

FACTORS THAT DETERMINE THE CLOSURE OR JEOPARDIZE THE CONTINUITY OF A MICRO AND SMALL ENTERPRISE

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Abstract. *This paper explores the factors that determine the closure or jeopardize the continuity of micro and small enterprises (MSEs). We investigated the determinants of failure from the entrepreneur's perspective using a qualitative approach, and five variables emerged. We discovered that there are internal and external variables that impact on an enterprise's continuity, which are themselves correlated. We applied a formula to determine which variable had a higher weight, considering values ranging from 0 to 1, and the asymmetry is to the right. The instrument was applied to 35,571 MSEs, 26,720 of which were open and 8,851 were closed. 33,576 are Mexican and 1,995 Colombian enterprises.*

Keywords: *Developing MSEs; closing MSEs; MSEs*

1. Introduction

In recent years, the issue of micro and small enterprise (MSE) management has gained importance at social, governmental, business and academic levels. This is due to the fact that MSEs account for the largest percent of enterprises in most countries. Being able to understand how they are managed represents an ambitious endeavor due to its own complexity (business activity, areas of influence, entrepreneur's characteristics, etc.).

The data in Mexico (Instituto Nacional de Estadística y Geografía, 2015) show that an enterprise's life cycle is very short. They calculated that a startup business lasts 7.8 years on average, then they generated a table with enterprises that reached 20 years of experience, where they projected that they may survive for another 20 years. These data lead us to another question: What are the factors that determine the closure or jeopardize the continuity of a micro and small enterprise?

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It is difficult to understand the reasons that may lead to an enterprise's closure (De-Tienne & Wennberg, 2016). Those of us who have had the opportunity to open an MSE are filled with the dream of being successful and prosperous but what factors impact on the development of an enterprise (Mir & Feitelson, 2007)? What leads us to make the decision to close it (Mason & Botelho, 2016)? The purpose of this study is to analyze the factors that determine the closure or that jeopardize the continuity of MSEs, and to compare the enterprises that do not see themselves at any risk of closure with enterprises that are active and have a high risk of closing and those that have already closed. Analysis of a large sample will allow us to critically assess the relevance of the conclusions.

The article begins with a review of literature regarding the general aspects of MSEs. Then we focus on analyzing the factors that determine the closure of enterprises. We found internal factors such as: Financial aspects, Market aspects, People and Administration. The external factors we found were: External factors and Technology. The second section contains the methodology used with a mixed approach. The third section contains the validity and reliability of the quantitative instrument. In the fourth section we present our results. And in the fifth section, the results are discussed and, finally, in the sixth section the conclusions are drawn.

2. Literature review

MSEs are economic units. Due to their behavior, they have not been well defined, which has led several researchers to reflect and ask questions about issues ranging from the conception of becoming an entrepreneur to the reasons that cause the closure of an enterprise.

Enterprises emerge through the management creation of a rational individual (entrepreneur) with certain characteristics who makes decisions in the economic sphere to increase his own profits. He is capable of generating a project (Rusque, 2005) which seeks opportunities in the market and generates formal or informal strategies that he will exploit in order to achieve his goals (Sieger, Gruber, Fauchart, & Zellweger, 2016).

The characteristics that entrepreneurs must have to be successful are grouped into four components: first, they need to be pioneers (innovation), second, they must have an entrepreneurial perspective, third, they must possess knowledge in the market and fourth, they need to be able to visualize the enterprise's performance (Ma & Tan, 2006). This definition has generated a great deal of controversy because recent studies demonstrate that small business entrepreneurs seek stability (Wagener, Gorgievski, & Rijdsdijk, 2010) over risks in innovation (Stevenson & Jarillo, 2007). We have found it difficult to describe an entrepreneur's profile, but we have found some common characteristics such as motivation (effort), human development (knowledge), creativity (innovation) and entrepreneurship (aptitudes) (Hjorth & Holt, 2016; McMullen & Kier, 2017); they are closely related to an enterprise's internal and external factors (Posada, Aguilar, & Peña, 2016); in order to create a map with an entrepreneur's characteristics,

we segmented characteristics such as educational level, age, gender (Cuervo, Ribeiro & Roig, 2007; Peña, 2017), and looked for patterns to determine what really made a person start a business.

These startup elements found in MSEs made us ask ourselves what the investigation should do and led us to an endless number of questions about the organization and its managerial processes. Due to the fact they are highly dynamic enterprises, they are able to expand or contract their operations in short periods of time and circumstances (Liedholm, 2002).

One of the first questions that an entrepreneur asks himself is how to capitalize his ideas (Cui, Sun, Xiao, & Zhao, 2016). We found that in his first stages there exists a correlation between social and/or economic support which he receives from his family (Davidsson & Honig, 2003; Edelman, Manolova, Shirokova, & Tsukanova, 2016). It is clear that this may vary when we consider the dimensions and complexity of the enterprise's operations. (Paschen, 2017). Once it starts, each stage that the enterprise finds itself in has various forms of financing, some of the most important can range from credit cards, loans from relatives or friends to customer funding (where you buy and sell with an advance payment), loans from other companies (which seek margin profits due to their surplus), leverage liabilities (lengthening payment terms to suppliers), venture capital instruments, banks and government institutions (Schmitz, 2016).

Subsequently, the effects on corporate performance (Shan, Song, & Ju, 2016) have been analyzed. It has been argued that MSEs seek differentiation as a development strategy against their competitors (Panwar, Nybakk, Hansen, & Pinkse, 2016). In their search for differentiation, some MSEs have ventured in social responsibility practices (recycling, green markets, etc.) (Leonidou, Christodoulides, Kyrgidou, & Palihawadana, 2017) as a form of positioning. Strategies have been addressed at different stages of the enterprise, from its creation (market information), dissemination of strategic knowledge (information processing), strategic knowledge of interpretation (redesign of strategies based on information) to implementation of strategic knowledge (development strategy) (Sirén, Hakala, Wincent, & Grichnik, 2017). Other studies have classified the way an MSE carries out its strategy into three phases. First, when an enterprise is new, it takes actions to detect its development needs. Second, it analyses the skills and determines actions to be mastered. And third, it puts emphasis on processes and means of controlling and developing the enterprise (Garavan, Watson, Carbery, & O'Brien, 2016). Studies have not only addressed the stages of creation and development but they have also investigated the difficulties faced by enterprises, which originate from their own vision of becoming an entrepreneur, detouring problems in a manager's socio-economic and cultural characteristics (Hsu, Wiklund, Anderson, & Coffey, 2016; Mayson, 2011); they have also analyzed the lack of performance in an organization, attributing it to internal and/or external circumstances (DeBerry-Spence & Elliot, 2012; Mano, Iddrisu, Yoshino, & Sonobe, 2012). Some authors link it to the development of a country (Nichter & Goldmark, 2009; Sleuwaegen & Goedhuys, 2002). Studies have

even tried to address the final stage of an enterprise, in other words its closure. The information regarding this stage has not been greatly addressed (Mead & Liedholm, 1998), making it difficult to generalize the results. Therefore, we hypothesize:

H1: there exist internal and/or external factors due to which the employer believes his enterprise is at risk of closing or had to close.

Several aspects that have been observed in the area of enterprise continuity are:

Financial factors. Much has been written about how funding differs in each stage of an enterprise's life cycle and structure. But MSEs have problems controlling their financial information, they have limited access to government resources and/or bank loans. This is because they do not have a financial situation analysis (Berger & Udell, 1998). The lack of access to funding causes a barrier in growth by stopping innovation in processes and products and a way of generating jobs, resulting in an enterprise's subsequent contraction (Chiwara & Dick, 2008; Lee, Sameen, & Cowling, 2015) thus initiating an increase in loans greater than an enterprise's capacity to make payment, and jeopardizing its sustainability (Iacoviello, 2015).

Market factors. One of the major limitations is the lack of literature on the subject, but studies have found that just as medium and large enterprises conducted consumer research so did MSEs (Bonney, Davis-Sramek, & Cadotte, 2016; Romano & Ratnatunga, 1995), showing that the relationship between market and enterprise performance is related to the quality and service requirements that the market demands. The major challenge MSEs face is to achieve homogeneous, attractive and innovative products for an increasingly demanding consumer (Roure & Maidique, 1986; Verhees & Meulenbergh, 2004).

People and administrative factors. Studies show that managerial skills and entrepreneurial knowledge are important factors that promote the survival of small enterprises (Bekele & Worku, 2008; Man, Lau, & Chan, 2002; Papulova & Mokros, 2007). One of the major challenges they have is attracting talented personnel to MSEs. The skills required are tied together into various stages in an enterprise's life cycle (Krishnan & Scullion, 2017) and its productivity (Onkelinx, Manolova, & Edelman, 2016); each stage which is in pursuit of professionalization may create mixed feelings among workers (Madison, Daspit, Turner, & Kellermanns, 2017): promotions within the organization make adaptation complex for an outside talent.

External factors. Environmental issues affect business opportunities, such as cost of capital (Theng & Boon, 1996; Walker, 2004); other studies show the relationship between a country's macroeconomics and its impact on micro and small enterprises. If the economy is growing nationwide, MSEs also thrive. They expand and hire additional workers to invigorate their workforce. In contrast, if the economy is bad, markets contract, people stop spending and, as a consequence, this promotes the closure or stagnation of MSEs (Mead & Liedholm, 1998). In other words, macroeconomic variations are related to the financial development of organizations (Palareti et al., 2016).

Technological factors. One of the key elements is the orientation enterprises should give based on customer requirements making innovation a process (de Brentani & Ragot, 1996). But a barrier exists in MSEs that creates stagnation causing a lack of ideas and the development of new products for local markets (Hadjimanolis, 1999), which makes owners visualize the need to invest resources to adapt products, entailing expenditures in machinery or qualified personnel to do so, and the risk of being accepted by the different stakeholders (Calantone, Kim, Schmidt, & Cavusgil, 2006; Littler, Leverick, & Bruce, 1995). The enterprise's economic stability, differentiation among its competitors (Wan Ahmad, Rezaei, Sadaghiani, Tavasszy, & Wan Ahmad, 2017), the consequences of innovation and business development are correlated, generating impacts on the organization's economy (Prajogo, 2016) which are caused when macroeconomic trends change, and enterprise trends derived from limited access to funding are adjusted (Daskalakis, Balios, & Dalla, 2017).

Limited evidence suggests that MSEs often face various internal and/or external obstacles, this issue has received some attention from researchers in areas such as administration and economy, and based on the above mentioned, we begin our research question:

H2: There exist internal factors (Financial factors, Market aspects and People and Administration) and/or external factors (External factors and Technology) that greatly influence the continuity of an MSE.

3. Methodology

The research is based on a mixed method with a *descriptive cross-cutting sectional approach* (Hernández, Fernández & Baptista, 2010): we started with a qualitative method applied by Peña, Aguilar and Posada (2017), which enabled us to generate the variables that helped us build the basis of the quantitative study.

Qualitative method: It began with a question made to an MSE's director: 1. What are the reasons for an entrepreneur to consider his enterprise to be at risk of closing or start closure? In January we carried out a pilot test of the qualitative instrument developed by Peña et al. (2017), where 10 fourth term Business and Management Engineering students from the Technological University of San Juan del Rio were trained. This study validated the semi-structured interviews made up of 6 questions, which were subsequently applied to 32 micro and small entrepreneurs. Based on the analysis of this study and *category saturation*, five factor-categories emerged which determine the closure or pose the risk for a micro and small enterprise to continue its operations, they are: Financial factors, Market aspects, People and Administration, External factors, and Technology. These variables were defined in the quantitative study.

Quantitative method: from the five variables that emerged, we were able to generate a non-experimental quantitative instrument with 29 items, measured with a 4 -point

Likert scale. In February, a pilot test of the quantitative instrument was carried out. We trained 60 sixth semester Business and Management Engineering students from the Technological University of San Juan del Rio to collect and capture data in accordance to the protocol. 82 valid questionnaires were collected from 52 open enterprises and 29 that had closed. The instrument demonstrated a reliability index, so in March, with the help from members of the Latin American Network of Business Administration, the survey was carried out by using 35,571 valid questionnaires. 26,720 questionnaires were applied to MSEs that are open. 8,851 were applied to MSEs that had closed. These MSEs were located in 113 municipalities and grouped into 74 zones. 9,413 students from various universities helped carry out this survey. 33,576 questionnaires were applied to Mexican enterprises and 1,995 to Colombian enterprises.

A paper version of the instrument was designed to be answered by the enterprise's director. However, depending on the director's educational level, students were allowed to read and fill it out. Each student that carried out the survey was also responsible for capturing the data collected to a link online, created ex profess. The students were also asked to take pictures of the directors filling out the survey and a picture showing the trade of the business.

The next stage was carried out in April when verification and data clean up was done. Each researcher corroborated each survey making sure it was properly captured, and a picture was attached as a validation process. Errors made while capturing the data were corrected manually by the researchers.

Based on the number of micro-enterprises (4,980,159) in Mexico (Instituto Nacional de Estadística y Geografía, 2016), a 95% reliability rate with a 2% error margin was obtained in 2 400 samples. Therefore, we can consider the results to be valid.

3.1 Data analysis

We carried out an *exploratory analysis* in order to establish a behavioral pattern contemplating the values presented in Table 1.

TABLE 1 Statistics of variables

	Financial aspects	Market aspects	People and administration	External factors	Technology
Mean	1.6702	1.5646	1.3353	1.7234	1.2126
Median	1.7100	1.5000	1.2900	1.8800	1.0000
Mode	2.00	2.00	1.00	2.00	.00
Standard deviation	.77875	.74417	.76294	.81046	.92842

*35571 valid cases, none excluded

We then calculated Cronbach's Alpha, which suggests that the responses are consistent, demonstrating that the instrument contains a high degree of reliability, with Alpha=0.952. To check for Alpha's reliability, we performed a t test (see Table 2), where we found it was highly significant.

TABLE 2. T square test Hotelling*

Hotelling T square	F	GL1	GL2	Sig
33689.085	1202.268	28	35542	.000

*35570 valid cases, 1 excluded

We performed a hypothesis contrast test where the following results were found:

TABLE 3. Summary of the hypothesis contrast test.

	Null hypothesis	Test	Sig.	Decision
1	The medium of internal factors are the same between the categories of status of the company	The median test for independent samples	0.000	Reject the null hypothesis
2	The medium of external factors are the same between the categories of status of the company	The median test for independent samples	0.000	Reject the null hypothesis

Asymptotic meanings are displayed. The significance level is .05

In Table 3 we test for differences between the way internal and external factors are pondered by active and closed companies, active companies subdivided in those that feel at risk of closure and those that feel safe. We can see that both hypotheses are significant, so we can say that the effect of the internal factors (H1) and external factors (H2) is different in closed, safe and at risk companies.

4. Results

After verifying the validity of the instrument and with the obtained results, we sought to develop a formula which will enable us to measure the degree by which entrepreneurs consider their business to be at risk of closing or compelled to close (EC). This will allow us to analyze trends and investigate which variable was given greater priority and thus envision possible recommendations. For this purpose, we have designed the following mathematical expression:

$$EC = 1 - \frac{\sum_1^n (x_i - x_1)}{x_n - x_1}$$

This value represents a coefficient and provides an overview of the asymmetry of the results (EC). The formula transforms each of the n items x_i to a standardized value between 0 and 1 (x_n is the last ordered item or maximum, and x_1 is the first ordered or the minimum value). Considering that the values range from 0 to 1, the asymmetry is to the right, i.e. toward the higher factor that most influences an MSE's continuity from the entrepreneur's point of view.

- a) Entrepreneurs of active MSEs which do not feel at any risk of closing (in our study 23,650 MSEs were analyzed representing 66.49% of the total samples) mentioned that the external variable factor had the highest impact on MSEs' continuity, with 0.57 of EC.

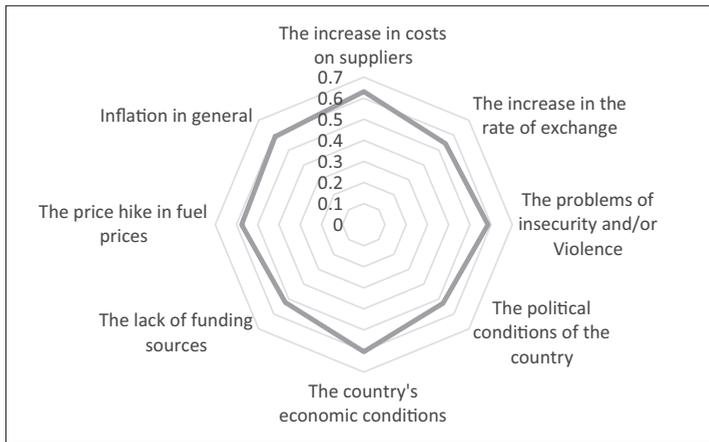


FIGURE 1. External factors

- b) Entrepreneurs of active MSEs which feel at risk of closing (we analyzed 3,070 MSEs, which represented 8.63% of the total samples) mentioned that the external variable factor had the highest impact on an MSE's continuity, with 0.66 EC.

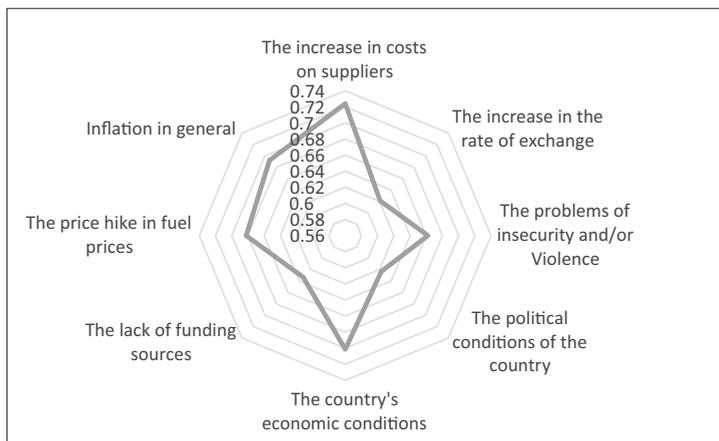


FIGURE 2. External factors

- c) The entrepreneurs of closed MSEs (we analyzed 8,851 MSEs, which represented 24.88% of the total samples), mentioned that variable 4, Financial aspects had the highest impact on an MSE's continuity, with a 0.58 EC.

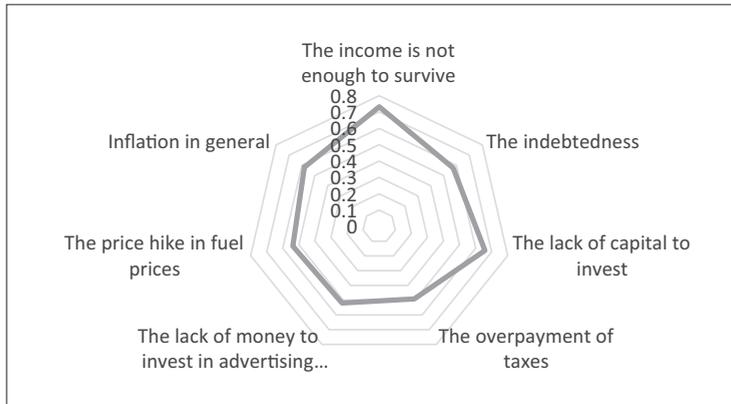


FIGURE 3. Financial aspects

We found that active companies had been more influenced by an external variable factor, and the variables that influenced companies that had closed were mainly influenced by financial aspects. In both results we found that the two variables have a strong correlation as shown in Table 4, and both variables (External factors & Financial aspects) have a greater impact.

TABLE 4. General Results

Variables		Correlation
Market aspects	Financial aspects	0.64
People and Administration	Financial aspects	0.60
External factors	Financial aspects	0.69
Technology	Financial aspects	0.45
People and Administration	Market aspects	0.66
External factors	Market aspects	0.56
Technology	Market aspects	0.50
External factors	People and Administration	0.53
Technology	People and Administration	0.58
External factors	Technology	0.50

5. Discussion

To be able to determine why an enterprise closes has been a complicated task. Investigations found the existence of systematic and unsystematic risk variables. The first kind of variables are external variables (the economic environment in general) and the sec-

ond kind are internal variables (effective management), both of which impact on enterprises (Everett & Watson, 1998). On the other hand, there exist researchers who have sought to design models in order to predict the closure of companies. This has become extremely complex in MSEs due to the lack of efficient internal management, and above all in financial administration (Keasey & Watson, 1987). In several investigations, this issue was addressed by a “multi-logit analysis, survival analysis, machine-learning decision trees, expert systems and neural networks—which are beyond the scope of this study. However, literature does not provide a clear overview of the application of alternative methods to the topic of business failure prediction” (Balcaen & Ooghe, 2006, p. 87), and with the samples obtained, it has been difficult to generalize the results. In our study, we have found that there are internal and external factors which the employer believes put his enterprise at risk of closing or that had made them close; the internal factors with an EC of 0.55 had a greater impact on an enterprise’s continuity than the external factors, with an EC of 0.52.

We have found that active companies and those that see themselves at high risk of closing feel that this situation is caused by external factors, with an EC of 0.66. In contrast, entrepreneurs manifested that their closure was due to financial aspects, with an EC of 0.58, we can also analyze how both variables are correlated and how they impact on MSEs.

5.1 Practical Implications, limitations and conclusion

The study we carried out using a quantitative approach allowing the variables to emerge. On the contrary, previous investigations have had problems generalizing their studies due to the limited number of MSEs surveyed. The size of the samples we obtained during our investigation allowed us to visualize the real context of active or closed Mexican and Colombian enterprises and how they are consistent in visualizing that external factors – an increase in costs on behalf of their suppliers, an increase in exchange rates, problems in insecurity or violence, their countries political conditions, lack of funding, an increase in the cost of fuel and inflation in general – affect the continuity of their enterprises. Enterprises that closed consider that their overall financial aspects such as insufficient income, debts, lack of capital to invest, high taxes, the lack of money to invest in advertising and publicizing their enterprises, an increase in the cost of fuel and inflation are the most relevant factors leading to the closure of their enterprises.

Future studies will allow us to carry out segmentation considering an entrepreneur’s characteristics, in order to investigate how his profile may affect the continuity of MSEs.

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