PROJECT, DESIGN AND MANAGEMENT

https://www.mlsjournals.com/Project-Design-Management

ISSN: 2683-1597

How to cite this article:

Muñoz Bonilla, H. A. & Soriano Flores, E. (2023). Formulación de proyectos en Mypes: evidencia empírica de la ausencia de un modelo práctico. *Project, Design and Management, 5*(1), 27-43. doi: 10.35992/pdm.5vi1.1152.

FORMULATION OF PROJECTS IN MYPES: EMPIRICAL EVIDENCE OF THE ABSENCE OF A PRACTICAL MODEL

Hugo Alejandro Muñoz Bonilla

Lumen Gentium catholic university foundation (Colombia) <u>hugoamunoz@unicatolica.edu.co</u> - <u>https://orcid.org/0000-0001-8757-3909</u> **Emanuel Soriano Flores** Universidad Internacional Iberoamericana (Puerto Rico) <u>emmanuel.soriano@unini.org</u> - <u>https://orcid.org/0000-0002-8747-5679</u>

Abstract. This is an investigation that addresses the activity of formulating organizational management projects (PGO) in micro and small enterprises (Mypes), with a quantitative, correlational and cross-sectional investigative exercise, within a case study, to test the hypothesis that: The greater the number of theoretical elements used by a microentrepreneur in the formulation of their projects, the greater the development of the determining factors of business survival, a process that allows determining the existence or not of a model adopted to the operational particularities of this type of business. , using an ad hoc instrument validated by expert judgment, in two stages (design and calibration), with CVC of 0.98, Fleiss de Kappa for construct and objectivity of 0.95, with a Pearson temporal stability coefficient of 0.95 and alpha of Cronbach of 0.81. The result indicates that in the case of the population under study, there is no model adapted and used mostly by Mypes, in addition, with a Spearman's Rho of 0.617, a strong correlation between the variables studied is evidenced, which allows to contribute the concept to incorporate the Operational Distinctive Features (RDO) of the Mypes to the development of management theories adapted to their operational realities for the formulation of PGO.

Keywords: projects, micro and small companies, SMEs, business management.

FORMULACIÓN DE PROYECTOS EN MYPES: EVIDENCIA EMPÍRICA DE LA AUSENCIA DE UN MODELO PRÁCTICO

Resumen. Esta es una investigación que aborda la actividad de la formulación de proyectos de gestión organizacional (PGO) en micro y pequeñas empresas (Mypes), con un ejercicio investigativo de enfoque cuantitativo, correlacional y transversal, dentro de un estudio de caso, para probar la hipótesis que: A mayor cantidad de elementos teóricos utilice un microempresario en la formulación de sus proyectos, mayor desarrollo de los factores determinantes de supervivencia empresarial logra, proceso que permite determinar la existencia o no de un modelo adoptado a las particularidades operativas de este tipo empresarial, utilizando para ello un instrumento Ad hoc validado por juicio de expertos, en dos etapas (diseño y calibración), con CVC de 0.98, Fleiss de Kappa para constructo y objetividad de 0.95, con coeficiente de estabilidad temporal de Pearson de 0.95 y alfa de Cronbach de 0.81. El resultado indica que en el caso de la población objeto del estudio, no existe un modelo adaptado y usado mayoritariamente por las Mypes, además con un Rho de Spearman de 0.617 se evidencia una correlación fuerte entre las variables estudiadas, lo que permite aportar el concepto de incorporar los Rasgos



Distintivos Operacionales (RDO) de las Mypes al desarrollo de teorías gerenciales adaptadas a sus realidades operativas para la formulación de PGO.

Palabras clave: proyectos, micro y pequeñas empresas, pymes, gestión empresarial.

Introduction

Organizational management projects (OMP) are the instruments used by entrepreneurs and businessmen to modernize their structures and processes in order to maintain or improve business competitiveness indexes, seeking to achieve operational survival in the participating market. Such a process has the same objective in different types of companies, and yet, although they pursue the same type of purpose, the operating conditions and availability of resources constitute a particular reality that in many cases can be considered too adverse for the project and therefore for the entrepreneur who formulates and develops it.

Within such a nature of heterogeneous and particular conditions, business managers resort to the various theoretical approaches to management, either implementing them as a single model for their administrative management or harmonizing elements and principles of different approaches, thus originating hybrid models appropriate to the particularities of both the organization and the style of leadership and management applied therein.

In such a scenario of formulation of the OMPs, it is inferred that the size of the company in which the administrative management exercise is intended to be carried out is one of the real limitations for the adoption of a structured model of project formulation, especially for micro and small enterprises (MSEs) where the capacity of their resources is more limited (Rey Campero, 2016), since the larger the size of the company that is the object of the administrative intervention, the more analysis and understanding of the intervening variables is required in proportion to the complexity of the organizational and operational structure that is being intervened, hence the project model used will require the same proportional amount of resources for its application (Gallego & Cáceres, 2015).

Now, given the recognized importance of the Mypes in the economies of the countries (Campos, 2013; Cajigas Romero, Haro, & Ramírez, 2017; Vera Muñoz, Vera Muñoz, & Martínez Méndez, 2020) and its low level of business survival in a country like Colombia where the rate of operational continuity reaches 60% for the first year of existence (Confecámaras, 2018) where one of the causes of operational failure is linked to the scarcity of economic resources and lack of financing opportunities, 2017) and others have their origin from the project structure itself in which they originate as entrepreneurial processes, as pointed out by the Asociación Colombiana de Pequeños Industriales - ACOPY (2018) when referring to a business failure rate of 45% of those constituted with the financial support of the national government and its support funds for Colombian entrepreneurs.

This coincides with the findings of Jiménez (2014), Serrano Montiel, Borgucci García, Vera Colina (2013), Fracica Naranjo, Matíz B., Hernández and Mogollón (2011), in that although the economic structure of MSMEs (which are included in the analysis of MSMEs) has deficiencies, new financing modalities for microenterprises are also identified, with public and private programs, which allows us to assume that the cause of low survival is not only financial. And in the understanding that it is natural in the development of a company's operations to present difficulties and situations that require administrative management to overcome them, this gives rise to the need to formulate and design successful PGOs that optimize the scarcity

of resources, since no matter how much money is available for an improvement plan, if the plan is poorly formulated or if there is no detailed plan, it is destined to be a failure and a waste of resources for the company.

The above is evidenced by the report of (2018) who indicate that micro-enterprises carried out PGO, have an intervention tendency in personnel training close to 24%, machinery and equipment 22% and new technologies 22%, coinciding in their project actions with small companies that on average invested 29% of the PGO in machinery and equipment, and also 19% in personnel training, but even so the failure rate of this sector remained high.

Therefore, it could be thought that the microentrepreneur's difficulties are in the formulation and design of the PGO, in this regard Cajigas Romero et al. (2017) points out that in the profile of the support provided by financing entities to microentrepreneurs, an average of 30% of them have an undergraduate degree in progress and 40% have a completed undergraduate degree, with a failure rate of 42% in both cases, which indicates that the cause is not entirely linked to the entrepreneur's level of academic training, this indicates that the cause is not entirely linked to the entrepreneur's level of academic training, thus leading us to look at the lack of project management capacity of microentrepreneurs, as Saavedra (2007) indicated when presenting the phenomenon as a social debt of management schools and a constant request of the business community.

However, the above could be read out of context in view of the existence of project formulation methodologies, widely disseminated from academic environments, such as the logical framework methodology (Ortegón et al., 2005), the GIDPI model (Velásquez Restrepo et al., 2017), the modeling of projects by objectives with a focus on the Determining Factors of Business Survival (FDSE) (Angelelli & Prats, 2005), the formulation of entrepreneurship and investment projects from the perspective of business feasibility and its articulation to productivity clusters Arboleda (2001, 2013), Meixuerio and Pérez (2008), Méndez (2012), Padilla (2016) who take elements of the Logical Framework (LF) for the origin of the formulation of projects with the purpose of business creation.

Also in the academy there are contributions from the *Project Management Institute* through the different versions of its *PMBOK* (2013; 2017) model which, although it addresses with great breadth and precision the project formulation in large companies, it also lays the general foundations of the activity at all business operational levels. Thus, Ortega Zarza (2015) explains the application of the PMBOK for auditing project execution in small and medium-sized companies.

However, the evidence of the existence of theoretical models for project formulation does not imply that they are being fully used in MSMEs, and at the same time, the contextual evidence mentioned so far allows considering that, if there are successful results obtained at the level of micro and small enterprises in their OMPs, these should be related to the use of a widely disseminated and applied project model in the MSME sector or, failing that, to the use of theoretical and conceptual tools that seek to explain the particularities of the enterprises in order to facilitate their intervention and development.

Such particularities are their Operational Distinctive Features (ODR) that can be identified from the nature of the SMEs' business model (Osterwalder, 2016), the competitive advantage developed (Porter, 1990), the structural way in which they make their value proposition operational (Porter, 2009), the strengths and weaknesses presented by the company (Serna Gómez, 2008), the way in which it plans the control and follow-up of its projects (Kaplan & Norton, 2004), since in any of the cases it is evident that it is positively impacting its FDSE (Mas Verdú et al., 2015; Talebi et al., 2015; Confecámaras, 2017; Parra Alviz et al., 2017).

Therefore, by identifying a gap in the current knowledge regarding the identification of successful methodologies applied by MSMEs in the formulation of their PGO oriented to develop better business survival rates, it is necessary to prove that the more theoretical and conceptual tools an entrepreneur applies in his PGO, the greater the development of his FDSE for the first years of the company's life.

The proposed research is relevant because it can contribute to the identification of a design model fully adjusted to the operational particularities of the business sector studied, or, failing that, it can indicate from its findings the theoretical bases on which the development of a model adjusted to the characteristics of small and medium-sized enterprises should be based.

Method

For the development of the present research, a quantitative approach is adopted, within a non-experimental exercise of correlational and transversal character, which is supported by the principles of the post-positivist research paradigm, in the understanding that due to the characteristics of the studied phenomenon, a relative truth can be found and susceptible to be falsified in the future, but which in turn validates the formulation of the specific qualitativedescriptive objectives, which leads to a research design of empirical character which begins with a documentary research and then addresses an observational process of evidence of the behavior of the formulation of projects, to subsequently perform a validation of hypotheses from the information obtained from the observational process, in a representative sample of the phenomenon that finally allows to rationalize the results in a contribution to the current state of the art (Cruz et al., 2017; Universidad de las Américas & Ramos, 2015).

Based on the above, assuming that a structured model of formulation and design of a PGO is in synthesis a unique and determined sequence of actions and activities, usually non-repetitive, that propose the coordination of multiple resources in a company to achieve a defined objective, in a determined time and cost (Instituto Vasco de cualificaciones y formación profesional et al., 2010), the existence of an independence between the variable FDSE with respect to the variable Distinctive Operational Traits (RDO) that are taken into account by an entrepreneur when formulating and designing his PGO will be sought, for this purpose the following alternative hypothesis is proposed:

• Hi: The more distinctive operational features a microentrepreneur includes in the formulation of his or her PGO, the higher the indices of determinants of business survival he or she develops.

For the above, a case study is used with a non-probabilistic sample of typical cases for quantitative-deductive purposes (Hernández Sampieri et al., 2014) and for which the following design is proposed:

- Population: Micro and small enterprises (MSEs) operating commercial activities in economic sectors II and II of the municipality of Yumbo Valle del Cauca, Colombia, a region with a high rate of business creation in the country (Confecámaras, 2017), a municipality included in the territory with the highest business survival rates and close to 44% (Confecámaras, 2017; 2021).
- Sample size: Non-probabilistic for ease of access, with a minimum acceptance of 18 business units, with a minimum proportion of six observational units for each business activity (services, commerce and manufacturing).

- Sampling frame: active registration of Mypes in the Chamber of Commerce of Cali Yumbo section published by Informa Colombia (2019).
- Sampling unit: The person in charge of the formulation of the company's OGP, who may be the legal representative, the owner or the administrator, or an academic intern who has formulated the OGP during his or her business practice; the foregoing is based on knowledge or access to the information requested.
- Inclusion criteria: Company with an OGP formulated and applied up to 18 months prior to sampling.

An ad hoc instrument designed for the research exercise was used, which underwent a validation process by seven experts in two stages (design and calibration), achieving a CVC of 0.98 with Fleiss Kappa for construct of 0.95 and Fleiss Kappa for objectivity of 0.95, with Pearson's temporal stability coefficient of 0.95 and a final Cronbach's alpha of 0.81.

The instrument is made up of a total of 37 items, where the first 13 are intended for the qualitative identification of the sample subject, the company that is the object of the PGO, the nature and type of theoretical and practical tool used and its results. The following 24 items refer to the variables under investigation; the instrument presents a distribution of nominal qualitative response scales for the characterization questions, an ordinal response scale to inquire about the effect of the PGO on the FDSE (negative impact, no change and positive impact) and a nominal qualitative response scale to identify the theoretical components used in the formulation of the project.

The data treatment is dual, with descriptive statistics procedures for the identification of the predominant type of OGP formulation model and the understanding of the type of sample achieved, and inferential statistics treatment for hypothesis testing.

The research approach is based on the consideration that a project formulation model is a mediating variable in a process of theoretical interpretation of the RDOs of a MSME that are intervened through the execution of the PGO in order to develop its FDSE, given that there is no independence between the variables, giving rise to a relationship (R) of dependence. As illustrated in Figure 1.

Figure 1

Research approach



Figure 1 shows the way in which the dimensions in which the variables are observed can be visualized from the theoretical framework investigated, which allows understanding the systematization developed for them, starting with the mediating variable, as shown in Table 1.

Table 1

Operationalization of the mediating variable OMP Formulation Model

Dimension	Indicators	Interpretation scale	Calculation	
Methodological Model	 a) It was formulated and designed using a theoretical-academic model b) It was formulated and designed by applying an empirical model, not structured, but written. c) It was formulated and designed using the PRADO model d) No model 	Qualitative Nominal	Frequency of use	
Structured technique	 a) Theoretical-academic tools b) Empirical tools and without a written project. c) None of the above b) Structured empirical formulation c) Casual formulation of the project 	Qualitative Nominal	Frequency of use	

Note. The selected indicators are not presented in any pre-established order.

Table 1 illustrates how the mediating variable will be observed in two dimensions, where the first one allows to identify the use of a structured model and the second dimension the

existence of a specific and structured technique for the formulation of the OMPs. The following is the operationalization of the independent variable.

Table 2

Operationalization of the independent variable of Operational Distinctive Traits

Dimensions	Indicators	Interpretation scale	Calculation
Business Model	Level of use of the constituent elements of the Canvas Canvas tool. Osterwalder Business Model (2010).	Discrete quantitative	Level of use = (\sum of elements used in the formulation of the PGO/ Total constituent elements of the tool) x 100%
Operational structure	a. Level of use of the constituent elements of the tool Value chain ^a . Porter (1990)	Discrete quantitative	Level of use = (\sum of elements used in the formulation of the PGO/ Total constituent elements of the tool) x 100%
	b. Level of use of the constituent elements of the Internal Capabilities Profile (ICP) tool. Serna Gómez (2008)		Level of use = (\sum of elements used in the formulation of the PGO/ Total constituent elements of the tool) x 100%
Business strategies	a. Level of use of any of the constituent concepts of the Competitive Focus Strategy (Porter, 1990)	Discrete quantitative	Evidence of use = 100% In the absence of evidence of use = 0%
	b. Level of use of the constituent elements of the Corporate Value Creation Strategy tool. Norton and Kaplan ^b (2004b; 2009)		Level of use = (\sum of elements used in the formulation of the PGO/ Total constituent elements of the tool) x 100%

Note. The selected indicators are not presented in any pre-established order.

^a The value chain proposed by Michael Porter (1990) presents two typologies of elements, supporting activities and primary activities, with at least one element of one typology present, 50% evidence of use of the tool will be considered. One of each will be 100%.

^B The Corporate Value Creation Strategy tool is linked to the authors' Balanced Scorecard proposal, consisting of four elements.

Table 2 shows that the ODR are observed in three dimensions and with a total of five indicators, and finally the FDSE variable is operationalized in Table 3.

Table 3

Dimensions	Indicators	Interpretation scale	Calculation
STRATEGIC	a) Movable guarantees	Ordinal scale.	Interpretation of the type of impact
(Organizational	(assets)		perceived in the company under the
Resources)			scale:
			Positive impact= 1
			Negative impact= -1
			No change=0
	b) Company size (By	Ordinal scale.	Interpretation of the type of impact
	hiring level)		perceived in the company under the
			scale:
			Positive impact= 1
			Negative impact= -1
	a) Tachnalagy	Ordinal cash	No change=0
	c) Technology.	Ordinal scale.	interpretation of the type of impact
			scale:
			Scale. Positive impact= 1
			Negative impact $=$ -1
			No change=0
	d) Innovation	Ordinal scale.	Interpretation of the type of impact
			perceived in the company under the
			scale:
			Positive impact= 1
			Negative impact= -1
			No change=0
TACTICAL-	e) External market	Ordinal scale.	Interpretation of the type of impact
OPERATIVE	orientation		perceived in the company under the
(Operational			scale:
conditions)			Positive impact= 1
			Negative impact= -1
			No change=0
	f) Multi-plant operation	Ordinal scale.	Interpretation of the type of impact
			perceived in the company under the
			scale:
			Nogative impact 1
			Negative impact1
	a) Organizational and	Ordinal scale	Interpretation of the type of impact
	legal structure	Orumai scale.	nerceived in the company under the
	iegui sirueture		scale:
			Positive impact= 1
			Negative impact= -1
			No change=0

Operationalization of the dependent variable (FDSE)

Note. The two FDSE Dimensions adopted for the research cover the factors specific to an organization, according to Confecámaras (2017).

Table 3 shows that the FDSE are observed in two typologies, strategic and operational, under an ordinal scale that allows understanding the type of impact achieved with the implementation of the PGO. Finally, it is necessary to establish some calculated variables that will allow the analysis of the data obtained. Table 4.

Table 4

Calculated variables

Coding	Meaning	Calculation
% of value chain usage	Percentage level of use of the "Value Chain "	(Number of elements used) x
	theory at a rate of 1/11 % per element used	(1/11)% (Number of elements
		used) x $(1/11)$ % (Number of
% DCI usaga	Demonstrate level of the office of the theory of the level	elements used) $x (1/11)\%$
70 FCI usage	internal competency profile matrix PCI at a	(Number of elements used) x
	rate of 1/5 % per element used	used) x $(1/5)\%$ (Number of
	face of 175 76 per crement used	elements used) x $(1/5)\%$
% of Canvas Canvas usage	Percentage level of use of the theoretical tool	(Number of elements used) x
	CANVAS Canvas at a rate of 1/9% per	(1/9)% (Number of elements
	element used	used) x (1/9)% (1/9)%)
% use of competitive	Identifies the use of Michael Porter's (1990)	100% Uses the concept
strategies	concept of competitiveness	0%= Do not use
balanced Scoredcard	Percentage level of use of the Balanced	(Number of elements used) x 25% (Number of elements used)
usage fate	Scorecard (BSC) meoretical tool at a rate of $\frac{1}{9}$ per item used	2.5% (Number of elements
	7470 per tem used	used) x 25% (Number of
		elements used) x 25%
IMPACT	Identifies the type of final impact achieved on	Impact= (total factors impacted
	business survival factors, based on the	positively) - (total factors
	difference in quantity between positive and	impacted negatively)
	negative impacts after project	
S f	implementation.	$\sum d$
sum of use of theoretical concepts	Number of elements and theoretical concepts	s theoretical elements used
FESE	Level of strategic business survival factors	$\sum n4 + n5 + n5 + n8 + n10$
1 LOL	impacted with the implementation of the	Z p 1 · p3 · p3 · p6 · p10
	PGO	
FTSE	Level of tactical-operational factors of	∑ p6 +p7 +p9
	business survival impacted by the	
~	implementation of the PGO	
Strategy_emp	Level of use of business strategy concepts	\sum sumap14 + sumap15
Elements_EO	Level of use of the PCI matrix and the Value	∑sumap11 + sumap12

Note. P 4 to p 15 are the research instrument questions with a value of 1 if the item was used.

Results

A total of 60 valid samples with the following characteristics were obtained:

- Sector II of the economy: Total 15 companies, of which six are microenterprises and nine are small companies.
- Sector III of the economy: A total of 45 companies, nine of which are small companies and 36 are microenterprises.
- 23 samples are from product commercialization establishments, 15 from manufacturing and 22 from services.
- 52 samples were taken from owners and 8 were filled out by persons in the position or functions of managers.

Given that the number of samples in some types of companies is less than 50, the variables are tested for normality using Kolmogorov-Smirnov statistics for samples greater than

50 and Shapiro-Wilk for samples less than 50, obtaining that some variables do not have a normal distribution when a p-value of less than 0.5 is obtained, which allows us to assume the Rho Spearman as a nonparametric test for correlation estimation. See table 5.

Table 5

Normality test

Variable	Type of	Kolmogorov-Smirnov ^a		Shapiro-Wilk			
	company	Statistician	gl	Sig.	Statistician	gl	Sig.
% of value chain	Microenterprise	,222	42	,000,	,885	42	,001
usage	Small business	,160	18	,200*	,889	18	,037
% PCI usage	Microenterprise	,268	42	,000	,725	42	,000,
	Small business	,287	18	,000	,765	18	,001
% of Canvas Canvas	Microenterprise	,395	42	,000	,603	42	,000,
usage	Small business	,247	18	,005	,816	18	,003
% use of competitive	Microenterprise	,514	42	,000	,417	42	,000,
strategies	Small business	,523	18	,000	,373	18	,000,
balanced Scoredcard	Microenterprise	,321	42	,000	,805	42	,000,
usage rate	Small business	,229	18	,014	,836	18	,005
IMPACT	Microenterprise	,163	42	,007	,938	42	,024
	Small business	,144	18	,200*	,966	18	,724
Sum of use of	Microenterprise	,201	42	,000	,912	42	,003
theoretical concepts	Small business	,163	18	,200*	,925	18	,160
FESE	Microenterprise	,206	42	,000	,925	42	,009
	Small business	,221	18	,020	,890	18	,038
FTSE	Microenterprise	,205	42	,000	,932	42	,015
	Small business	,195	18	,067	,934	18	,232

Note. *. This is a lower limit of true significance.

a. Lilliefors significance correction

Hypothesis testing

On the understanding that the variables are observed within several dimensions and the aim is to falsify the independence of the variables, six specific supporting hypotheses (He) are formulated that correlate the variables from their dimensions, as illustrated in Figure 2.

Figure 2

Specific auxiliary hypotheses



Figure 2 provides a comprehensive understanding of the phenomenon by validating the specific hypotheses, therefore, it is generally adopted that:

- Ho: The variables analyzed are independent and their behavior is not correlated
- Hi: The variables analyzed are not independent; therefore, their behavior is correlated
- With P-value = Sig < 0.05, Ho is rejected and Hi is accepted
- With P-value = Sig >0.05, Ho is accepted and Hi is rejected
- Rho Sperman statistical test

The results of the six tests applied reveal the existence of an inter-variable relationship in five of the six cases, as illustrated in the table below

Table 6

Results of the Rho Spearman statistical test between the dimensions of the variables

	FESE	FTSE
Business Model	Rho Spearman: 0.379	Rho Spearman: 0.313
(% use of canvas)	Sig 0.003	Sig 0.015
Elements of the organizational	Rho Spearman: 0.426	Rho Spearman: 0.354
structure	Sig 0.001	Sig 0.006
$(\sum sumap14 + sumap15)$		
Elements of organizational strategy	Rho Spearman: 0.372	Rho Spearman: 0.178
$(\sum sumap11 + sumap12)$	Sig 0.003	Sig 0.172

Note. sumap11, sumap12, sumap13, sumap14 represent the sum of the research instrument questions with a value of 1 if the item was used.

Table 6 shows that there is no evidence of a relationship between the use of organizational strategy elements and the development of tactical business survival factors, since the Rho of 0.172 is interpreted as a very low relationship (Hernández Sampieri et al., 2014;

Ramírez Rios, 2016). The above leads to test the general working hypothesis, based on the calculated variables "IMPACT" and "Sum of use of theoretical concepts", for which the following is assumed:

- Ho: The variables "IMPACT" and "Sum of use of theoretical concepts" are independent
- Hi: The variables "IMPACT" and "Sum of use of theoretical concepts" are not independent, so there is correlation.
- With P-value = Sig < 0.05, Ho is rejected and Hi is accepted
- With P-value = Sig >0.05, Ho is accepted and Hi is rejected.
- Rho Sperman statistical test

The SPSS 25 software shows that Spearman's Rho value is 0.617 with a sig (bilateral) of 0.001, which indicates the existence of a high (strong) correlation between the variables analyzed, in accordance with Hernández Sampieri et al. (2014) and Ramírez Ríos (2016), this result is confirmatory of the specific hypothesis testing process previously carried out.

Descriptive analysis

The results analyzed with descriptive statistics for the categorical questions implemented, allow us to point out that:

- 100% of the micro and small enterprises in the sample do not use structured theoretical models for the formulation of their OMP.
- 11.6% acknowledge using academically unstructured models and 88.4% do not use any type of model.
- The unstructured models make use of the SWOT matrix in a proportion of 6.7%, while the formulation of projects with empirical tools such as basic calculations, quotations and informal budgets reaches 38.3%, closing with the absence of the use of academic theoretical tools with 55% that represents the planning and execution of the PGO in a totally improvised manner.
- Despite the fact that there is no prevalent use of academic models or tools for the project formulation process, it is evident that 65% of the micro and small enterprises perceive that they obtain positive results, 20% consider that there were no changes in their enterprises and 15% feel that the project was adverse to their planned interests and purposes.
- Regarding the formulation of the OGP through the use of theoretical and academic tools, it is observed that 51.5% of those who do not use any tool and project based on the internal knowledge of their company achieve positive results; those who use some empirical tools but do not make a formal written project obtain positive results in 78.3% of the cases; and those who use at least one empirical tool and showed evidence of having carried out a written exercise, in 100% of the cases their results were positive.
- Simultaneously, by means of the cross-table analysis, it was identified that 69% of the positive results occurred in microenterprises and the highest rate of negative results was found in small enterprises, reaching 55.6%.
- Likewise, 85.7% of those who used an unstructured model obtained positive results, approximately 23% higher than the 62.3% rate for those who achieved success in their projects by totally improvising their planning and execution.

Discussion and conclusions

Despite the fact that for the initial dates when the sample was scheduled to be taken, it could not be taken due to the effects of confinement as a result of the Covid-19 pandemic, finally with the progressive return to mobility and opening of commerce, it was observed that

many micro and small businesses had ceased operations and others had implemented PGO as a contingency measure in the search for business survival, in this way the social situation that initially was a limitation for the development of the research, finally contributed with a greater number of accessible sample subjects.

From the above situation, it is impossible for the researcher to determine whether the results obtained are due to the administrative situation in times of pandemic that prevented entrepreneurs from seeking advice for their projects or are the reflection of a constant administrative behavior, even so, the results allow inferring that at least from the autonomous project management exercised by entrepreneurs and owners of MSEs, this coincides with Elizundia Cisneros (2012), Liao and Gartner (2008), Dyer and Ross (2008) and Hamilton (2003) in that in the MSME sector there is a high tendency not to plan under defined medium or long term strategies, although they do make a mental planning for their decision making (Elizundia Cisneros, 2015).

Now, in the understanding that the RDOs are approached from academically accepted theoretical concepts, such as the value chain of (Porter, 2009), the Canvas canvas as a tool for approaching and understanding the business model (Osterwalder & Pigneur, 2009; Osterwalder, 2016), the understanding of the internal capabilities profile (ICP) (Serna Gómez, 2008) and management through the creation of strategies with control indicators (Kaplan & Norton, 2004), it should be noted that the evidence of the correlation between the use of the concepts or principles that integrate them and the development of the FDSE in MSMEs coincides with the findings of Pantoja Burbano, Arciniegas, Álvarez Hernández and Enríquez Chuga (2019) that indicate how the success of micro and small entrepreneurs is related to the management of internal factors of their business model and external factors, among which are competition, technological regulation and the political-social situation.

In the same sense, the results of the evidence of correlation found between the variable *elements of the organizational structure* and the FESE variable coincide with what was pointed out by Londoño Patiño (2020) in terms of the fact that decisions in SMEs are related not only to the business environment, but also to the knowledge of their labor productivity variables to guide decision-making in the search for comprehensive productivity, a matter already identified as a need for knowledge management orientation in the sector of small and medium-sized enterprises that contributes to significantly increase their business performance (Pinzón Castro et al., 2019).

Regarding the FTSE, among which is the multi-establishment and multi-market operation, and its correlation with the use of theoretical elements shows a Spearman's Rho of 0.172 in a positive sense, which when interpreted from a post-positivist posture reveals that there is no absolute independence between the variables, however, with a p-value greater than 0.05 there is no certainty that the evidence represents a causal tendency, since on the interpretation scale it is identified as a very low relationship. However, taking into account the historical moment when the sample was taken, where companies (including SMEs) adopted remote or home-based work as a contingent measure (Bargados, 2021), and many others in the commerce and services sector were forced to close physical spaces and implement home-based operations and home service (Acosta Fonseca, 2020), it is not possible to determine whether the weakness of the relational evidence is related to the model of formulation of the OGP or to the moment of operational contingency in which it is generated.

The 87.5% of positive results in projects formulated without a structured model are a result that confirms the importance of strengthening the management capacity of the microentrepreneur (Rey Campero, 2016) to improve business survival rates in the sector as part of an entrepreneurial ecosystem (Arboleda Vélez, 2013). In conclusion, having falsified the hypothesis of independence between the variables, it has been possible to prove that in this case, the more theoretical and conceptual tools an entrepreneur applies in his PGO, the greater the development of his FDSE for the first years of the company's life, which provides a starting point to advance in the development of a proposed model for the formulation of organizational management projects for small and medium-sized enterprises, by identifying that the RDOs articulated so far are relevant to the thinking and strategic planning processes of MSE entrepreneurs, which constitutes a contribution of this research exercise to the development of management theories adapted to the operational realities of micro and small enterprises in a country.

References

- Acosta Fonseca, Va. (2020). En medio de la pandemia por covid-19, cerraron 509.370 micronegocios en Colombia. *La República*. https://www.larepublica.co/economia/en-medio-de-la-pandemia-por-covid-19-cerraron-509370-micronegocios-en-colombia-3130382
- Angelelli, P., & Prats, J. (2005). Fomento de la actividad emprendedora en América Latina y el Caribe: Sugerencias para la formulación de proyectos [Technical Notes]. Inter-American Development Bank. http://publications.iadb.org/handle/11319/6178
- Arboleda Vélez, G. (2001). Proyectos, Formulación, evaluación y control (Cuarta Ed.). AC Editores.
- Arboleda Vélez, G. (2013). *PROYECTOS, Identificación, Formulación, evaluación y gerencia* (2ª Ed.). Alfaomega.
- Asociación Colombiana de pequeños industriales [ACOPI]. (2018). Encuesta de desempeño empresarial. Acopi. https://acopi.org.co/encuesta-de-desempe%C3%B1o-empresarialacopi-2do-trimestre-de-2018.pdf
- Asociación Colombiana de pequeños y medianos industriales. (2018). *Encuesta de desempeño empresarial acopi 2do trimestre de 2018*. https://acopi.org.co/encuesta-dedesempe%C3%B1o-empresarial-acopi-2do-trimestre-de-2018.pdf
- Bargados, A. (2021). Impacto del Covid-19 en las Pymes argentinas: Actividad, empleo y condiciones de trabajo. *Trabajo y Sociedad*, *21*(36), 123-145.
- Cajigas Romero, M., Haro, M. D. C., & Ramírez, E. (2017). El Estado Colombiano y El Emprendimiento Empresarial: Éxito o fracaso de su programa clave, *Criterio Libre*. *15*(26), 106-130.
- Campos, L. J. Q. (2013). Características de la innovación en pymes de Colombia que han utilizado recursos públicos. *Revista Mutis*, *3*(1).
- Comfecámaras Red de Cámaras de Comercio. (2021). Resultados Encuesta de las Cámaras de Comercio de Seguimiento y Monitoreo del Impacto de la COVID-19 en el Sector Empresarial.

https://www.confecamaras.org.co/phocadownload/2020/VF_Encuesta_Empresarios_C ovid-19_Febrero_2021.pdf

Confecámaras - Red de Cámaras de Comercio. (2017). Determinantes de supervivencia empresarial en Colombia (N.º 14; Cuaderno Económico, p. 24). http://www.confecamaras.org.co/phocadownload/Cuadernos_de_analisis_economico/ Cuaderno_de_An%D0%B0lisis_Economico_N_14.pdf

- Confecámaras Red de cámaras de comercio de Colombia. (2017). *Cuaderno de Análisis Económico* N°14 (N.º 14; Cuaderno de análisis económico, p. 28). http://www.confecamaras.org.co/phocadownload/Cuadernos_de_analisis_economico/ Cuaderno_de_An%D0%B0lisis_Economico_N_14.pdf
- Confecámaras Red de cámaras de comercio de Colombia. (2018). *Nuevos hallazgos de la supervivencia y crecimiento de las empresas en Colombia*. http://www.confecamaras.org.co/phocadownload/2018/Cuadernos_An%C3%A1lisis_Econ%C3%B3mico/Cuaderno_demografia_empresarial/Cartilla17.pdf
- Cruz, L. E., Álvarez Velázquez, E., Flores Barrios, L., & Hidalgo Barrios, B. V. (2017). Beneficios de las prácticas de sustentabilidad aplicadas en las Pymes De Tuxpan, Ver. *Revista de la Alta Tecnología y Sociedad*, 9(2), 23-30.
- Elizundia Cisneros, M. E. (2015). Factores de emprendimiento que influyen en el desempeño de la micro y pequeña empresa. *Universidad Anahuac del Sur*, 53-75.
- Fracica Naranjo, G., Matíz B., F. J., Hernández, G., & Mogollón, C. Y. (2011). Capital semilla para la financiación de Start Ups con alto potencial de crecimiento en Colombia. *Revista EAN*, 71, 126-146. aph.
- Gallego, M. G., & Cáceres, J. H. (2015). Identificación de factores que permitan potencializar el éxito de proyectos de desarrollo de software. *Scientia et Technica*, *20*(1), 70-81.
- Hernández Sampieri, R., Fernandez Collado, C., & Baptista Lucio, M. del P. (2014). *Metodología de la investigación* (Sexta Ed.). MCGRAW-HILL.
- Informa Colombia. (2019). *Listado de empresas en YUMBO*. Directorio de Empresas -Directorio de empresas en Colombia. https://www.informacolombia.com/directorioempresas/localidad_yumbo
- Instituto de dirección de proyectos. (2013). *Guía de los Fundamentos para la dirección de proyectos (Guía del PMBOK)* (Quinta ed.). https://www.gob.mx/cms/uploads/attachment/file/79535/PMBOK_5ta_Edicion_Espan ol__1.pdf
- Instituto Vasco de cualificaciones y formación profesional (2010). *Guía de elaboración de proyectos*. Koalifikazioen Eta Lanbide Heziketaren Euskal Institutoa. https://www.pluralismoyconvivencia.es/upload/19/71/guia_elaboracion_proyectos_c.p df
- Jiménez Sánchez, J. I. (2014). Nuevas modalidades de financiación para microempresas. *Puente: Revista Científica*, *8*. http://unicatolica.basesdedatosezproxy.com:2070/ehost/detail/detail?vid=0&sid=60ff0 bf0-86ab-464f-b7dac2b88689ecee%40sessionmgr104&bdata=Jmxhbmc9ZXMmc2l0ZT1laG9zdC1saXZ1 #db=aph&AN=102022339
- Kaplan, R. S., & Norton, D. P. (2004). *Mapas Estratégicos, Convirtiendo los activos intangibles en resultados tangibles* (Primera). Gestión 2000.
- Londoño-Patiño, J. A. (2020). Toma de decisiones basada en la productividad en Pymes manufactureras: Aproximación desde la Lógica Difusa. *Revista CEA*, 6(12), 181-207.
- Mas Verdú, F., Ribeiro Soriano, D., & Roig Tierno, N. (2015). Firm survival: The role of incubators and business characteristics. *Journal of Business Research*, 68(4), 793-796. https://doi.org/10.1016/j.jbusres.2014.11.030

- Meixuerio Garmendia, J., & Peréz Cruz, M. A. (2008). *Metodología general para la evaluación de* http://www.cepep.gob.mx/work/models/CEPEP/metodologias/documentos/metodolog ia general.pdf
- Méndez Lozano, R. (2012). Formulación y Evaluación de Proyectos. Enfoque para emprendedores (Séptima). Rafael Méndez Lozano.
- Ortega Zarza, M. (2015). Sistema basado en PMBOK para la Auditoría en la Gestión de Proyectos, en Pymes: Caso de una empresa comercializadora de diversos servicios; http://ri.uaemex.mx/handle/20.500.11799/66439
- Ortegón, E., Pacheco, J. F., Prieto, A., & Latin American and Caribbean Institute for Economic and Social Planning. Projects and Investment Programming Division. (2005). *Metodología del marco lógico para la planificación, el seguimiento y la evaluación de proyectos y programas*. Naciones Unidas, CEPAL, ILPES, Área de proyectos y programación de inversiones.
- Osterwalder, A. (2016). Generación de modelos de negocio: Un manual para visionarios, revolucionarios y retadores Título original. Bussines model generation. Deusto, Grupo Planeta.
- Osterwalder, A., & Pigneur, Y. (2009). Business model generation. (Primere Ed.). Wiley.
- Padilla, M. C. (2016). Formulación y evaluación de proyectos. Ecoe Ediciones.
- Pantoja Burbano, M. J., Arciniegas, G., Rocío Álvarez Hernández, S. del, & Enríquez Chuga, J. F. (2019). Factores que influyen en los emprendimientos de los artesanos de San Antonio de Ibarra. *Investigación Operacional*, 40(2), 242-248.
- Parra Alviz, M., Rubio Guerrero, G., & López Posada, L. M. (2017). Factores distintivos de emprendimiento que propiciaron el éxito: Casos de estudio en empresarios de Ibagué, Tolima. Distinctive factors of entrepreneurship that led to success: case studies in entrepreneurs from Ibagué, Tolima., 43, 89-127. https://doi.org/10.14482/pege.43.10583
- Pinzón Castro, S. Y., Maldonado Guzmán, G., & Marín Aguilar, J. T. (2019). Orientación de la gestión del conocimiento y rendimiento en las pequeñas y medianas empresas mexicanas. *Revista de Ciencias Sociales*, 25(1), 21-34. https://doi.org/10.31876/rcs.v25i1.27284
- Porter, M. E. (1990). La ventaja competitiva de las naciones. Vergara.
- Porter, M. E. (2009). *Estrategia Competitiva: Técnicas para analizar Industrias y Competidores* (Tercera). Piramide.
- Project Management Institute. (2017). Guía de los Fundamentos Para la Dirección de Proyectos (Guía del Pmbok) (6 Ed.). Project Management Institute.
- Ramírez Rios, A. (2016, junio 29). Prueba de hipotesis con RHO de Spearman para variable cualitativa y variable cuantitativa. https://www.youtube.com/watch?v=LEBIOkhaoIg
- Rey Campero, C. R. (2016). La formulación y evaluación de proyectos de inversión: Una nueva visión para las PYMES de servicio. Sotavento M.B.A., 5(27), 22-48. https://doi.org/10.18601/01233734.n27.03
- Saavedra Mayorga, J. J. (2007). Una aproximación a las demandas sociales de las escuelas de administracion en Colombia. *Revista Universidad y Empresa Universidad Del Rosario*, 16, 74.

- Serna Gómez, H. (2008). Gerencia estrategica. Teoría-Metodología- Alineamiento, Implementación y Mapas Estratégicos. Indices de gestión. (10ª Ed.). 3R.
- Serrano Montiel, M. I., Borgucci García, E. V., & Vera Colina, M. A. (2013). Estrategias de microfinanciamiento por la banca privada en Venezuela y Colombia. *Microfinance strategies developed by prívate banks in Venezuela and Colombia.*, 34(2), 115-129.
- Talebi, K., Rezazadeh, A., & Nobari, N. (2015). Business model innovation: A remedy for SMEs' survival and growth.
- Universidad de las Américas, & Ramos, C. A. (2015). Los paradigmas de la investigación científica. *Avances en Psicología*, 23(1), 9-17. https://doi.org/10.33539/avpsicol.2015.v23n1.167
- Velásquez Restrepo, S. M., Londoño Gallego, J. A., López Romero, C., & Vahos, J. D. (2017).
 Desarrollo de una plataforma web multimedial para la elaboración de proyect.os bajo la metodología del marco lógico. Lámpsakos, 18, 12-20. http://dx.doi.org/10.21501/21454086.2601
- Vera Muñoz, G., Vera Muñoz, M., & Martí-nez Méndez, R. (2020). PYMES y Desarrollo Sustentable. *Management Review*, 3(1). https://doi.org/10.18583/umr.v3i1.108

Date received: 09/03/2023 **Revision date:** 10/05/2023 **Date of acceptance:** 29/06/2023