## Micro and small enterprises and their impact on external financing

## La micro y pequeña empresa y su impacto ante el financiamiento externo

AGUILAR-PÉREZ, Esmeralda†\*, HERNÁNDEZ-HERNÁNDEZ, María Elena and IRIGOYEN-ARROYO, Luis Ernesto

Tecnológico Nacional de México Campus San Martín Texmelucan, Mexico.

ID 1<sup>st</sup> Author: *Esmeralda, Aguilar-Pérez /* **ORC ID:** 0000-0001-6794-9630, **Researcher ID Thomson:** O-3376-2018, **CVU CONACYT ID:** 625314

ID 1<sup>st</sup> Co-author: *María Elena, Hernández-Hernández /* **ORC ID:** 0000-0002-2037-1621, **Researcher ID Thomson:** ABC-1173-2021, **CVU CONACYT ID:** 472901

ID 2<sup>nd</sup> Co-author: *Luis Ernesto, Irigoyen-Arroyo /* **ORC ID:** 0000-0001-7172-3802, **Researcher ID Thomson:** O-8193-2018, **CVU CONACYT ID:** 927536

**DOI:** 10.35429/JM.2021.9.5.19.22 Received July 20, 2021; Accepted December 30, 2021

#### **Abstract**

The present research is carried out with the purpose of analyzing what are the sources of extrabank financing of micro and small enterprises, the study was developed through a statistical analysis to present the failures of the financial system, which have an effect on the participation of the directors of micro and small enterprises in extrabank loans. In this research the participants that were studied were the micro and small companies of the commercial sector of the municipality of San Martin Texmelucan, according to the SIEM there are 1127 registered companies that were taken as a base, of which 45% are commercial, 30% of services and the rest are industrial. The failures of the demand of the financial system, based on descriptive statistics and means, it can be perceived that the most noticeable difference appears in Failure 4: Mismanagement of resources, in Failure 2: Self-exclusion, and Failure 3: Risk aersion, and that these three failures have a significant effect on extrabank financing among the directors of MSEs.

### MyPe, Extra-bank financing, Financial decisions

#### Resumen

Se realiza la presente investigación con el propósito de analizar cuáles son las fuentes de financiamiento extrabancario de la micro y pequeña empresa, el estudio se desarrolló mediante un análisis estadístico para presentar las fallas del sistema financiero, las cuales tienen un efecto en la participación de los directores de la micro y pequeña empresa en créditos investigación extrabancarios. En esta participantes que se estudiaron fueron las micro y pequeñas empresas del sector comercial del municipio de San Martin Texmelucan, de acuerdo al SIEM existen 1127 empresas registradas que se tomaron como base, de las cuales el 45% son comerciales, 30% de servicios y el resto son industriales. Las fallas de la demanda del sistema financiero, en base a la estadística descriptiva y las medias, se puede percibir que la diferencia más notoria aparece en la Falla 4: Mal manejo de recursos, en la Falla 2: Autoexclusión, y la Falla 3: Aversión al riesgo, y que estas tres fallas tienen un efecto significativo en el financiamiento extrabancario entre los directores de las MyPe.

# MyPe, Financiamiento extrabancario, Decisiones financieras

**Citation:** AGUILAR-PÉREZ, Esmeralda, HERNÁNDEZ-HERNÁNDEZ, María Elena and IRIGOYEN-ARROYO, Luis Ernesto. Micro and small enterprises and their impact on external financing. Journal-Microeconomics. 2021. 5-9:19-22.

<sup>\*</sup> Correspondence to Author (E-mail: esmeralda.aguilar@smartin.tecnm.mx)

<sup>†</sup> Researcher contributing first author.

#### Introduction

Without getting involved in the particularities that each country establishes for their definition, the level of development they present or their regional location, micro, small and medium-sized enterprises (MSMEs) currently constitute a fundamental sector for the world economy and its functioning. According to studies from various sources, such as the International Labor Organization (ILO) and the German Agency for International Cooperation (GIZ, for its acronym in German), MSMEs generate about 63% of total employment in the economy (Rojas, 2017), making the sector a fundamental element of the global economic gear today.

To evidence such importance in the Latin American case, it is necessary to review the figures in Table 1, which shows the socioeconomic relevance that this type of business organization represents for the region. Paradoxically, there is little academic and research production supported by empirical evidence that addresses such companies, a situation that demonstrates the need to study their structure and management aspects, particularly in the case of micro and small enterprises (MSMEs) in the region, for which there is an even greater scarcity of figures and analysis.

#### Methodology

The study had a sample of 43,044 volunteer subjects located in 92 areas of Mexico, Colombia, Argentina, Peru and Ecuador. Information was collected between February and June 2021; the interviewer contacted the participant and asked him/her to answer an online form (16.8%), by telephone (35.1%) or in person (48.1%). The present analysis shows the results of the study developed in San Martin Texmelucan, Puebla, in which 399 surveys were applied, due to the current pandemic this was the maximum number of data possible; in those places where comparisons are made with Latin America, that is, specifically to the areas involved in the general study located in Colombia, Ecuador, Peru, Argentina and especially in Mexico.

#### Results

To address the objective of the article, a comparative table of descriptive statistics from the Relayn study (Aguilar et al., 2021) is presented, so that the results can be contextualized in a broader scope. The second section presents a list of the failures that have an effect on extrabank financing, noting which have a statistically significant effect. Finally, the relationship between the variables is shown by means of a network graph that makes the correlations between them visible.

Differences between failures and extrabank financing of M&E managers. To compare the demand failures of the financial system, in Table 1 we present the basic descriptive statistics of both populations and the difference between the means. We find that the most notable difference appears in Failure 4: Mismanagement of resources.

		San Martín Texmelucan		Latir	Latin America				
Variable	Items	Media	Standard Deviation	Media	Standard Deviation	Difference			
Failure 1: Financial literacy	5	3.98	0.701	4.10	0.732	-0.118***			
Failure 2: Self- exclusion	6	3.81	0.756	3.87	0.813	-0.054			
Failure 3: Risk aversion	4	2.97	1.164	2.64	1.094	0.326***			
Failure 4: Mismanagement of resources	14	4.03	0.484	4.03	0.607	0.001			
Extra-bank financing	3	3.21	1.075	2.68	1.185	0.526***			
Significance codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' '1  The range of the scales of the five variables is from 1 to 5.									

**Table 1** Financial system demand failures and extrabank financing: Descriptive and comparative between San Martín Texmelucan and Latin America

Source: Own elaboration with data obtained with the research, 2021

Assessment of the effect of demand failures on the propensity of MSE managers in San Martin Texmelucan to apply for extrabank financing.

There is a discussion about the validity of performing linear regressions on ordinal variable scales. While it is clear that it is not pertinent to apply it to ordinal items, results with more than 10 levels are usually accepted as a continuous variable. For the purposes of this study, the regression shown in Table 2 shows a regression of the four failures in extrabank financing and the results were assessed both assuming continuity and keeping the variable as ordinal with 15 levels of response.

Variables	Coeficient	Error.std.	t	p.valo r			
Constant	1.803	0.383	4.710	0***			
Failure 1: Financial literacy	-0.285	0.093	-	0.002			
			3.070	**			
Failure 2: Self-exclusion	0.056	0.080	0.701	0.484			
Failure 3: Risk aversion	0.505	0.041	12.34	0***			
			4				
Failure 4: Mismanagement	0.203	0.117	1.733	0.084.			
of resources							
Significance codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1							

Tabla 2 Regresión lineal de San Martín Texmelucan y Latinoamérica

Source: Own elaboration with data obtained with the research, 2021

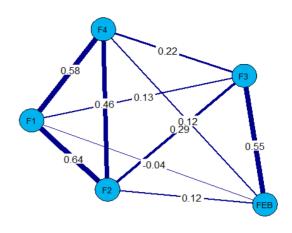
Failure 1 consists of having little knowledge, so a negative coefficient indicates that the failure is present.

The model analyzed from a parametric perspective has a residual standard error of 0.888 with 389 degrees of freedom, an adjusted  $R^2$  of 0.317 (F=46.7 with 4 and 389 g.l., p-value=0). Taking the response variable as ordinal, the dispersion parameter taken for the Gaussian family was 0.789; the null deviation was 454.1 (393 g.l.) and the residual deviation was 306.9 (389 g.l), from which it can be deduced that the model is adequate.

It can be observed in Table 2 that only Failure 2: Self-exclusion, and Failure 3: Risk aversion, have a significant effect on extrabank financing among M&E managers in San Martin Texmelucan.

Analysis of the correlations between the study variables.

To better assess the relationships between the variables, their partial correlations are presented graphically by placing the nodes of the network according to the algorithm of Fruchterman and Reingold (1991). The distances between the nodes in graph 1 denote the intensity of the correlation, so that the closest nodes are those that are most closely related, so that the groupings can be seen more clearly.



**Graphic 1** Network diagram of the correlations between the study variables

Source: Own elaboration with data obtained with the research, 2021

#### **Conclusions**

As can be seen in the results of this research, the financing of the companies in the municipality of San Martin Texmelucan, according to what was revealed in the surveys applied, indicates that the owners, owners and managers of the companies resort to extra-bank financing, since this, in the mind of the businessman, presents an easier and faster procedure than the bank, which causes some problems such as: the high cost of financing, the loss of the goods that were pledged by such financial operation, to mention a few.

Therefore, to compare the failures of the demand of the financial system of San Martin Texmelucan with those of Latin America, based on the basic descriptive statistics of both populations and the difference between the means, it can be perceived that the most notorious difference appears in Failure 4: Mismanagement of resources, this means that the Texmeluquense entrepreneur still does not have an adequate decision making when investing and spending, since most of their resources are spent on expenses that do not generate a future return, likewise it causes them not to have access to the acquisition of merchandise that can meet their demand.

Regarding the impact of these financial decisions for the companies in the municipality of San Martin Texmelucan, it is observed that Failure 2: Self-exclusion, and Failure 3: Risk aversion, have a significant effect on extra-bank financing among the directors of MSEs in San Martin Texmelucan.

AGUILAR-PÉREZ, Esmeralda, HERNÁNDEZ-HERNÁNDEZ, María Elena and IRIGOYEN-ARROYO, Luis Ernesto. Micro and small enterprises and their impact on external financing. Journal-Microeconomics. 2021

This means that an area of opportunity for the development of these entrepreneurs would be training in financial issues, specifically in formal bank financing, which would allow Texmelucan entrepreneurs to change their perspective to enter the formality of financing, perceiving their own economic and financial benefit, which would allow their businesses and companies to have a better position in the market and present a satisfactory economic recovery in favor of competitiveness.

#### References

Aguilar, O. C., Peña, N. B. y Posada, R. (2021). Método y resultados generales del estudio de cultura financiera en microempresarios de Latinoamérica.

Aguilar, O. C., Peña, N. B. y Posada, R. (2021). Cultura financiera en la micro y pequeña empresa de Latinoamérica (pp. 1–7). Ciudad de México: McGraw-Hill.

Banco Interamericano de Desarrollo. (2017). Micro, pequeñas y medianas empresas. Retrieved from: https://idbinvest.org/es/soluciones/servicios-deasesoria/micro-pequenas-y-medianas-empresas

Bartoletti, M., Carta, S., Cimoli, T. & Saia, R. (2020). Dissecting Ponzi schemes on Ethereum: Identification, analysis, and impact. Future Generation Computer Systems, 102, 259–277. Retrieved from: https://doi.org/10.1016/j.future.2019.08.014

Cárdenas, M. (2020). Introducción a la economía Colombiana (4a ed.). Bogotá: Alpha.

Castro, F., Londoño, D., Parga, Á. J. & Peña, C. (2020). ¿Qué factores inciden en la demanda de crédito de la microempresa en Colombia? (Archivos de Economía No. 522).

Enciclopedia de los municipios y poblaciones de México. (2021). http://inafed.gob.mx/work/enciclopedia/EMM2 1puebla/municipios/21132a.html

Fruchterman, T. M. J. & Reingold, E. M. (1991). Graph drawing by force-directed placement. Software: Practice and Experience, 21(11), 1129–1164. https://doi.org/10.1002/spe.4380211102

Instituto Nacional de Estadística y Geografía (INEGI). (2021). Directorio estadístico de unidades económicas (DENUE). Aguascalientes, México. Retrieved from: http://www3.inegi.org.mx/sistemas/mapa/denue/default.aspx

Lora, E. (2019). Economía esencial de Colombia. Bogotá: Penguin Random House. Nicholson, W. (2008). Teoría económica: principios y aplicaciones (9a ed.). México: Cengage Learning.

Orueta, I. (2017). Importancia económica de las PYMES en las economías iberoamericanas. La financiación de las micro, pequeñas y medianas empresas a través de los mercados de capitales en Iberoamérica (pp. 23-54).

Rojas, L. (2017). Situación del financiamiento a pymes y empresas nuevas en América Latina. Santiago de Chile: Cieplan.

Romero y Ramírez (2018), Relación de la toma de decisiones financieras con el nivel de conocimiento financiero en las MiPyMes, https://www.redalyc.org/journal/6099/609964272004/html/

Sistema de Información Empresarial Mexicano. (2021)

https://siem.economia.gob.mx/ui/pubconsultaes tablecimientos

Sistema Nacional de Información Municipal. (2021). http://www.snim.rami.gob.mx/

ISSN-On line: 2531-2987 RINOE® All rights reserved.

AGUILAR-PÉREZ, Esmeralda, HERNÁNDEZ-HERNÁNDEZ, María Elena and IRIGOYEN-ARROYO, Luis Ernesto. Micro and small enterprises and their impact on external financing. Journal-Microeconomics. 2021