changing to stay in the market. Thus, the objective of this work is to analyze the impact that the COVID-19 pandemic produced on SMEs in the state of Hidalgo. The findings show that the interruption of productive activities, the provision of inputs, the drop in demand, access to financing affected.

**SMEs, COVID-19, Economic impact**

#### **Resumen**

Las pequeñas y medianas empresas representan un sector dinámico en la economía de los países, debido a la generación de empleos y lo que ello impacta en los diversos sectores. La crisis producida por la pandemia COVID-19 generó cierres de empresas y por ende pérdida de empleo de miles de personas, entre otros aspectos sociales y económicos. México presenta un panorama complicado, tanto a nivel sanitario como económico y social. Ante este contexto incierto y complejo, se tiene el argumento de la llamada nueva normalidad en donde las empresas deberán cambiar sus estructuras, formas de relacionarse, de comprar y vender, de gestionar el talento humano e inversiones, a fin de adaptarse al nuevo mercado particularmente digital, remoto, vertiginoso y cambiante para mantenerse en el mercado. Así, el objetivo de este trabajo es analizar el impacto que la pandemia COVID-19 produjo en las PYMES en el estado de Hidalgo. Los hallazgos muestran que la interrupción de actividades productivas, la provisión de insumos, la baja en demanda, acceso a financiamiento, afecto su productividad.

**Pymes, COVID-19, Impacto económico**

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## Introduction

The economic reality caused by the COVID-19 pandemic has taken an impressive turn, marking a turning point and a challenge for small and medium-sized enterprises (SMEs), the way they work and communicate has changed. SMEs in Mexico represent more than 97% of enterprises, establishing themselves as the potential equivalents in the development of employment levels (García, Valle and Canales 2021).

Unfortunately, it is these same companies that are having and will have to face the most difficulties in this health emergency, with a great risk of disappearing because they do not have a structure that allows them to adapt to changes compared to large corporations, they have lower income, less savings capacity, less access to credit and less access to technology resources (Aguirre, Ordoñez and Vázquez, 2021).

However, it is important to have a diagnosis of the impact of the pandemic on companies, their employees, and the market, in order to identify the challenges and decision making faced by those in charge of them.

Against this backdrop, the research question(s) guiding this study are as follows.

Have enterprises had to close down or make redundancies?

How many enterprises have used telework as an option to continue their activities?

Analysing the circumstances of business in the current context of crisis is an obligatory task not only for the academic world, but also for the business world, including changes in consumption and competition, organisational processes, and other challenges of adapting to the new market conditions for those who are at the head of the organisations.

In Mexico, it is estimated that more than 90% of the companies affected correspond to SMEs, 96% of which could close their activities, given the numbers of layoffs and partial closures (INEGI, 2020).

This paper seeks to provide a perspective on the situation of small and medium-sized enterprises in the current scenario, particularly in the state of Hidalgo, in the southern region of the state. The study is feasible to carry out, in addition to being a practically obligatory task for academia and the business sector, since information can be obtained from the participating companies, thus providing elements to analyse the perspective of businesses in the current context.

The working hypothesis is that SMEs in the southern region of Hidalgo have been affected by the crisis to a greater extent by changes in employment.

## General objective

To determine the perspective of the economic situation of small and medium-sized enterprises in the COVID 19 scenario, particularly in the state of Hidalgo, in the southern region of the state.

## Specific objectives

- To identify economic sectors affected by COVID-19 in the study area.
- The context where the research is carried out is the southern region of the state of Hidalgo, the object of study are manufacturing and service SMEs that were willing to carry out the survey electronically, the data collection was carried out during the months of June to September 2020.

## Theoretical underpinning

The health crisis caused by COVID-19 has repercussions at the economic, social, political, environmental and health levels at the international level, causing a decrease in the growth of the world economy, and Mexico has been no exception.

Small and medium-sized entrepreneurs face more aggressive competition than large companies that are used to competing in markets in a more globalised wasteland, where the difference between experience and preparation is abysmal in these sectors.

Globally, the World Bank (2020) noted that the economy has seen the greatest contraction in output and income, resulting in higher poverty rates across the board. One of the most affected sectors has been SMEs, due to the widespread loss in demand for their products and services (KPMG Trends, 2020), which in many cases has led to staff cuts, reduced working hours and in extreme cases, the closure of activities.

For its part, the International Labour Organisation (ILO) forecasts that by 2021 the crisis will impact 306 million jobs worldwide, while the International Monetary Fund (IMF) points to a severe recession, given the low economic growth and per capita income. The above estimates point to a greater impact on SMEs.

These data put many organisations and governments on alert to take action to help these companies survive and thrive. Therefore, it is positive to know the needs of small and medium-sized enterprises in order to strengthen them, as this sector is the economic driving force behind the supply of goods and services at national and global level.

### **Small and medium-sized enterprises**

SMEs are often characterised by informality, flat (horizontal), lacking professionalisation, as opposed to hierarchical internal structures, and open and fluid communications between owners and employees Giles (2020). Other defining characteristics are flexibility and adaptability to changing circumstances, as well as creativity and innovation. However, despite their inherent strengths, SMEs face a variety of size-related challenges in attracting and retaining skilled labour and accessing finance (Mendoza, 2013).

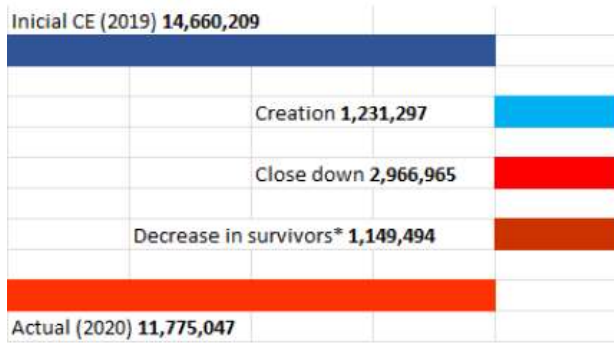
International and national country reports also suggest that, compared to large firms, SMEs have lower productivity and wage levels and are more vulnerable to supply and demand shocks (OECD, 2019,2020). Improvements in SME governance, aimed at reducing regulatory complexities and levelling out market imbalances, have therefore been high on the policy agenda of many governments (OECD, 2019).

The coronavirus pandemic created a global crisis that, unlike most other crises in world history, involves both supply and demand shocks. Worldwide, more than twenty million people have been infected and, due to isolation measures, around 350 million full-time employees have become unemployed or have had a reduction in working hours and pay (International Labour Organisation, 2021). The pandemic has affected employment, investment and growth prospects, which may well result in permanent changes in production, consumption and work patterns (Contreras, Valle and Canales, 2021).

While both large firms and SMEs have been affected by the crisis, recent reviews recognise that its effects are greater for SMEs. The OECD summary of 40 surveys in member states and partner countries (OECD, 2020) reveals that more than half of SMEs have suffered a substantial loss of income and fear going out of business in the short term, unless public assistance is available and extended for the duration of the crisis. There is evidence that SMEs are increasingly digitising their operations to adapt to changing circumstances, but there have been temporary closures, reductions in employment and wages, and in many cases bankruptcies. Some of the policy mechanisms most commonly used to mitigate the effects of the crisis are tax deferrals, loan guarantees and direct lending to SMEs and wage subsidies (Aguirre, Vázquez, Salazar (2021

In Mexico, according to INEGI's study (2020) on business demographics 4.9 million small and medium-sized enterprises that existed in 2019, 3.85 million survived, that is, one million 10 thousand 857 establishments or 20.81 per cent closed their doors for good.

The highest percentage of final closures recorded by economic activity was in private non-financial services establishments, with (24.92 per cent); commerce, (18.98) and manufacturing, with (15 per cent) (see figure 1).



**Figure 1** Surviving establishments  
*INEGI, 2020*

Some of the reasons why SMEs are more vulnerable to the crisis, as identified in the literature, are the following: this sector is over-represented in the sectors that were directly affected, tourism, retail and transport.

So, as in the rest of the planet, this economic blow is not being survived by everyone, and with it the employment and income of many people who are employed will be affected, this is not an issue that affects only companies, large or small, we are all experiencing it and we are not sure how much longer this will continue.

This paper is based on primary data from a survey of active SMEs conducted from May to September 2020 by Observatorio Iberoamericano de la mipyme. Respondents in the study region were chosen using territorially stratified random sampling, and the resulting sample size (n = 235) however, due to pandemic conditions, the survey was conducted electronically and the response was only 131 so it is representative of the southern region of the state of the municipalities of Tula, Mixquiahuala, Atotonilco de Tula and Tepeji del Rio.

The survey instrument has 18 items, covering both demographic data (age, gender, education and residence) and assessment of the effects of the crisis on employment (changes in employment status, working hours/wages, sectors involved), perception of the impact of the crisis on finances (impacted me more than others, less than others, about as much as most enterprises,

I don't know). What is your impression of how the following variables have evolved (volume of financing, expenses and consumption, guarantees, collateral), reduction in payment to employees (yes, no, no answer), place of residence (city centre, urban area), status of employees (full time, part time, dismissed) (SME owner, working in SME, working in large company, working in small company, working in large company, working in small company, working in large company, working in small company, working in large company, working in large company, working in small company, working in large company, working in large company).

<b>Metal-mechanical manufacturing</b>	43
<b>Construction manufacturing</b>	21
<b>Trade</b>	47
<b>Energy</b>	1
<b>Education</b>	10
<b>Total</b>	131

**Table 1**

The majority (79%) of respondents with less than ten employees account for more than half of the employment within the SME category, followed by those with between 10 and 49 employees. This result is consistent with national statistical data (SE, 2019), according to which SMEs account for the majority of salaried employment (68%) in Mexico.

Approximately half of the SMEs surveyed (55%) are headed by men, more than a third (39%) are from the municipalities of Tula and Atitalaquia and a third (33%) are from Atotonilco and Tepeji del Rio. The average age of SME employees is 33 (median = 31), the youngest respondents are between 18 and 20 years old, while the oldest respondents are 65 years old. More than half of the respondents (60%, n = 131) have tertiary education (bachelor-specialisation) and 15% have vocational secondary education.

## Changes in employment

Finance has affected SMEs (85%) as much as any other company: in this, as in other aspects, male managers tend to emphasise the impact of the crisis more than women. Of the (75%). SMEs that sought to keep their employees were unable to retain them in the 2020 period, 25% managed to keep them, albeit with fewer working hours and therefore less pay.

During the COVID-19 pandemic, SMEs have sought new ways to continue their work, one of these is teleworking 76.19% of SMEs have implemented this way of working 57.14% of SMEs plan not to continue using telework on a constant basis after the pandemic, while 42.85% will continue to work with it after the pandemic of which 22.22% seek to implement teleworking in the future as they are not using it during the pandemic. Regarding the activities of SMEs in the manufacturing sector (69%) are in the service sector and 14% are in manufacturing (including energy, construction). Within trade and services, relatively high proportions are in wholesale and retail trade (17%), in education (16%).

## Inferential Statistics

Variable	Mean	Std. Dev	Min	Max
Gender	.55	.49	0	1
SME	.76	.43	0	1
Full-time	.56	.57		
Salaried employee	.65	.46	0	1
Income	2.48	1.23	0	1

Note: Remarks 131. Variable measures: binary (gender, SME, salaried and full-time), ordinal scale (income)

**Table 2** Presents the descriptive summary regarding SME employment

	Genre	Resid 1	Resid 2	pyme	salary	Full time	dismissal	Salary reduction
Genre	1.0							
Resid 1	-0.07	1.00						
Resid 2	-0.12	0.48	1.00					
pyme	0.00	0.23*	-0.16	1.00				
salary	-0.09*	0.18*	0.20*	-0.27*	1.00			
Full time	0.13	0.34*	0.24*	-0.32*	0.08*	1.00		
dismissal	0.08*	-0.07*	-0.01	0.14*	-0.01*	-0.23*	1.00	
Salary reduction	0.02	0.09*	0.09*	0.13*	0.00*	-0.07	0.41*	1.00

Note: Significance level \*

**Table 3** Pairwise correlation

It can be seen from the pairwise correlation matrix that, although weak, SME employment is significantly positively correlated with both dismissal and wage reduction ( $r = 0.14$  and  $0.13$ , respectively,  $p = 0.00$  for both).

The highest correlations in the study are: dismissal is significantly negatively associated with full-time employment ( $r = -0.24$ ) and earnings ( $r = -0.23$ ), while wage reduction is significantly negatively associated with full-time employment ( $r = -0.18$ ). The two variables measuring changes in employment due to the pandemic (layoffs and wage reduction) have a significant positive correlation ( $r = 0.41$ ,  $p = 0.00$ ).

	Dismissal	Payment reduction
Gender	1.89*** (0.26)	1.01 (0.16)
Age	0.93 (0.01)	0.95*** (0.01)
Residence (1)	1.00 (0.24)	1.59** (0.32)
Residence (2)	1.55 (0.40)	1.45* (0.33)
SME employee	2.00** (0.80)	2.50*** (0.41)
Full-time	0.44*** (0.10)	0.49*** (0.10)
Salaried employment	0.94 (0.21)	0.93 (0.18)
Income	0.69*** (0.07)	0.95 (0.07)
Cte	(0.43) 0.43	1.47 (0.69)
LR $\chi^2$	68.15***	33.33***
R <sup>2</sup>	0.10	0.04
Remarks	131	131

Note. \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ . Standard error in brackets.

**Table 4** Regression Results

The logistic regression results in table 4 show that being an SME employee increases the probability of dismissal and wage reduction. The odds ratios are 2.0 and 2.5 respectively. Although the regression models do not have a good fit, the SME variable is significant at levels of 1 to 5% in both cases, and explains more of the variance in the dependent variable (dismissal or wage reduction) than the other independent variables. Other variables with statistical significance are associated with dismissal and gender, full-time employee and monthly income. With respect to salary reduction, these are age, residence in the municipal capital and full-time employee.

## Conclusions

COVID-19 has had a significant impact on the business productive structure, although overall, the intensity has been different in each region and country.

The weaknesses caused by decades are factors (low professionalisation, lack of financing, limited infrastructure, labour qualification, etc.) that need to be addressed when designing policy measures for reactivation that allow the various sectors to move forward.

In the tabulation data, it was found that, a quarter of the employees in SMEs have been laid off. Among those employed at the time of the survey, the majority are in the retail, commerce, education, health and social work sectors. Among those employed in large companies, they are found in finance and insurance and information and communications. Therefore, there is support for answering the working hypothesis that employees in industries that allow telecommuting have been less affected by the crisis. That is, as they laid off workers or reduced working hours and pay, SMEs have been affected by the crisis to a greater extent by changes in supply and demand impacting on their market tenure and employment.

The findings, similar to those of SMEs in other regions and countries, suggest that SMEs have been more affected by the crisis, cutting wages and employment to a greater extent than large firms. The policy implication is that government assistance would be crucial to keep small and medium-sized enterprises open, especially in sectors that were closed due to containment measures, e.g. trade, transport, food, accommodation and recreation. Another implication is that specific assistance must be provided to low-skilled employees who have been laid off due to the pandemic and cannot find remote jobs.

Finally, there is support for meeting the stated objective of determining the economic situation of small and medium-sized enterprises in the COVID 19 scenario, particularly in the state of Hidalgo, in the southern region of the state. There is confidence in the results to generalise to other regions where SMEs account for the majority of private sector employment and have a significant share of value added.

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## Analysis of competitiveness in Mipymes during the covid-19 pandemic, case of Tlaxcoapan, Hidalgo

### Análisis de la competitividad en las MIPYMES durante la pandemia Covid-19, caso Tlaxcoapan, Hidalgo

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#### Abstract

The objective of this research is to carry out an analysis of the competitiveness of MSMEs, in the municipality of Tlaxcoapan, Hidalgo; in order to know what are the factors that prevent them from staying within the local market during the Covid-19 pandemic. The methodology used was with a mixed approach and descriptive-exploratory research design, where the characteristics that the MSMEs of the Municipality of Tlaxcoapan live today were identified; The instrument that was applied to collect the data was a questionnaire divided into 5 sections: marketing, clients, competitiveness, contingency protocols and the use of information and communication technologies; 323 questionnaires were applied, a result that the statistical sampling yields, according to 2043 economic units. As a result, it was identified that 78% of the owners of MSMEs consider that in order to be competitive it is important to generate strategic plans in the areas of marketing, clients, contingency protocols, and the use of information and communication technologies, due to that are of great relevance to survive in the markets, in addition to the uncertainty that could occur at some other time of pandemic or some other contingency that could affect their economic operations. During the Covid-19 Pandemic, many micro, small and medium-sized companies did not know how to face such a crisis, despite the technological tools they were able to implement in their businesses. Alliances can be made with higher education institutions to be able to work hand in hand and provide solutions to the needs presented by the MSMEs of Tlaxcoapan, Hidalgo

Competitiveness, Contingency, Hidalgo, Marketing, Mipymes

#### Resumen

El objetivo de la presente investigación es realizar un análisis de la competitividad de las Mipymes, del municipio de Tlaxcoapan, Hidalgo; con la finalidad de conocer cuáles son los factores que les impide mantenerse dentro del mercado local durante la pandemia Covid-19. La metodología utilizada fue con un enfoque mixto y el diseño de investigación descriptiva-exploratoria, donde se identificaron las características que viven las hoy en día las Mipymes del Municipio de Tlaxcoapan; el instrumento que se aplicó para recabar los datos fue un cuestionario dividido en 5 apartados: mercadotecnia, clientes, competitividad, protocolos de contingencia y el uso de las tecnologías de la información y comunicación; Se aplicaron 323 cuestionarios, resultado que arroja el muestreo estadístico, de acuerdo a 2043 unidades económicas. Como resultado se identificó que un 78% de los propietarios de las Mipymes, consideran que para ser competitivas es importante generar planes estratégicos en los ámbitos mercadotecnia, clientes, protocolos de contingencia, y el uso de las tecnologías de la información y comunicación, debido a que son de gran relevancia para lograr sobrevivir en los mercados, además de la incertidumbre que se pudiera dar en algún otro momento de pandemia o alguna otra contingencia que pudiera afectar sus operaciones económicas. Durante la Pandemia de Covid-19 muchas micro, pequeñas y medianas empresas no supieron cómo enfrentar tal crisis, a pesar de las herramientas tecnológicas que pudieron implementar en sus negocios. Se pueden realizar alianzas con las instituciones de educación superior para poder trabajar de la mano y dar soluciones a las necesidades que presentan las Mipymes de Tlaxcoapan, Hidalgo.

Competitividad, Contingencia, Hidalgo, Mercadotecnia, Mipymes

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## Introduction

The coronavirus disease pandemic (COVID-19) has wreaked havoc on the global economy, with a widespread collapse in economic activity. The year 2020 is seeing the largest drop in output since World War II (-5.2%) and the largest percentage of countries experiencing a recession simultaneously (90%) since estimates began in 1870. (Bank, 2020).

This crisis has altered all the daily activities and ways of doing business of companies, especially micro, small and medium-sized enterprises (MSMEs), and the consumption habits of households. In this context, MSMEs, eager to show an unprecedented growth, have to look for strategies and actions to implement during the sanitary contingency, that will help them to reduce the economic risks of the pandemic, and that will allow them to be competitive, attending to the great challenges in order not to disappear. On the other hand, the government of the region has been concerned about promoting sanitary measures to avoid the total closure of these economic units and to allow them to survive.

The vulnerability of the economic system and the weakness of public policies have resulted in disjointed and late actions, as well as in decisions that have been taken without solid strategic plans and in the absence of long-term visions. Although the pandemic still continues, it is possible to recognize certain important lessons to consider for the construction of another future (ECLAC, 2021b).

The crisis caused by the Covid-19 pandemic highlighted the lack of strategies and foresight on the part of SMEs to face this type of situation and such abrupt changes. Given the undeniable transformation that businesses and their relationship with customers will undergo, it is essential to develop a contingency plan to ensure the permanence of companies (Angel, 2020).

On the other hand, competitiveness is one of the most important concepts in the industrial and business world. It is determined by economic, social and political elements, which determine the company's ability to achieve a unique and sustainable position in the market.

It is worth remembering that development processes have brought many advantages and advances in all fields. This development process is evidenced by the creation of small and medium-sized enterprises (Alejandro, 2012).

The objective of this research is to analyze from the perspective of the owners of the MSMEs, which were the problems they faced due to the COVID-19 pandemic, and to know which were the actions and strategies they had to implement in the aspects of marketing, clients, contingency protocols and the use of information and communication technologies; to be competitive and to be able to give solution to the economic crisis. Therefore, with them, the research questions will be answered: Do MSMEs in Tlaxcoapan have strategic contingency plans? Will having contingency plans make MSMEs more competitive?

## Methodology

### Approach

The research "Analysis of competitiveness in MSMEs during the covid-19 pandemic, Tlaxcoapan, Hidalgo case" is of a descriptive exploratory type; in this regard, Hernandez, Fernandez and Baptista refer that "Exploratory studies are conducted when the objective is to examine a topic or research problem that has not been studied much, about which there are many doubts or which has not been addressed before". Likewise, it is considered descriptive because it "seeks to specify properties, characteristics and important features of any phenomenon being analyzed, describing the tendencies of a group or population". (Hernández R., 2003)

From there, and with the information collected and provided by the owners, the business reality in which the MSMEs live will be described, to analyze the competitiveness and what were the internal and external factors that they had to address to ensure that their business units did not close economic operations during the Covid-19 pandemic.

## Place of research

The research studies the micro, small and medium-sized enterprises (MSMEs) of the municipality of Tlaxcoapan, Hidalgo; of which 2043 are engaged in the three most representative economic sectors (commerce, services and industry).

## Population and sample

The type of sampling chosen was simple random sampling, which is the simplest and best known probabilistic sample selection procedure.

Once the information on the size of the population (2043 MSMEs) was available, the formula for calculating the sample was applied, working with a confidence level of 95%, with a probability of failure of 50%, a probability of success of 50% and a standard error of 5%, as shown below:

$$n = \frac{N * Z\alpha^2 * P * Q}{e^2 * (N - 1) + Z\alpha^2 * P * Q}$$

n= Sample size

N= Population size or universe

Z= Statistical parameter that depends on the N

e= maximum accepted estimation error

P= Probability of occurrence of the event

Q=(1-p)= probability that the event does not occur

Parameter	Sample size
N	2043 <b>n= 323.49</b>
Z	1.96
P	50%
Q	50%
e	5%

Derived from the application and calculation of the formula, it was obtained that the number of MSMEs to be surveyed is 323, in order to have a relevant population sample to carry out the research. The questionnaire, which was prepared specifically, consists of 4 sections, which will allow gathering information on: marketing, customers, contingency protocols and the use of information and communication technologies.

## Results

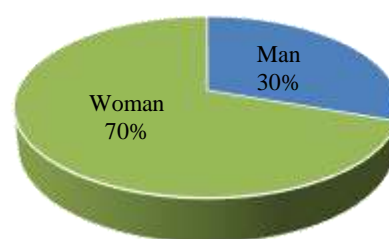
This section presents the results obtained from the analysis of the data generated by the survey applied to the owners of the MSMEs.

The municipality of Tlaxcoapan is one of the eighty-four municipalities that make up the state of Hidalgo in Mexico. This municipality has a surface area of 39.00 km<sup>2</sup>, and represents 0.19% of the state's surface area; within the geographic region known as the Mezquital Valley. Tlaxcoapan is considered within the metropolitan municipalities of the metropolitan area of Tula, which also includes the municipalities of Tula de Allende, Atitalaquia, Atotonilco de Tula, and Tlahuelilpan, with Tula de Allende as the central municipality.

In 2015, the municipality has an HDI of 0.762 High, ranking 18th at the state level; according to the National Council for the Evaluation of Social Development Policy (CONEVAL), the municipality has a Very Low Marginalization Index (CONEVAL, 2015).

In Graph 1, it is shown that 70% of women are owners of MSMEs in the municipality of Tlaxcoapan, and 30% are attended by the male gender. In addition, for women it is a priority to the welfare of their family/children, associated with achieving economic stability to meet household expenses, which motivates them to create their own business, exposing themselves to poor working conditions, being in the informal sector, and the lack of compatibility between work and family activities.

At present, women represent the strongest sector in the retail trade in many countries. Therefore, there should be greater flexibility to have access to working conditions, to the different fiscal support granted by governments, and to receive constant training. With these actions, one of the sustainable development objectives will be fulfilled, which is to: Promote inclusive and sustainable economic growth, employment and decent work for all.

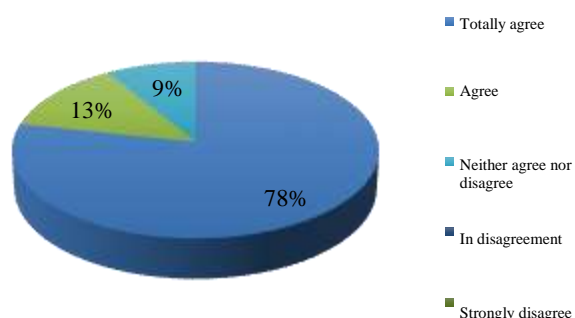


**Graph 1** Gender of MSME owners

Source of reference: Based on the results obtained in the questionnaires

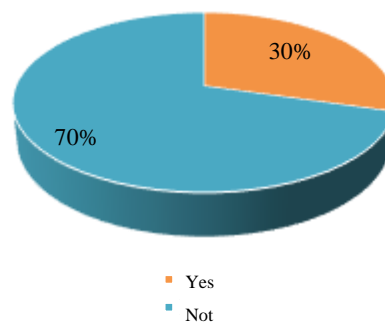
**Marketing**

According to Anzola, in Latin American small businesses, "Marketing is applied informally by the mere intuition of the entrepreneur" (Anzola, 2010). As can be seen in Figure 2, 78% of the owners of MSMEs in Tlaxcoapan state that they totally agree that marketing is an important factor for the sale of their products and services, which would generate greater income from their sales; 13% say that since they do not have sufficient economic resources to pay for a strategic marketing plan, they use common media to publicize their products, including social networks, customer service, and they consider that since they are family businesses, the whole region already knows them and that is more than enough.



**Graph 2** Marketing is an important factor for the development of the company  
 Source: Based on results obtained in the questionnaires

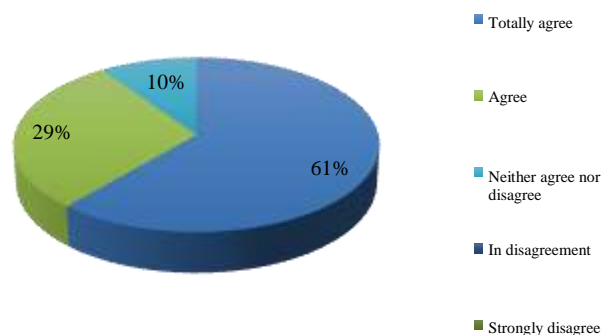
Graph 3 shows that 70% of the owners have not designed a marketing plan to deal with the contingency during the Covid-19 pandemic, since they had never imagined this type of disease, much less had they considered the great magnitude and the way in which their businesses would be affected in their sales and income. In addition, according to the information provided by health authorities, they considered that the pandemic was only for a short term. The other 30% stated that they did design a contingency plan that would help them to be sustainable until they received indications that they could continue their activities normally and not close their business indefinitely.



**Graph 3** During the pandemic, did you design a business contingency plan?  
 Source: Based on the results obtained in the questionnaires

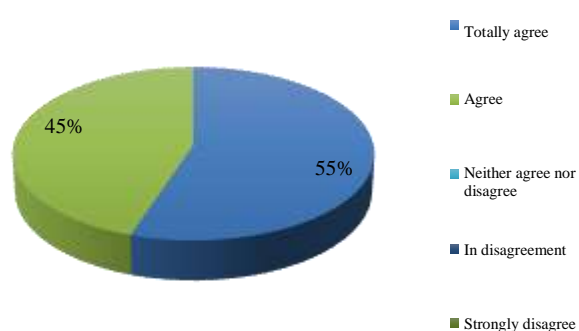
From the above, it can be discerned that at present all companies should have a marketing plan that helps them to strengthen and achieve higher levels of economic productivity, through modernization in the use of technology and innovation, adding value to their sales.

In Graph 4, the owners were asked if they consider it appropriate for all members to participate in decision making in the company's marketing plans. 61% totally agree that all workers should participate in decision making, since the contribution of each one of them strengthens the work, 29% agree but consider that the owner of the business should make the final decision, and 10% state that they neither agree nor disagree, because they do not consider the opinions of the workers to be relevant, and in some family businesses, the decision is made by the one who contributes the most.



**Graph 4** It is considered appropriate that all members participate in the decision making process of the company's marketing plans  
 Source of reference: Based on the results obtained in the questionnaires

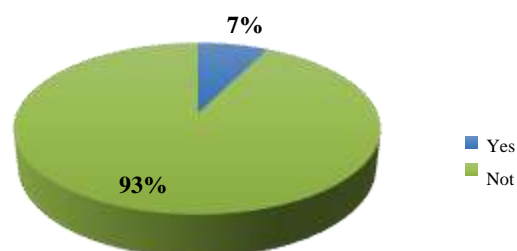
According to Laura Fischer, "sales promotion makes products known in a personal way and offers additional values or incentives to sellers or consumers; likewise, they consider that promotion is the marketing activity whose purpose is to promote the sale of a product in a personal and direct way" (Fischer, 2011). Graph 5 shows that 55% of the business owners have been concerned about generating promotions or offers for the sale of their products to attract customer attention and increase sales during the Covid-19 pandemic, and 45% agree to generate promotions or offers so that their sales are not so affected, since they have to obtain income to cover the costs of water, electricity, rent, payment of salaries, among others.



**Graph 5** The company has been concerned about generating promotions or offers for the sale of its products to attract customer attention and increase sales before COVID-19

Source: Based on the results obtained in the questionnaires

Graph 6 shows the result of the question: Does the company have a formally established Marketing area or department? Therefore, 93% of the owners of the MSMEs answered that they do not have a well-defined organizational structure, in which the functions are established as in large companies, since they lack the economic capital to be able to generate organizational manuals, in addition to the fact that there is also a lack of knowledge of the use and management of technologies. The 7% of companies do have a marketing area, which is in charge of uploading updated information about the goods and services they offer to their websites. According to communication and marketing consultants (Oakpower, 2018) "only 55% of the companies have a marketing and communication department because entrepreneurs do not consider it important".



**Graph 6** The company has a formally established marketing area or department

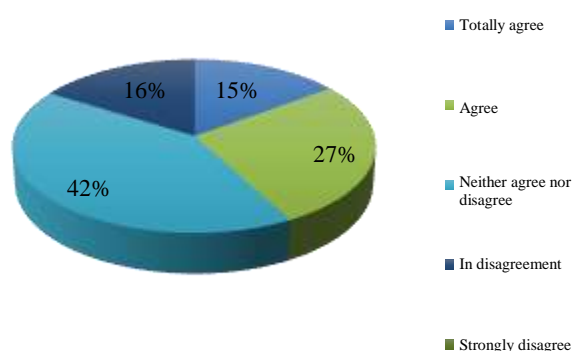
Source of reference: Based on the results obtained in the questionnaires

### Clients

"A customer is the person who purchases the products or services of a business. Therefore, it is a consumer, from the company's perspective. It can be a recurring customer when he/she makes regular purchases, or a one-time customer." (Hubspot, 2021). Given the reality that was experienced during the Covid-19 pandemic, the form of customer service also had to evolve and MSMEs in Tlaxcoapan were no exception in seeking new strategies to offer their products and services to consumers, and to continue providing attention to their customers so as not to lose the trust that had already existed between buyer and seller.

The owners were asked if they have well identified the customers to whom the products offered by the company are directed; in graph 7, 42% expressed neither agreement nor disagreement, since their products are available to the general public, considering that for their businesses the customers are the most important thing to be competitive and identifying to whom their product is directed. While 27% agree that they have well identified their customers and even if there is other competition near them, their customers are loyal to them because of the attention they receive and they already know the products or services they offer.

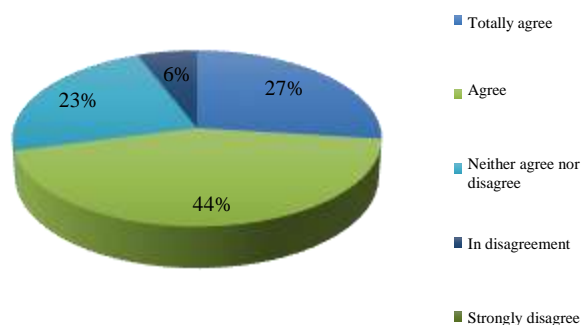




**Graph 7** The company's target customers are well identified

Source of reference: Based on results obtained from questionnaires

According to Terry Vavra, "In an organization, measuring customer satisfaction should be as strategically oriented as marketing and sales. Customers are the ones who can make you succeed, as long as you and your team are willing to listen to their suggestions." (Vavra, 2002). Graph 8 shows that 44% of the owners say that they neither agree nor disagree with measuring customer satisfaction, since they do not know how to carry out the measurement and how to interpret this measurement, as well as what the benefits would be, others consider that it would be an opportunity to know if the customers are really satisfied with the products or services they offer; 27% of the owners disagree, stating that many people do not take it seriously and do not answer their business satisfaction surveys, which makes them lose interest in measuring the level of satisfaction, while 23% of the owners agree with the idea of measuring satisfaction.



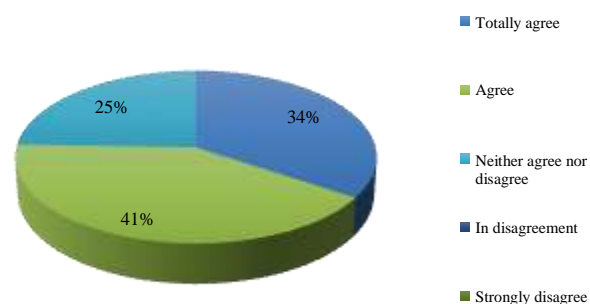
**Graph 8** It is customary to measure the level of customer satisfaction

Source of reference: Based on the results obtained in the questionnaires

## Competitiveness

Additionally, as Porter indicates "companies can be more productive in any industry if they employ sophisticated methods, use advanced technology, and offer unique goods and services. It is worth noting that the state takes a predominant role in driving business competitiveness" (Competitiveness factors, 2016) (Porter, 2000). Given the importance of the concept of competitiveness for MSMEs, during the Covid-19 pandemic, it regained more value for the owners of these economic units, since there were many factors that were affecting them such as the temporary closure of the business, attending at certain times, not having the necessary income, lack of employment in consumers, price hikes in products, payment of fines for not applying sanitary protocols, etc. This limited even more the capacity of the entrepreneur to take care of all these strategic aspects, with a lack of long term vision and the uncertainty of the danger of closing their business without having reached its life time.

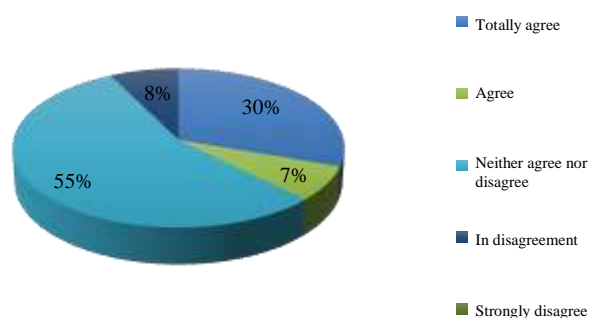
Graph 9 shows that 41% of the owners agree that in order to make decisions they always analyze the competition, because during the confinement many of the businesses had to diversify their economic operations or offer additional services in order to obtain income to survive, Therefore, 34% totally agree in analyzing the competition before starting any extra activity, since the conditions were not so favorable and investing was too risky, and finally 25% neither agreed nor disagreed, they did not care if there was competition or not, they considered that they already had their clients identified.



**Graph 9** In order to make decisions, the company always analyzes the competition

Source: Based on the results obtained in the questionnaires

The entrepreneurs were asked if they have well identified the competition; Graph 10 shows that 55% answered neither agree nor disagree, since they are constantly opening businesses regardless of whether there is already another with the same line of business or the same activity, while 30% agree that they have well identified their competition, as this helps them to innovate and offer new products, which allows them to have more income and above all to offer affordable prices so that their products do not run out; as well as to identify their strengths and weaknesses.



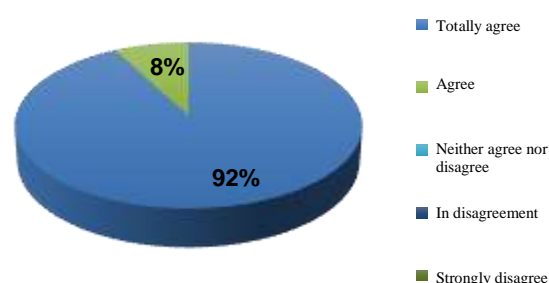
**Graph 10** The competition is well identified  
Source of reference: Based on the results obtained in the questionnaires

Emilio de Velasco, states that: "The pricing policy is the result of the confrontation, on the one hand, of the needs of the market, characteristics of the products, type of distribution chosen, advertising and promotion conceived and, on the other hand, of the limitations of the costs and profitability objectives indicated" (Velasco, 1993).

It is worth mentioning that although the municipality of Tlaxcoapan is considered part of the Metropolis of the Tula de Allende Industrial Zone, the prices are accessible to consumers.

Graph 11 shows that 92% of the owners of MSMEs consider that they totally agree that their products are accessible to those of the competition, stating that one of the advantages is that the establishments or premises are their own and do not pay rent, and that prices are established depending on the region, the public to whom the product and service are directed. During the Covid-19 pandemic, they had to increase their prices a little more because customers were requesting home delivery.

Eight percent agree that their prices are more affordable than those of the competition and that clients seek them out because of the benefits they provide for their pockets and the quality they offer.



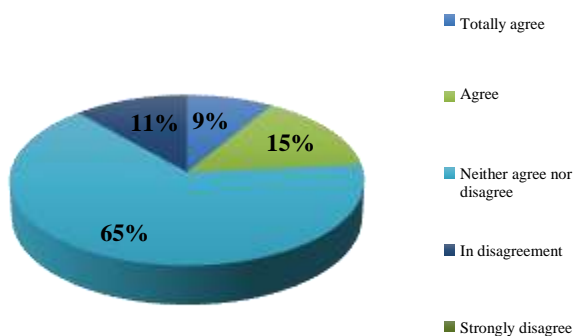
**Graph 11** Considers the prices of its products more affordable than those of its competitors  
Source of reference: Based on the results obtained in the questionnaires

## Contingency Protocols

The crisis generated by the Covid-19 pandemic highlighted the lack of strategic planning for all large, medium and small companies; it was no exception for MSMEs that had to face this type of situation as well and make the necessary changes to meet the needs of their customers, given the eminent ravages that were experienced, the owners of MSMEs were given the task of developing a contingency plan to ensure their permanence in the market.

Therefore, they were asked if they had this type of protocols, as well as if they knew the scope of the contingency plans that the health authorities had issued, in order to reduce the risk of contagion and avoid the death of more people.

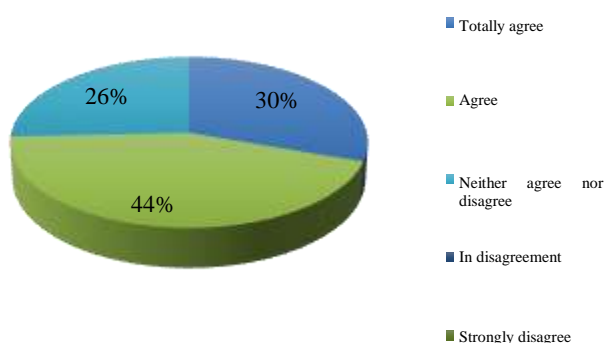
Graph 12 shows that 65% of Tlaxcoapan's microentrepreneurs report neither agreeing nor disagreeing in knowing the protocols established by the Ministry of Health and 15% agree that they know these protocols that were issued by the health agency so that they could apply them in their businesses to protect and safeguard the health of their clients and their families, always following the requirements established by the municipal presidency.



**Graph 12** I know the protocols established by the health secretary for SMEs

Source: Based on the results obtained in the questionnaires

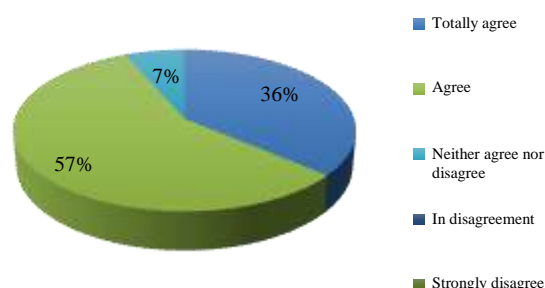
Graph 13 shows that 44% of the owners agree with what has been established by the health authorities and the supervisions carried out by the Ministry of Health, COFEPRIS and the municipal authorities, while 30% say they totally agree with all the protocols that have been implemented, despite the fact that they have to change their sales styles and comply with any indication that would allow them to continue developing their economic activities, knowing that at any moment they would be subject to supervisions and monitoring; Otherwise, they would be sanctioned or fined for not complying with orders, which would imply an unnecessary disbursement for their businesses.



**Graph 13** I agree with what is established by the Ministry of Health, COFEPRIS and all those who regulate the contingency

Source: Based on the results obtained in the questionnaires

They were asked if they apply constant innovations within the company's processes in view of the Covid-19 contingency. 57% agreed with the constant innovation in the activities and commercialization of their products or services, in a way that they reach the final consumer; 36% totally agreed in applying this type of innovation strategy to help them mitigate the risk of bankruptcy, so they will have to take advantage of all the opportunities that arise to offer their products, make use of the Internet and technological tools to improve their processes and avoid economic losses. Seven percent expressed neither agreement nor disagreement.



**Graph 14** Constant innovations are applied within the company's processes in the face of the COVID-19 contingency

Source of reference: Based on the results obtained in the questionnaires

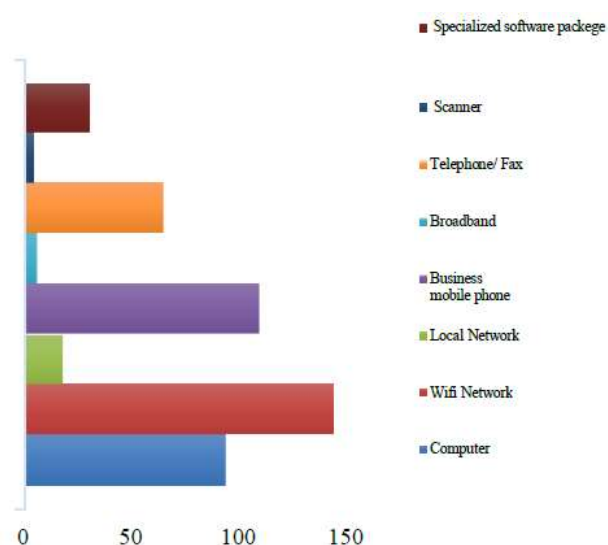
**Use of information and communication technologies**

Mbuyisa, "say that digital technologies have been hailed as the answer for developing countries, because they give way for their MSMEs to arrive at consolidation stages and help improve their competitiveness and productivity levels" (Mbuyisa, 2017). Therefore, MSMEs in Tlaxcoapan had to implement the use of technologies in order to establish a synergy with customers, and that the performance of their activities was more competitive and to be able to sustain themselves in the face of this Covid-19 pandemic.

In graph 15, it can be seen that most of the businessmen refer to have and use in their businesses Wifi network, which has allowed them to have the internet service in order to continue offering or providing services using this technological means;

Followed by the fact that most of them refer that they also use cell phones and that they had to buy them to serve customers, since they consider that it was the tool they used the most to market their products and achieve higher sales during the social confinement.

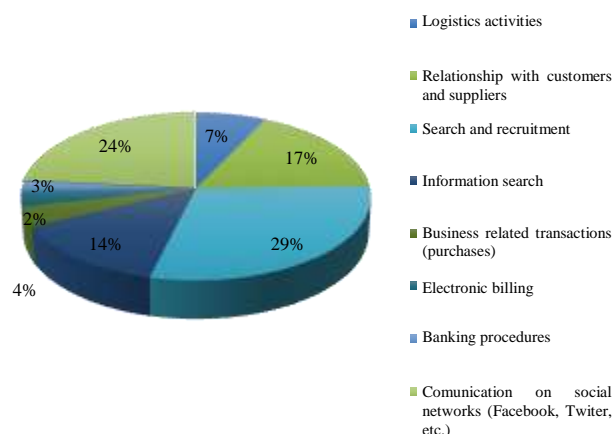
They also mention that they have broadband internet and home telephone, which were also used for customer service and allowed them to continue sustaining their businesses, since they had to take advantage of all these technological means to which they had access and, due to the sanitary crisis, they had to use them to face the situation they were living through.



**Graph 15** Types of availability of information and communication technology infrastructure used by your company during the Covid-19 contingency  
 Source: Based on the results obtained in the questionnaires

Graph 16 shows that 29% of MSME owners have internet in their businesses and the main use they give it is for: searching and hiring personnel, since due to health measures it is not advisable to attend in person, while 24% stated that they use it to have communication in social networks with their customers to boost their sales by promoting their products and services, as well as having that virtual contact with their family and friends; on the other hand 17% use it to continue a business relationship with their suppliers and customers, so as not to lose that communication and continue to foresee their products and not be left in shortages, as well as to offer the new products or offers they had for their customers. Finally, 7% said that they use it to follow up on their products so that they reach the end consumer.

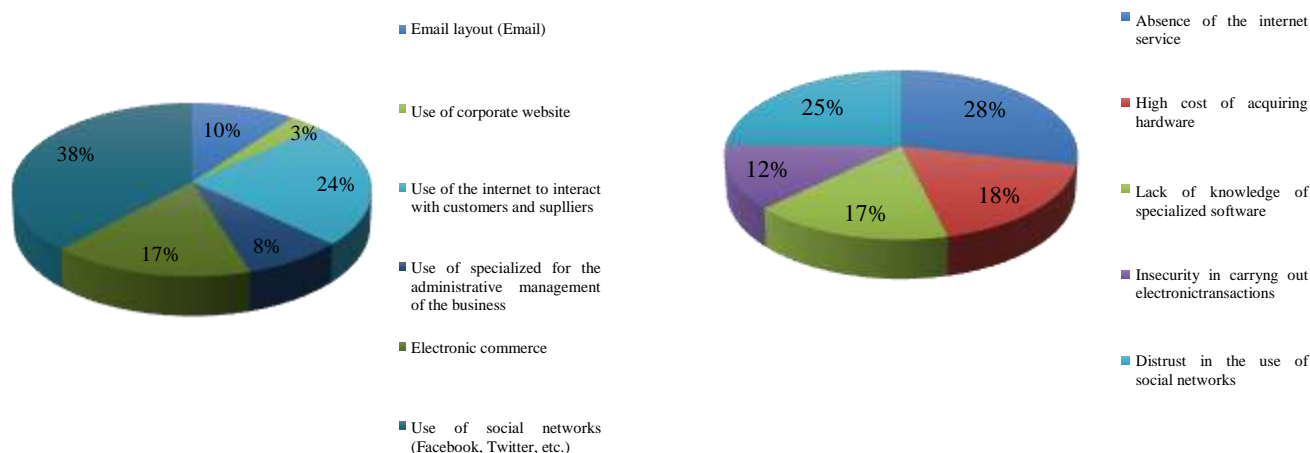
According to the Federal Telecommunications Institute, 25.3% of businessmen use the Internet to recruit personnel, while 71.5% use it to provide better customer service, 21.8% sought advice or information on websites and 31% implemented new forms of payment (IFT, 2021). (IFT, 2021).



**Graph 16** If you have internet access, please indicate the main activities that you use it for any procedure carried out in your company during the COVID-19 contingency  
 Source: Based on the results obtained in the questionnaires

The microentrepreneurs of the municipality of Tlaxcoapan stated that (38%), during the sanitary contingency, the activities they carried out the most using information and communication technologies is to make use of social networks such as Facebook, twitter among others, in order to meet the requirements of customers, as they used these networks to make alliances with consumers and continue shopping online without leaving their homes; 17% stated that the activities they are carrying out are e-commerce, without having the experience or knowing the implications of obtaining confidential information from customers such as their telephone numbers, addresses, etc. , are taking advantage of the opportunity to do business. According to INEGI 2020 in its survey: Management of Mexican MSMEs in times of Covid-19, they mention that they use Facebook to market their products. Therefore, this technological medium is seen as a niche of opportunity to achieve a better competitiveness of their businesses.





**Graph 17** Indicate the type or types of information and communication technology activities that your company has carried out during the COVID-19 contingency

Source of reference: Based on the results obtained in the questionnaires

The owners of the MSMEs were asked if the technological and communication tools have been favorable resources in the face of this contingency, and they indicated which factors they see as a problem for their sales during this pandemic. In graph 18, 28% state that the absence of internet services, because everyone had to contract to carry out their home office activities, others contracted the service to pay attention to their children's school and to be able to connect to the classrooms, so the internet service was saturated; 25% refer to the distrust in the use of social networks, since for the customer it causes uncertainty to make purchases over the Internet or eventually be victims of fraud; 17% state that the lack of knowledge of the management of some software or digital applications, which had come out to sell their products or not having sufficient training by experts, so it was considered risky to invest in the acquisition of some sales platform.

**Graph 18** The information and communication technologies have been a favorable resource in this contingency, indicate which are the factors that they see as a problem for their sales in this pandemic COVID-19

Source of reference: Based on the results obtained in the questionnaires

## Conclusions

The COVID-19 pandemic, with its confinements and social distancing, is the first global supply chain crisis. It has led to losses in economic value, high unemployment and underemployment, business collapse, increased exploitation, hunger and widespread deprivation. (Bellamy & Suwandi, 2020).

The results obtained from this research make it clear that marketing is essential for all types of businesses regardless of the line of business they are engaged in or the size of the company they represent, so it is necessary and urgent that MSMEs in Tlaxcoapan, can consider the implementation of marketing as a strategy in their planning, because it will allow them to operate effectively and efficiently in order to meet the needs of consumers and on the other hand to be competitive in the markets.

In terms of customers, since they are very small economic units, they have not identified their customers well, much less do they know how to measure satisfaction or whether the customer was really satisfied with the product or service they received.

In the aspect of competitiveness, 44% of the microentrepreneurs say that they neither agree nor disagree with having identified the competition, since there are many businesses with the same economic line of business and that customers are free to choose who they purchase their products or services from.

In Mexico, support and financing programs have been promoted and have not given the expected results, the problems faced by MSMEs depend on various factors: quality of products and services, administrative issues, sales, planning, constant digital transformation, difficult access to credit, lack of talented personnel, among others; this, coupled with the adverse market monopolized by large companies that have a greater financial strength and developed technology, in addition to a dominant presence in the media (Instituto Nacional del Emprendedor, 2018). (National Entrepreneur Institute, 2018).

Regarding contingency protocols, they state that they neither agree nor disagree with knowing all the protocols issued by the health authorities, since they only follow the requirements and the most recommended measures recommended by the municipal presidency, which are the mandatory use of masks, having gel and sanitizing liquid at the entrance of their businesses, serving customers at a percentage of 30% of capacity, as well as being attentive to the supervision and monitoring carried out by the surveillance entities. It is important for these economic units to have contingency protocols in place to deal with any other phenomenon that may affect their normal sales activities.

We live in a time totally invaded by technology, according to the 2019 National Survey on Availability and Use of Information Technologies in Homes, Mexico has 80.6 million Internet users and 86.5 million mobile communication users, of which 95.3% use a Smartphone (Instituto Nacional de Estadística, Geografía e Información, 2019).

In the section on the use of technology and communication, MSMEs had to implement the management of these tools, because at the time that the Covid pandemic was being prolonged and not knowing when it was going to end, the owners were in the urgent need to make use of technology with which they had and implement emergency to solve the problems presented and to survive the ravages of the pandemic crisis; The lack of sufficient and competent information on how to carry out electronic commerce, which is currently in fashion, since many MSMEs had to give it priority in order not to have economic losses.

On the other hand, it is an opportunity that is presented to them to also be able to enter the globalized trade, since it would open the doors to make known their products and services in other countries and generate strategic alliances to achieve competitiveness.

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**MSMEs' investment as a competitiveness triggering factor****La inversión de las MiPyMes como factor detonante de competitividad**

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**Abstract**

The objective of this research is to present the results of the study carried out in the San Martín Texmelucan region, analyzing 150 MSMEs to determine the degree of investment that these have and can trigger their competitiveness. Regarding the methodology, the type of research was the applied qualitative type. The contribution was the template in which the strategies appear, which was validated with a pilot test. With this project, an evaluation model of the investments of the MSMEs of the San Martín Texmelucan region is proposed. The project was initially developed by establishing contact with the business sector, preparing a questionnaire to collect and analyze information, the factors that hinder the innovation of MSMEs were analyzed. Afterwards, a pilot test was carried out applying the proposed model to the 150 selected MSMEs and finally, the final report was written and the results were published. It is also considered that this model was applied to the projects that are attended through the business incubator as part of the services it offers.

**Evaluación, Inversión, Mipymes, comercio, emprendimiento****Resumen**

El objetivo de la presente investigación es dar a conocer los resultados del estudio realizado en la región de San Martín Texmelucan analizando a 150 MiPyMes para determinar el grado de inversión que tienen estas y puedan detonar su competitividad. Con respecto a la metodología, el tipo de investigación fue la aplicada de tipo cualitativa. La contribución fue la plantilla en la que aparecen las estrategias misma que fue validada con una prueba piloto. Con este proyecto se propone un modelo de evaluación de las inversiones de las MiPyMes de la región de San Martín Texmelucan. El proyecto se desarrolló inicialmente estableciendo contacto con el sector empresarial, elaborando un cuestionario para recopilación y análisis de información, se analizaron los factores que obstaculizan la innovación de las MiPyMes. Después se hizo una prueba piloto aplicando el modelo propuesto a las 150 MiPyMes seleccionadas y finalmente, se redactó el informe final y se publicaron los resultados. Se considera también que este modelo fuera aplicado a los proyectos que se atiendan a través de la incubadora de negocios como parte de los servicios que ofrece.

**Evaluación, Inversión, MiPyMes, Comercio, Emprendimiento**


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**Introduction**

Investment appraisal is a collection of techniques used to identify how attractive an investment is. Its goals are to assess the feasibility of achieving objectives; and to support the production of a business case, investment appraisal is very focused on the early phases of a project or program and is executed in parallel with tender work on management and delivery plans.

The existence of discrete planning and initiation steps for this function is entirely dependent on the scale and complexity of the work. In programs and portfolios these steps are necessary to establish consistent assessments across all component projects and programs. In projects, some planning and initiation of investment appraisal is likely to be absorbed within the identification and definition processes.

Most investment appraisals are based on cash flows, but there are other factors that may need to be included, such as:

Legal considerations - a project that enables an organization to adapt to new legislation may be mandatory if the organization wants to continue to operate. Therefore, a valuation based on return on investment is less appropriate.

Environmental impact - the effects of the work on the natural environment are increasingly a factor to be considered in an investment. Environmental impact assessment of infrastructure works is written into legislation in many parts of the world.

Social impact - for charitable organizations, return on investment can be measured in non-financial terms such as quality of life or even lives saved.

Operational benefits - these could include less tangible elements such as 'increased customer satisfaction', 'boosting staff morale' or 'competitive advantage'.

Risk - all organizations are subject to business and operational risk. An investment decision may be justified because it reduces risk.

**Methodology**

The type of research used for the development and analysis of this project will be applied research of qualitative type, to obtain the information, a questionnaire of 20 items with Likert scale was applied to the 150 companies chosen according to their representativeness in the Mexican Business Information System (SIEM).

For the development of this project to evaluate the investment of the MSMEs of the commerce sector in the region of San Martin Texmelucan, first the degree of competitiveness was determined and to propitiate their entrepreneurship and innovation through the evaluation of the return on their investment.

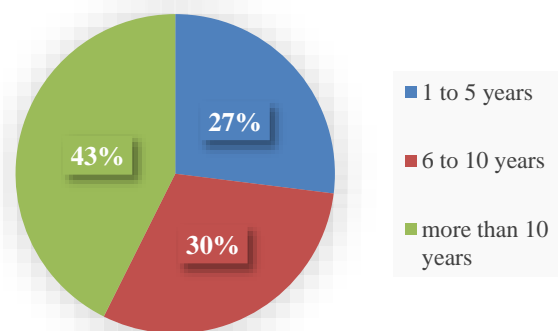
For which the characteristics of the MSMEs of the commerce sector of the SMT region were analyzed, then the factors were determined as actions to promote entrepreneurship and innovation, then the degree of investment of the MSMEs of the commerce sector was determined and finally strategies were developed to increase the investment and competitiveness of the MSMEs of the commerce sector.

**Results**

Age range of companies	Number of companies
1 to 5 years	157
6 to 10 years	177
more than 10 years	248
Total	582

**Table 1** Concentrated seniority of the surveyed companies

Source: Own Elaboration, April 2022



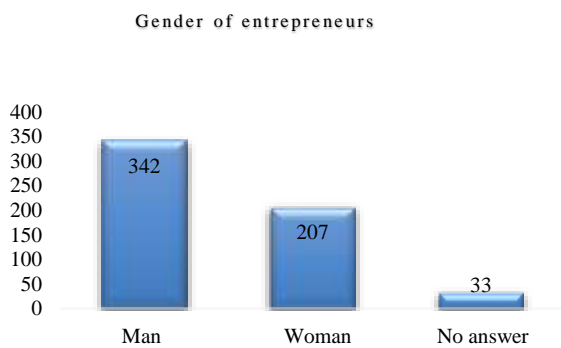
**Figure 1** Age of the companies

Source: Own Elaboration, April 2022

As can be seen in Table 1, 43% of the companies surveyed have been in business for more than 10 years, which indicates that in the commerce sector and in this region, companies have remained in the market despite the adverse situations that have arisen. Likewise, 27% of the companies are newly created, which also favors investment and entrepreneurship in the region.

Gender of entrepreneurs	
Man	342
Woman	207
No answer	33
Total	582

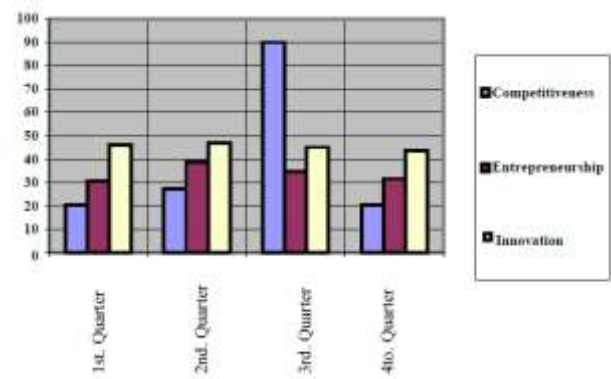
**Table 2** Profile of owner-entrepreneurs  
 Source: Own Elaboration, April 2022



**Figure 2** Gender of entrepreneurs  
 Source: Own elaboration with data from the survey applied, April 2022

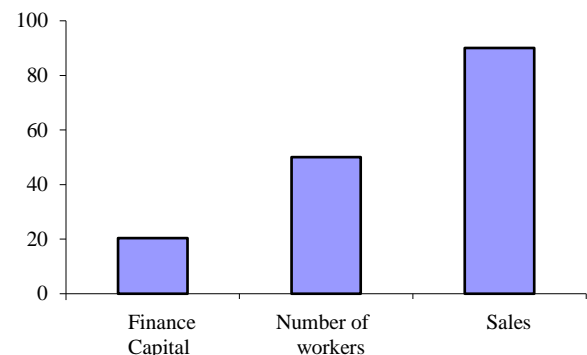
As can be seen in Figure 2, according to the MSMEs surveyed, in the San Martin Texmelucan Region there are 342 male business owners and 207 female business owners, which indicates that in the San Martin Texmelucan Region, despite being family businesses, the owners of the establishments are male.

The evaluation of the investment of MSMEs in the commerce sector in the San Martin Texmelucan region, in order to determine their degree of competitiveness and promote their entrepreneurship and innovation by evaluating the return on their investment.



**Figure 3** Survey results  
 Source: Own elaboration with survey data, 2022

As can be seen in Figure 3, in the first quarter of 2021, innovation was the factor that stood out the most in MSMEs, as they resorted to innovative activities for online sales due to the fact that due to the pandemic, restrictions on hours remained in place. Subsequently, the characteristics of MSMEs in the commerce sector of the SMT region were analyzed.



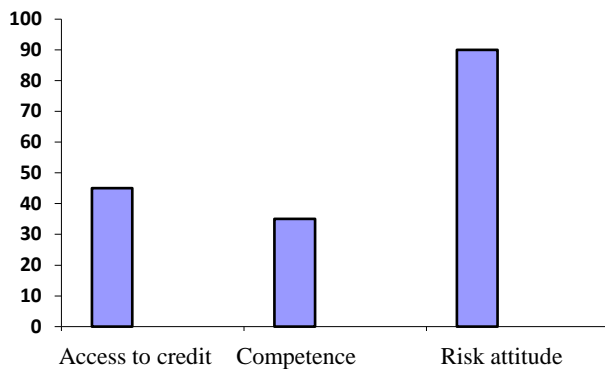
**Figure 4** Characteristics of MSMEs  
 Source: Own elaboration with data from the study, 2022

As shown in Figure 2, only 20% of MSMEs know their initial capital and what they have invested, which represents a problem since they cannot make decisions. It can also be seen that 45% of the companies have control over their workers in such a way that they can determine.

The following factors were also identified as actions to promote entrepreneurship and innovation

1. Approach
2. Energy
3. Commitment
4. Mental elasticity
5. Equipment and
6. Delivery

To determine the degree of investment of MSMEs in the commerce sector, the analysis shown in Figure 3 below was carried out.



**Figure 5.** Investment grade

Source: Own elaboration with data from the study, 2022

In Figure 5 it can be seen that one of the factors to determine the degree of investment is access to credit being a factor of 45%, also 30% determines that competition is paramount when investing as there are a variety of options to invest such as banks, stocks, cryptocurrencies, commodities, etc. that due to lack of knowledge in its operation is very difficult for companies to make investments that allow them to enhance their finances.

Finally, strategies were developed to increase the investment and competitiveness of MSMEs in the commerce sector, the most outstanding ones being the following: increase customer satisfaction, optimize work processes, seek innovation and development of new products, internationalize or expand and optimize costs.

## Conclusions

In conclusion, the analysis of the characteristics of MSMEs in the commerce sector of the SMT region allows identifying the SWOT of these companies and in this way strategies can be designed to enhance their competitiveness.

Determining the factors as actions to promote entrepreneurship and innovation, it can be observed that the companies, according to their own evolution, have incorporated a great variety of innovative aspects to remain in the market.

Likewise, determining the degree of investment of the MSMEs of the commerce sector, it can be verified that they have a null participation in the investments, since there is no financial knowledge that allows them to have access to the procedures of these.

With respect to the development of strategies to increase investment and competitiveness of MSMEs in the commerce sector, it is concluded that the listed strategies can be applied to companies in the commerce sector.

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## Influential factors in the growth of sales of MSmes

### Factores influyentes en el crecimiento de las ventas de las MiPymes

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#### Abstract

Business growth studies have been one of the central topics among many researchers. On the other hand, social media marketing plays a role in business communication, important operations and other activities. Due to the scarcity of reference information on the subject at the national level, this research explores the effects of relational capital and the capacity for technological innovation through the social network Facebook, on the growth in sales of MSmes. The research is based on the Sustainable Development Goal, Decent Work and Economic Growth. The research was quantitative and descriptive with a sample size of 47 MSmes in Mexico to which an online survey was applied. Within the results, it was found that there is a relationship between the income levels of MSmes and the use of the social network Facebook, the age of the entrepreneurs and the age or seniority of the company. It is concluded that the older the owners are and the older the company, they will have better income due to the vast experience that is possessed.

**MSmes, Facebook, Age of entrepreneurs, Age of companies, Growth in sales**

#### Resumen

Los estudios de crecimiento empresarial han sido uno de los temas centrales entre muchos investigadores. Por otro lado, El marketing en redes sociales juega un papel importante en la comunicación comercial, las operaciones y otras actividades. Debido a la escasez de información referente al tema en el ámbito nacional, esta investigación explora los efectos del capital relacional y la capacidad de innovación tecnológica a través de la red social Facebook, en el crecimiento en venta de las MiPymes. La investigación está sustentada sobre el Objetivo de Desarrollo Sostenible, Trabajo Decente y Crecimiento Económico. La investigación fue cuantitativa y descriptiva con un tamaño de muestra de 47 MiPymes en México a las cuales se les aplicó una encuesta de manera online. Dentro de los resultados se encontró que existe una relación entre los niveles de ingreso de las MiPymes y el uso de la red social Facebook, la edad de los empresarios y la edad o antigüedad de la empresa. Se concluye que mientras más edad tengan los dueños y más antigua sea la empresa, van a tener mejores ingresos debido a la vasta experiencia que se posee.

**MiPymes, Facebook, Edad de los empresarios, Antigüedad de las empresas, Crecimiento en ventas**

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## Introduction

Micro, small and medium-sized enterprises (MSMEs) play an important role in the development of economies, communities and the sustainability of a country (Fatoki, 2018). They account for more than 80 % of jobs worldwide and contribute more than 25 % of GDP, their relevance for Latin American countries is evidenced by the fact that they represent 99 % of enterprises in the region and 70 % of jobs. For years, MSMEs have been considered effective drivers of economies in general and of poverty alleviation in developing economies (Alalawneh, 2022).

MSMEs that provide employees with opportunities to develop problem-solving skills and make use of their knowledge are more likely than others to succeed in developing new products or processes. Therefore, the success of MSMEs is critical to the overall economic development of countries (Jov, 2018).

On the other hand, from the changes in the economy triggered by COVID-19 it was found that regardless of their geographical location and classification, at the cluster level, MSMEs should be aware that technology can support them in identifying responses to the new challenges posed by the pandemic economy (Del Baldo et al., 2022).

Small businesses can achieve numerous benefits by using social media marketing and SMPs. For example, they can build awareness of their brand and reputation, promote customer loyalty, expand social search ranking with page links, develop new ideas for marketing strategies, research customer behaviour and other external sources, increase and accelerate product marketing, actively pursue marketing goals, and meet influencers and groups through SM to extend the promotional period of the brand message, initiate and advance the conversation and, most importantly, differentiate themselves from the competition (Alalawneh & Al-omar, 2022).

In relation to the above, an attempt was made to identify the most important risks in SMEs as a consequence of the outbreak of the COVID-19 pandemic in Poland, where the following results were obtained: 41% of micro enterprises suffered a loss of customers, while small and medium-sized enterprises 51% and 52% respectively; the low availability of financial resources was 28% for micro, 26% for small and 21% for medium-sized enterprises; as for operational risk factors, 16% of micro enterprises still have obsolete production facilities, while for both small and medium-sized enterprises 11%, 19% of micro enterprises have a low level of innovation, 21% of small enterprises and 23% of medium-sized enterprises (Andrieu et al. , 2021).

However, currently, all countries classified as third world countries have a digital divide compared to those in the first world. These inequalities began to be witnessed with the emergence of new information technologies and the devaluation of some IT services. For this reason, many Mexican companies are making efforts to mitigate or try to eliminate the existing gap at present, with the aim of forming companies that are not only recognised worldwide for their cheap labour, but also for the great progress, mastery and creation of information technologies (Uzcanga, 2018).

Also, in these developing countries, access to finance and credit for start-ups is limited, so these factors are identified as a major challenge facing SMEs in the entrepreneurial ecosystem. Lack of access to physical infrastructure, especially information infrastructure, is also identified as a major challenge. To adapt to this turbulent environment, SMEs had to start showing higher levels of innovation, as they demonstrated that technological changes can have a positive impact on economic efficiency while providing a competitive advantage in markets (Fubah & Moos, 2022).

Similarly, many MSMEs see innovation as a risk, are afraid to innovate because of traditional, family and/or generational contexts, and do not see innovation as a process that can be systematised with agile tools. Many reasons can be investigated regarding the reasons for programme failure, and should be the focus of future research. It is suggested here that the age of the MSME leaders, the age of the MSMEs, the gender of the MSME leaders and the nature of the MSMEs (family business or not) could be explanatory factors for the observed innovation resistance (Francisco & Marinho, 2022).

Although it is known that there is research in other regions of the world that addresses the factors that affect the growth in sales of MSMEs, the scarcity of national scientific literature on the subject allows this paper to provide a view on how the age of entrepreneurs, the age or age of the company and the use of the social network Facebook influence the level of sustainable growth of sales in MSMEs. The research question is also posed: What variables affect the sales growth of MSMEs in Mexico?

Considering the above, this work is based on the Sustainable Development Goal, Decent Work and Economic Growth.

Inclusive and sustained economic growth in MSMEs can drive progress, create decent jobs and improve living standards. Moreover, with the appropriate adoption of new technologies, they can achieve higher levels of economic productivity by diversifying their customer base. Moreover, those businesses that manage to create a profitable technological infrastructure will gradually be able to expand into other markets, generate an increase in the growth of micro, small and medium-sized enterprises, and in the creation of decent jobs, thus decreasing the significant increase in unemployment.

The findings of this study show that there is both a positive and negative relationship between the age of enterprises and sales growth. Also, there is a positive relationship between businesses that make use of the social network Facebook and revenue growth. Finally, there is a positive and negative relationship between the age of business owners and revenue growth.

## Theoretical framework

### *Growth*

Sustainable growth and profitability require technological innovation and attentive control perspectives (Carneiro, 2007; Salojärvi, 2005). Also, Salojärvi (2005) mentions that growth is considered as one of the key performance measures in any industry, although there are some opposing views. Especially sustainable sales growth is considered the most important and reliable success criterion for SMEs and also the key to prosperity in modern society. Growth-related measures are more related to strategic business objectives than profit-related measures. Carneiro (2007) argues that innovation through new products and technologies has a tremendous impact on the growth of organisations. Growth plans depend on more than new products; they include innovation management and appropriate management mindsets to adopt new technologies within various processes.

He also mentions that, from an economic point of view, growth is defined as an increase in the productive capacity of a society, and results from a combination of several causes. Three main sources of growth can be identified:

1. Technological improvement: this type of improvement means that new and better methods of producing goods are possible. In addition, it is well known that improvements in processes and technology can contribute to meeting quality and process performance objectives.
2. An increase in the amount of capital. Very often, technology is deeply linked to investment because it takes the form of new machinery and better equipment.
3. An increase in the number of workers, their skills and educational levels.

Increasing sales does not mean that a company has achieved success against its direct competitors. Organisations should also increase sales by seeking and exploiting new business opportunities, i.e., by finding or building more competitive technological advances (Carneiro, 2007).

Thus, because of their characteristics and number, MSMEs play a differentiated role and are able to make a great contribution to economic development. These enterprises, particularly within traditional sectors where they represent a high percentage, must continuously adapt to change by adopting new technologies and ways to stimulate innovative effort (Carneiro, 2007).

A central challenge of the growing firm is to maintain flexibility and innovation while introducing systematic processes. Overcoming this challenge is one of the factors that characterise successful companies (Salojärvi et al., 2005).

### *Facebook*

Alalawneh & Al-omar (2022) defined social networks as "a group of Internet-based applications that build on the ideological and technological foundations of Web 2.0, and enable the creation and exchange of user-generated content". Social networking can take many forms, including content communities (i.e. YouTube), social networking sites or blogs (i.e. Facebook and Twitter) and collaborative projects (i.e. Wikipedia).

Companies often use platforms such as Facebook, Instagram, LinkedIn, Twitter, TikTok and Snapchat for brand promotion, targeting audience growth, directing them to the company's website and increasing sales by reaching new customers, interacting with current ones, and announcing new products or services (Alalawneh & Al-omar, 2022).

Parveen (2012) found that Facebook is the most widely used social network among public organisations in Malaysia and has had a strong impact on organisational performance. He also found that the adoption of Facebook had a positive effect on the sales performance of SMEs. The study also found that the use of Facebook has a positive impact on the non-financial performance of SMEs in terms of reduced costs with respect to marketing and customer service, improved customer relations and better accessibility to information.

Similarly, according to Mgeni & Nayak (2016) the use of Facebook has increased significantly among Omani entrepreneurs for business purposes following its successful role in promoting business brands worldwide through its advertising services. The results indicated that the use of Facebook for advertisements had a significant effect on SMEs' performance dimensions (efficiency, flexibility and responsiveness). The penetration rate of Facebook is higher at 86% compared to other social networking websites such as WhatsApp 80%, YouTube 40% and Twitter 6%.

### *Age of entrepreneurs*

Age determines entrepreneurial success. It can also indicate the level of human maturity. In business, age is seen as the time it takes for a person to live, reach maturity and succeed. From a religious perspective, age is defined as the time a person has spent on earth. That means that age can be related to the experience gained in a particular field, the level of maturity regulated by the laws of each country, and others. The age of 25 years - 34 years is the age range in which people establish their own private business (Chaniago, 2021).

Age can be seen as an indicator of managerial experience as well as an indicator of a person's propensity to take risks. Several studies have identified that younger managers are more likely to take risks, while older managers are more risk-averse (Chaniago, 2021).

Similarly Ahmad et al. (2022) posit that the age of an entrepreneur is relevant in the development of MSMEs, entrepreneurial culture and business operations. Younger owners are more likely to survive in SMEs compared to older owners. Also, as the age of the entrepreneur (owner/manager) in SMEs increases, they know the business better.

On the other hand, age is one of the important factors of entrepreneurial personal traits. Older entrepreneurs will have the knowledge and understand the ups and downs in their business operations. They handle pressure of any kind (e.g., lack of supplies and resources) well in contrast to younger entrepreneurs, who may not have faced such business dealings in their career. In addition, the age of the owner is important as a determinant of business planning processes. indicate that mature executives tend to have a greater commitment to the organisation (Amran, 2014).

#### *Seniority of the company*

No company can survive for a long time without making profits, so measuring the profitability of a company is mandatory to assess its growth. Enterprises use financial gains to sustain their development by financing projects, developing more products/services and supporting strategic choices (Diabate et al., 2019).

About 75 % of SMEs in South Africa fail within the first five years of start-up. Entrepreneurial resilience, which can be described as the ability to withstand and quickly overcome adversity, is an important personal characteristic in the pursuit of entrepreneurship. Resilience can be one of the drivers of entrepreneurial success (Fatoki, 2018).

Makropoulos et al. (2020) posits that firm age is an important factor in determining firm failure. For firms in Austria, lack of capital is a central factor in firm failure, which is related to firm age (Akbar et al., 2020).

#### **Methodology**

The research presented has a quantitative approach, descriptive type, with data obtained from a survey applied to 47 Mexican MSMEs, to determine the factors that influence that influence the income levels of MSMEs, as dependent variable was considered the income of MSMEs and as independent variables: Use of the social network Facebook, age of the entrepreneurs and age of the company. what level of technology is currently present in these companies and the factors that influence technology adoption, social media marketing and business sustainability.

#### **Instrument**

A semi-structured survey was developed and carried out using Google Forms.

##### Questions asked

- 1- Age of the business
- 2- Age of the business owner
- 3- Does your business use Facebook?
- 4- What is the average monthly amount of your sales?

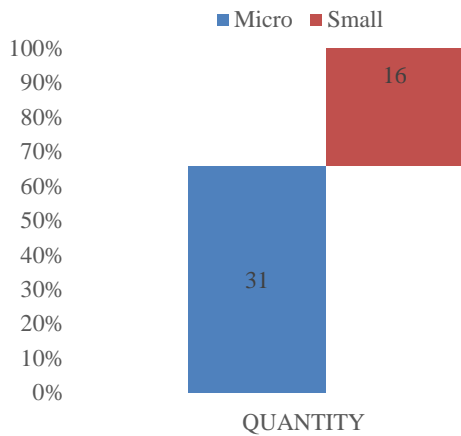
The independent variable Age of the owner was separated into 3 groups, based on the classification given by the Ministry of Health, where 14-26 years old is considered a young person, 27-59 years old is considered an adult and 60 years old and older is considered an elderly person. Also, the variable age of the company was separated into 2 groups as stated by (Makropoulos et al., 2020), the first group covers those companies considered young where their age range operates between 1 and 7 years in the market and the second group covers those businesses whose age range is from 8 years onwards.

#### **Results**

This section shows the quantitative and descriptive results derived from the surveys of MSMEs on the influence of the social network Facebook, the age of the owners and the age of the company on the level of income.

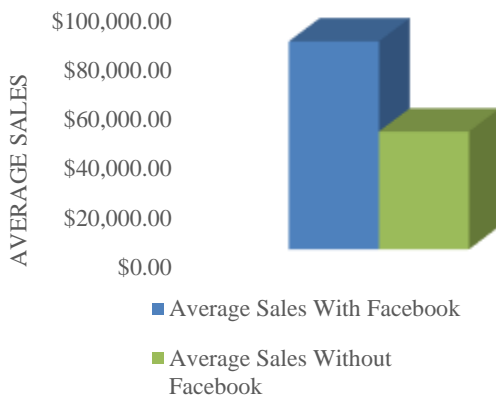
#### *Descriptive analyses*

The following section shows descriptive results on the years that MSMEs have been in the market, the age of their owners and those businesses that made use of the social network Facebook.



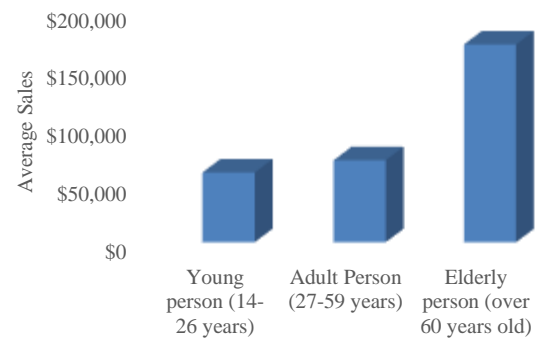
**Graphic 1** Number of companies surveyed  
Source: Own elaboration

Graphic 1 shows the number of businesses surveyed for the study. Out of a total of 47 enterprises, 31 are considered micro enterprises, while the other 16 are categorised as small enterprises, depending on the number of employees they have:



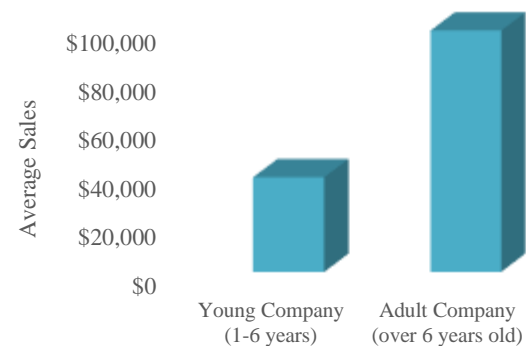
**Graphic 2** Relationship of the Facebook variable with the Sales variable  
Source: Own elaboration

Graphic 2 shows the average sales of businesses depending on whether they use Facebook or not. Where those businesses that make use of Facebook, either for marketing or online sales, have an average sales of \$84484.84, while those businesses that do not make use of Facebook have an average sales of \$47857.14.



**Graphic 3** Relationship of the variable Age of the owners with the variable Sales  
Source: Own elaboration

Similarly, Graphic 3 shows the average sales depending on the age groups of the business owners. For owners in the young age group, their average sales are approximately \$60000, while those in the adult age group have average sales of approximately \$70450, and for business owners in the elderly age group, their average sales are approximately \$170000.



**Graphic 4** Relationship of the variable Company seniority with the variable Sales  
Source: Own elaboration

Graphic 4 shows the average sales of a young company compared to the average sales of an adult company. We can see that for young companies, i.e. those that have only been in the market for a maximum of 6 years, their average sales are approximately \$38900, while for companies that have been in the market for more than 6 years, their average sales are approximately \$99259.25.

**Quantitative analysis**

Table 1 presents the results of the Logit model with the income level of MSMEs (dependent variable). The independent variables were: Facebook, age of the owner, years in the market.

To check the validity of the model, an F-test was performed and a p-value of less than 0.05 was found, which gives validity to the model and reliability to the data.

	Coefficient	Desv. Típica	Statistic t	value p	
const	-1.71423	0.613640	-2.794	0.0078	***
Facebook	0.608258	0.288053	2.112	0.0406	**
Age Owner	0.0317732	0.0126378	2.514	0.0158	**
Years in the market	0.326508	0.133349	2.449	0.0185	**
R <sup>2</sup> : 30.18% Ra <sup>2</sup> :25.31%					

**Table 1** Estimation of regression parameters  
Source: Own elaboration

As the p-values are correct, it can be stated that the economic growth of MSMEs in terms of sales can vary with a change in any of the independent variables. For example, the use of social network Facebook in MSMEs helps to increase the level of income, the older the business owners are and the more years their business has been in the market their income will also increase.

## Discussion

The objective of the present research was fulfilled as those independent variables such as Facebook social network, age of the business owners and age of the business were analysed and how they influence the revenue growth of MSMEs.

It was found that there is a positive relationship between the Facebook social network and sales growth, which reinforces the findings of Rodríguez-Abitia (2021) who states that greater use of ICT in SMEs has a positive and very significant influence on their level of growth and that 60% use social networks to boost sales of goods and services. He also argues that digital transformation is necessary for competitiveness and business sustainability. Also, in Taiwan the most popular social networks in enterprises are Facebook (94.2 %), Instagram (39.2 %), LINE (35 %) and Twitter (6.4 %), also, the percentage of revenue growth after using Facebook as a free advertising tool is from 6% to 35% in 4 months (Lin, 2021).

Similarly, the age of entrepreneurs was found to have a positive relationship with revenue growth, consistent with Diabate et al. (2019) who argue that the maturity (either chronological age or work experience) of the entrepreneur is often considered a success factor. People over the age of 55 were twice as likely as people under the age of 35 to launch a high-growth startup. As companies age, the image in the market improves, increasing the sales, profitability and financial performance of the company. However Isaga (2015) found a negative relationship between the two (age and growth), as ageing and experience, in some cases, increase the likelihood of managers taking risks.

Finally, a positive relationship was found between firm age and sales growth and is in line with Mgeni (2016) who suggests that firm age is a significant moderate predictor of variations in firm performance and sustainable growth.

## Conclusions

This research analysed the factors that influence the sales growth of MSMEs in Mexico. In conducting this research it was found that the use of the social network Facebook by companies achieves an increase in their revenue, so it can be said that social networks are considered one of the main components of ICT with the greatest impact on business among all the applications that are currently in use. Also this study found that the age of the owner also has a significant impact on sales growth, the maturity of the entrepreneur is often considered a success factor. The number of years the company has been in business has a significant impact on the companies' sales. Out of a total of 47 MSMEs, 27 had average sales of \$99259.25, while the other 20 had only \$38900. Out of a total of 15 companies that do not make use of the social network Facebook, their average sales are \$47857.14, while the rest of the companies that do make use of this tool have an average sale of \$84484.84.

## Acknowledgements

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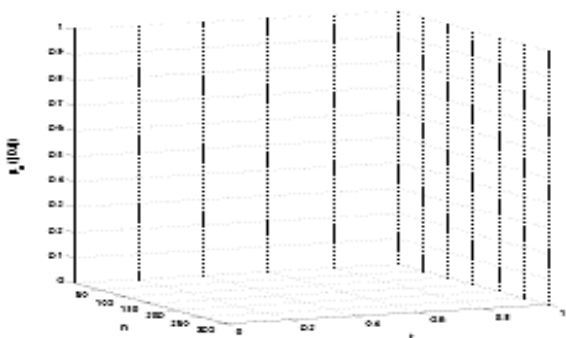
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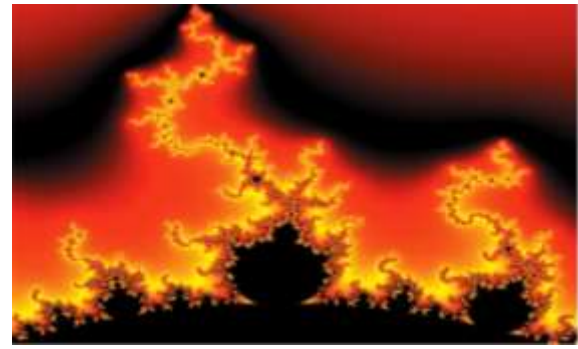
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