

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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DOI: 10.35429/JBS.2022.22.8.1.7

Received October 12, 2022; Accepted December 10, 2022

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

Citation: SÁNCHEZ-TRUJILLO, Magda Gabriela. Contingency features of manufacturing SMEs due to COVID effects. Southern Region of the State of Hidalgo, Mexico. Journal of Business and SMEs. 2022. 8-22: 1-7

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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).

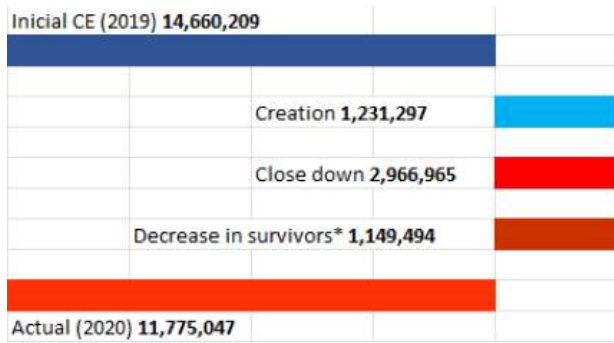


Figure 1 Surviving establishments
INEGI, 2020

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 small company, working in large company, working in small company, working in large company, working in small company, working in large company).

Metal-mechanical manufacturing	43
Construction manufacturing	21
Trade	47
Energy	1
Education	10
Total	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					
pyme	0.00	-0.23*	1.00				
salary	-0.09*	0.18*	0.20*	1.00			
Full time	0.13	0.34*	0.24*	-0.27*	1.00		
dismissal	0.08*	-0.07*	-0.01	0.14*	-0.08*	1.00	
Salary reduction	0.02	0.09*	0.09*	0.13*	0.00*	-0.07	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 χ^2	68.15***	33.33***
R ²	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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