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Journal-Microeconomics

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Support the international scientific community in its written production Science, Technology and Innovation in the Field of Social Sciences, in Subdisciplines of Household behavior: Consumer economics, Consumer economics, Household production and intrahouse allocation, Personal finance, Consumer protection; Production and organizations: Firm behavior, Organizational behavior, Transaction costs, Property rights, Production, Capital and total factor productivity, Capacity; Distribution: General, Personal income and wealth distribution, Factor income distribution; Market structure and pricing, Perfect competition, Monopoly, Oligopoly and other forms of market imperfection, Auctions, Rationing; Licensing, Value theory; General equilibrium and disequilibrium: Exchange and production economies, Incomplete markets, Input-Output analysis, Computable and other applied general equilibrium models; Welfare economics: Allocative efficiency, Cost-Benefit analysis, Externalities, Equity, Justice, Inequality, and other normative criteria and measurement, Altruism; Analysis of collective Decision-Making: Social choice, Clubs, Committees, Economic models of political processes, Bureaucracy, Administrative processes in public organizations, Conflict, Conflict resolution, Alliances, Positive analysis of Policy-Making and implementation; Information and uncertainty, Criteria for Decision-Making under risk and uncertainty, Asymmetric and private information, Search, Learning, and Information, Expectations, Speculations; Intertemporal choice and growth: Intertemporal consumer choice, Life cycle models and saving, Intertemporal firm choice and growth, Investment, or Financing.

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Presentation of Content

In the first article we present, *Application of the prospective Tool Smic-Prob Expert in decision making in a bicycle trading company*, by Méndez-Pérez, Irving, López-Valvidieso, Leticia, Eliseo Dantes, Hortensia and Notario-Priego, Ezequiel, with adscription in the TecNM-Instituto Tecnológico de Villahermosa, as the next article we present, *Factors that influence business management in micro and small businesses*, by Aguilera-Bautista, Crystal, Antonio-Vidaña, Paula Rosalinda, Muñoz-Palacios, Luz del Carmen and Crudet-Balderas, Juan Carlos, with adscription in the Universidad Tecnológica del Centro de Veracruz, as the next article we present, *Links between intellectual capital and mexican SMEs performance from a systemic perspective*, by Cala-Hernández, Josué & Ramírez Herrera, Dania, with adscription in the Instituto politécnico Nacional - Unidad Profesional Interdisciplinaria de Ingeniería y Ciencias Sociales y Administrativas, as last article we present, *Marketing as a strategic tool for micro and small businesses for business success*, by Alcocer-Martínez, Fidel Ramón, Tejero-Canché, Jessica del Carmen and Ramírez-Alcocer, David Enrique, with adscription in the Universidad Autónoma de Campeche and Universidad Internacional Iberoamericana.

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Application of the prospective Tool Smic-Prob Expert in decision making in a bicycle trading company

Aplicación de herramienta prospectiva Smic-Prob Expert en toma de decisiones en empresa comercializadora de bicicletas

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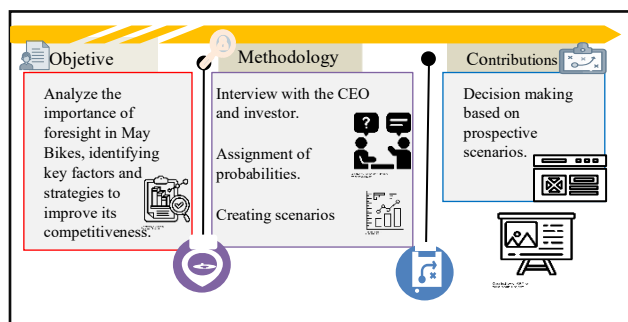
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Abstract

This study applies the prospective methodology to the company May Bikes, identifying the main driving forces of change in the bicycle market using the SMIC-PROB EXPERT tool. The study focuses on evaluating the impact of two key strategies: a loyalty system based on points and discounts, and an increase in visual marketing through infographics within the establishment. Through semi-structured interviews and exploratory analysis, future scenarios are built



Prospective Analysis, Strategic Decision Marking, SMIC-PROB EXPERT

Resumen

En este estudio, se aplica la metodología prospectiva a la empresa May Bikes, identificando las principales fuerzas impulsoras del cambio en el mercado de bicicletas mediante la herramienta SMIC-PROB EXPERT. El estudio se centra en evaluar el impacto de dos estrategias clave: un sistema de fidelización basado en puntos y descuentos, y el aumento del marketing visual a través de infografías dentro del establecimiento. A través de entrevistas semiestructuradas y un análisis exploratorio, se construyen escenarios futuros considerando variables clave, sin incluir factores externos como regulaciones gubernamentales



Análisis Prospectivo, Toma de decisiones estratégicas, SMIC-PROB EXPET

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Introduction

Foresight, far from predicting the future, facilitates the construction of possible scenarios Godet [2007]. By visualising different futures, the company can make strategic decisions that are more informed and aligned with its objectives.

This study presents a practical application of this methodology to the case of May Bikes. Through SMIC-PROB EXPERT, the main driving forces of change in the bicycle market have been identified and different future scenarios have been designed. The results obtained offer a strategic vision on the implementation of a loyalty system [points and discounts] and more visual marketing [infographics] within the shop.

Prospective, according to Jouvenel [1993], conceives the future as a reality yet to be built. This vision, shared by Godet [2007], who states that the future ‘depends solely on human action’, places human beings as the main architects of their own destiny. In line with this perspective, Medina [2006] defines foresight as a discipline that makes it possible not only to analyse the present and future trends, but also to influence the course of events. By identifying the present and future needs of society, foresight facilitates the alignment between scientific and technological supply and social demands.

Godet [2007] conceives of exploratory foresight as a tool that allows us to visualise a range of possible futures, or ‘futuribles’, considering both the influences of the past and the aspirations of different social actors. In line with this perspective, Arapé [2000] defines foresight as a discipline that studies the root causes of social and economic change, with the aim of anticipating future situations.

This article seeks to answer the following question: What would be the most probable scenarios for the year 2025 for the company May bike if the marketing strategies are implemented? For this purpose, the internal and external socio-economic context of the company was taken into account in the determination of variables within the prospective study at an exploratory level by means of semi-structured interviews.

In order not to affect its reproducibility and applicability, this study was carried out on the basis of future variables and hypotheses without taking into account other factors such as actors outside the company, policies, governmental regulations, tax reforms, etc. The research is composed of the following parts: the background, where the trajectory of the bicycle sector in the city of Villahermosa and the particular case of the Mayito Bike company are described; the theoretical framework in which the concept of foresight, scenarios and the SMIC-PROB EXPERT tool are reviewed; the methodology, where the hypotheses, simple probabilities, probabilities of occurrence and probabilities of non-occurrence per scenario are described in detail; the analysis of the results provided by the programme, where the research question is answered; and the conclusions of the analysis.

In the city of Villahermosa, in recent years the use of bicycles has increased due to the urban mobility they offer, since the use of this means of transport is more efficient financially speaking, the maintenance costs of this vehicle are low and few, it has very few components. When it comes to transport efficiency, the bicycle is a good transport alternative for short and medium distances. According to the magazine Bizkaia [2020], bicycles can efficiently cover distances of up to 7 km, or even up to 15 km. This means that a cyclist can cover an area of 150 km² around his or her residence. Overall, half of all urban trips by car or public transport cover less than 5 km. About 45% of urban trips cover distances of less than 3 kilometres, a distance that can be covered by bicycle in 10 minutes on flat terrain.

The cycling sector is emerging in Villahermosa, but has great potential for growth, which may be due to several factors, from the price of fuel, to the rising prices of motorised vehicles and the growing incentive to do sport for better health. The Organisation for Economic Co-operation and Development [OECD] [2023] mentions the disadvantages that an organisation has when it is not aware of its competitive advantages, ranging from losses of market share, reduced economic returns, difficulty in attracting and retaining customers, increases in fixed costs and a decrease in prestige/reputation.

Many of the retail bicycle shops in the city of Villahermosa are not aware of the competitive advantages they have and therefore it is not possible to exploit them, but more critical are the opportunities for improvement that they miss because they do not have a competitive analysis.

In this paper we will specifically analyse the company May Bike, which is located in the city of Villahermosa, Tabasco. It is a company dedicated to the marketing of Trek brand bicycles, operating under the franchise scheme, the company was founded on May 4, 2024, so the current year is being used to gather information and refining its sales strategy.

Currently the company is facing several challenges, the main and most critical one is the low number of sales and the adherence of customers, both in the sales service of Trek branded bicycles, as well as its maintenance service [corrective and preventive]. Marketing strategies are proposed that can favour the competitiveness of the May Bike company. This strategy is based on 2 strategic pillars.

1] A loyalty system [purchase points and discounts on consecutive maintenance].

2] Increased infographics indicating the competitive advantages offered by its maintenance service.

The first strategy addresses a loyalty system where the customer benefits from points for every purchase made, these points are redeemable for shop merchandise or services, as well as a discount after 30% after their fourth service.

The second strategy is the implementation of infographics that attract the attention of customers. This will indicate the competitive aspects of your maintenance service, as it uses high quality inputs and has specialised tools for the proper maintenance of bicycles, these infographics will inform the customer of the competitive qualities offered by this service and generates added value as the service is supported by the quality of the inputs used [oils, greases, degreasers, brushes, torque meters, among other specialised tools for bicycle maintenance.

The main tool to be used for the creation of the scenarios is the SMIC-Prob-Expert method, which allows the construction of future scenarios based on the most influential variables. These variables, through various hypotheses, made it possible to visualise different possible futures.

Methodology

The SMIC-PROB-EXPERT software, according to Prospective [2018], is a valuable tool to assess the probability of occurrence of different future scenarios. By analysing the interrelationships between multiple scenarios, this method allows identifying the most likely changes in a given system. To apply this method, Godet & Durance [2009] recommend using semi-structured questions to obtain the information so as not to overwhelm the experts with a large number of questions.

2.1 Using SMIC-Prob for decision making

SMIC-Prob [Systems and Probabilistic Cross Impact Matrices] is a powerful strategic foresight tool that allows companies to analyse multiple future scenarios and make more informed decisions in an uncertain environment.

This tool is particularly useful for engaging senior management in a process of joint reflection on the future of the organisation.

1.1.1 Identification of key assumptions

A set of hypotheses are defined, in this case they are hypotheses previously made by analysing the situation of the company, this is a process of dialogue and collective reflection, the team is guided towards the construction of scenarios, maintaining the same factors that conditioned the evolution of the key variable used including the time horizon.

- If a change is expected, specify its magnitude.
- Determining the best way to represent the future evolution of the variable. Promoting both the diversity of ideas and the search for agreements, the following hypotheses were developed

Box 1**Table 1**

Hypothesis

#	Broad Title	Open.	Description
1	Feasibility of implementing a loyalty programme in the first quarter of 15%.	Prog.Fid15	15% of existing customers will sign up for the loyalty programme in Q1 2025
2	Feasibility of loyalty programme implementation in the first quarter of 20%.	Prog.Fid20	20% of existing customers will sign up for the loyalty programme in the first quarter of 2025
3	Feasibility of loyalty programme implementation in the first quarter of 30%.	Prog.Fid30	30% of existing customers will sign up for the loyalty programme in the first quarter of 2025
4	Feasibility of loyalty programme implementation in the first quarter of 40%.	Prog.Fid40	40% of current customers will sign up to the loyalty programme in the first quarter of 2025
5	Increased consumption due to perceived benefits	Aum.Tiket	New customers recruited through the loyalty programme will have an average ticket size 15% higher than customers who do not participate in the programme.
6	Feasibility of implementing infographics detailing the benefits of maintenance	Imp.Infogr	A 20% increase in the number of customers requesting maintenance services after implementing infographics is expected by 2025.

Source: Own elaboration

2.1.2 Construction of the impact matrix.

A matrix is created where the influence that each hypothesis has on the others is assessed. This makes it possible to identify the cause-effect relationships between the different hypotheses. Experts are brought together to evaluate these hypotheses, this is done taking into account the decision makers in the company, in this case the CEO of the business and 5 investors.

Definition of the experts

Box 2**Table 2**

Experts.

#	Number	Group	Peso
1	Inversionist 1	Inversionist	5
2	Inversionist 2	Inversionist	5
3	Inversionist 3	Inversionist	6
4	Inversionist 4	Inversionist	4
5	Inversionist 5	Inversionist	6
6	CEO of the negocio	CEO	9

Source: Own elaboration

2.1.3 Asignacion Probability analysis

Each hypothesis is assigned a probability of occurrence. Mederos P [2013] indicates that this allows the uncertainty associated with each scenario to be quantified. For this, a meeting is organised where all the experts are present and the simple probabilities are asked, if realization.

Results

Simple probability data

Each scenario is analysed for each expert or for the set of experts, or each scenario is evaluated for a particular group of experts.

Box 3

	Probabilities
1 : Prog.Fid15	0.32
2 : Prog.Fid20	0.78
3 : Prog.Fid30	0.15
4 : Prog.Fid40	0.91
5 : Aum.Tiket	0.56
6 : Imp.Infogr	0.45

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Figure 1

Simple probability data table Investor 1

Source: Own elaboration obtained from Smic-Pro Expert

Box 4

	Probabilidades	
1 : Prog.Fid1 5	0.89	© LPSOR-EPITA-PROB-EXPERT
2 : Prog.Fid20	0.42	
3 : Prog.Fid30	0.65	
4 : Prog.Fid40	0.21	
5 : Aum.Tiket	0.98	
6 : Imp.Infogr	0.32	

Figure 2

Simple probability data table investor 2

Source: Own elaboration obtained from Smic-Pro Expert

Box 7

	Probabilidades	
1 : Prog.Fid1 5	0.51	© LPSOR-EPITA-PROB-EXPERT
2 : Prog.Fid20	0.83	
3 : Prog.Fid30	0.48	
4 : Prog.Fid40	0.11	
5 : Aum.Tiket	0.62	
6 : Imp.Infogr	0.79	

Figure 5

Simple probability data table investor 5

Source: Own elaboration obtained from Smic-Pro Expert

Box 5

	Probabilidades	
1 : Prog.Fid1 5	0.12	© LPSOR-EPITA-PROB-EXPERT
2 : Prog.Fid20	0.75	
3 : Prog.Fid30	0.39	
4 : Prog.Fid40	0.87	
5 : Aum.Tiket	0.54	
6 : Imp.Infogr	0.65	

Figure 3

Simple probability data table investor 3

Source: Own elaboration obtained from Smic-Pro Expert

Box 8

	Probabilidades	
1 : Prog.Fid1 5	0.95	© LPSOR-EPITA-PROB-EXPERT
2 : Prog.Fid20	0.48	
3 : Prog.Fid30	0.11	
4 : Prog.Fid40	0.66	
5 : Aum.Tiket	0.79	
6 : Imp.Infogr	0.2	

Figure 6

Simple probability data table CEO of the business

Source: Own elaboration obtained from Smic-Pro Expert

Box 6

	Probabilidades	
1 : Prog.Fid15	0.67	© LPSOR-EPITA-PROB-EXPERT
2 : Prog.Fid20	0.94	
3 : Prog.Fid30	0.45	
4 : Prog.Fid40	0.18	
5 : Aum.Tiket	0.75	
6 : Imp.Infogr	0.21	

Figure 4

Simple probability data table investor 4

Source: Own elaboration obtained from Smic-Pro Expert

Probability data Conditional yes.

A hypothesis is analysed for each expert or for the set of experts, or a hypothesis is evaluated for a particular group of experts. A hypothesis to be evaluated and a baseline hypothesis are selected.

Box 9

	Prog.Fid1 5	Prog.Fid20	Prog.Fid30	Prog.Fid40	Aum.Tiket	Imp.Infogr	
1 : Prog.Fid1 5	0.32	0.45	0.52	0.7	0.5	0.3	© LPSOR-EPITA-PROB-EXPERT
2 : Prog.Fid20	0.4	0.78	0.45	0.6	0.4	0.35	
3 : Prog.Fid30	0.48	0.5	0.15	0.6	0.7	0.3	
4 : Prog.Fid40	0.65	0.65	0.7	0.91	0.45	0.5	
5 : Aum.Tiket	0.44	0.5	0.65	0.35	0.56	0.45	
6 : Imp.Infogr	0.65	0.67	0.68	0.7	0.45	0.45	

Figure 7

Probability data table If conditional Investor 1

Source: Own elaboration obtained from Smic-Pro Expert

Box 10

	Prog.Fid15	Prog.Fid20	Prog.Fid30	Prog.Fid40	Aum.Tiket	Imp.Infogr
1 : Prog.Fid15	0.67	0.7	0.72	0.84	0.22	0.17
2 : Prog.Fid20	0.66	0.94	0.95	0.95	0.25	0.22
3 : Prog.Fid30	0.44	0.45	0.45	0.5	0.29	0.27
4 : Prog.Fid40	0.5	0.54	0.56	0.18	0.3	0.3
5 : Aum.Tiket	0.36	0.39	0.4	0.47	0.75	0.31
6 : Imp.Infogr	0.22	0.22	0.24	0.3	0.35	0.21

Figure 8

Probability data table Conditional yes Investor 2
 Source: Own elaboration obtained from Smic-Pro Expert

Box 11

	Prog.Fid15	Prog.Fid20	Prog.Fid30	Prog.Fid40	Aum.Tiket	Imp.Infogr
1 : Prog.Fid15	0.12	0.22	0.25	0.3	0.35	0.45
2 : Prog.Fid20	0.33	0.75	0.78	0.82	0.36	0.49
3 : Prog.Fid30	0.35	0.38	0.39	0.47	0.39	0.44
4 : Prog.Fid40	0.45	0.48	0.57	0.87	0.44	0.47
5 : Aum.Tiket	0.55	0.57	0.58	0.62	0.54	0.5
6 : Imp.Infogr	0.33	0.35	0.39	0.41	0.42	0.65

Figure 9

Probability data table Conditional yes Investor 3
 Source: Own elaboration obtained from Smic-Pro Expert

Box 12

	Prog.Fid15	Prog.Fid20	Prog.Fid30	Prog.Fid40	Aum.Tiket	Imp.Infogr
1 : Prog.Fid15	0.89	0.95	0.96	0.96	0.45	0.25
2 : Prog.Fid20	0.33	0.42	0.44	0.5	0.46	0.28
3 : Prog.Fid30	0.45	0.5	0.65	0.66	0.5	0.3
4 : Prog.Fid40	0.44	0.48	0.49	0.21	0.65	0.31
5 : Aum.Tiket	0.28	0.33	0.35	0.39	0.98	0.32
6 : Imp.Infogr	0.32	0.42	0.45	0.45	0.95	0.32

Figure 10

Probability data table Conditional yes Investor 4
 Source: Own elaboration obtained from Smic-Pro Expert

Box 13

	Prog.Fid15	Prog.Fid20	Prog.Fid30	Prog.Fid40	Aum.Tiket	Imp.Infogr
1 : Prog.Fid15	0.51	0.55	0.6	0.66	0.21	0.23
2 : Prog.Fid20	0.41	0.83	0.85	0.87	0.25	0.24
3 : Prog.Fid30	0.44	0.45	0.48	0.52	0.28	0.28
4 : Prog.Fid40	0.47	0.59	0.6	0.11	0.3	0.29
5 : Aum.Tiket	0.23	0.25	0.3	0.35	0.62	0.16
6 : Imp.Infogr	0.25	0.27	0.3	0.38	0.45	0.79

Figure 11

Probability data table Conditional yes Investor 5
 Source: Own elaboration obtained from Smic-Pro Expert

Box 14

	Prog.Fid15	Prog.Fid20	Prog.Fid30	Prog.Fid40	Aum.Tiket	Imp.Infogr
1 : Prog.Fid15	0	0.34	0.4	0.45	0.32	0.24
2 : Prog.Fid20	0.61	0	0.67	0.7	0.33	0.29
3 : Prog.Fid30	0.65	0.7	0	0.7	0.35	0.35
4 : Prog.Fid40	0.69	0.72	0.76	0	0.42	0.35
5 : Aum.Tiket	0.22	0.25	0.3	0.32	0	0.36
6 : Imp.Infogr	0.15	0.19	0.24	0.26	0.42	0

Figure 12

Probability data table If conditional CEO of the business
 Source: Own elaboration obtained from Smic-Pro Expert

3.3 Data probability Unconditional.

One hypothesis is analysed for each expert or for all experts. A hypothesis to be evaluated and a reference hypothesis are selected.

a) Inversionists

Box 15

	Prog.Fid15	Prog.Fid20	Prog.Fid30	Prog.Fid40	Aum.Tiket	Imp.Infogr
1 : Prog.Fid15	0	0.65	0.67	0.7	0.22	0.18
2 : Prog.Fid20	0.45	0	0.66	0.7	0.27	0.24
3 : Prog.Fid30	0.5	0.65	0	0.71	0.3	0.26
4 : Prog.Fid40	0.54	0.6	0.7	0	0.32	0.25
5 : Aum.Tiket	0.25	0.26	0.3	0.36	0	0.14
6 : Imp.Infogr	0.14	0.18	0.18	0.19	0.32	0

Figure 13

Probability data table Non-conditional Investor 1
 Source: Own elaboration obtained from Smic-Pro Expert

Box 16

	Prog.Fidl 5	Prog.Fid20	Prog.Fid30	Prog.Fid40	Aum.Tiket	Imp.Infogr
1 : Prog.Fidl 5	0.95	0.95	0.97	0.97	0.45	0.32
2 : Prog.Fid20	0.47	0.48	0.55	0.66	0.32	0.45
3 : Prog.Fid30	0.52	0.57	0.11	0.6	0.25	0.45
4 : Prog.Fid40	0.55	0.56	0.6	0.66	0.44	0.47
5 : Aum.Tiket	0.22	0.28	0.36	0.36	0.79	0.47
6 : Imp.Infogr	0.3	0.34	0.35	0.35	0.45	0.65

Figure 14

Probability data table Unconditional Unconditional Investor 2.
Source: Own elaboration obtained from Smic-Pro Expert

Box 17

	Prog.Fidl 5	Prog.Fid20	Prog.Fid30	Prog.Fid40	Aum.Tiket	Imp.Infogr
1 : Prog.Fidl 5	0	0.44	0.47	0.52	0.25	0.21
2 : Prog.Fid20	0.65	0	0.71	0.71	0.26	0.22
3 : Prog.Fid30	0.69	0.72	0	0.75	0.3	0.22
4 : Prog.Fid40	0.72	0.75	0.79	0	0.35	0.25
5 : Aum.Tiket	0.22	0.26	0.26	0.26	0	0.26
6 : Imp.Infogr	0.13	0.15	0.19	0.19	0.35	0

Figure 15

Probability data table Non-conditional Investor 3
Source: Own elaboration obtained from Smic-Pro Expert

Box 18

	Prog.Fidl 5	Prog.Fid20	Prog.Fid30	Prog.Fid40	Aum.Tiket	Imp.Infogr
1 : Prog.Fidl 5	0	0.54	0.6	0.63	0.24	0.21
2 : Prog.Fid20	0.45	0	0.5	0.55	0.24	0.26
3 : Prog.Fid30	0.54	0.6	0	0.71	0.3	0.22
4 : Prog.Fid40	0.61	0.65	0.7	0	0.35	0.22
5 : Aum.Tiket	0.25	0.3	0.32	0.34	0	0.2
6 : Imp.Infogr	0.16	0.18	0.18	0.18	0.2	0

Figure 16

Probability data table Unconditional Investor 4.
Source: Own elaboration obtained from Smic-Pro Expert

Box 19

	Prog.Fidl 5	Prog.Fid20	Prog.Fid30	Prog.Fid40	Aum.Tiket	Imp.Infogr
1 : Prog.Fidl 5	0	0.22	0.25	0.3	0.25	0.12
2 : Prog.Fid20	0.35	0	0.4	0.45	0.3	0.17
3 : Prog.Fid30	0.47	0.5	0	0.55	0.3	0.2
4 : Prog.Fid40	0.52	0.56	0.6	0	0.35	0.2
5 : Aum.Tiket	0.32	0.35	0.36	0.36	0	0.21
6 : Imp.Infogr	0.15	0.18	0.2	0.2	0.16	0

Figure 17

Probability data table Unconditional Investor 5.
Source: Own elaboration obtained from Smic-Pro Expert

Box 20

b) CEO of the business

	Prog.Fidl 5	Prog.Fid20	Prog.Fid30	Prog.Fid40	Aum.Tiket	Imp.Infogr
1 : Prog.Fidl 5	0	0.48	0.55	0.6	0.45	0.16
2 : Prog.Fid20	0.55	0	0.58	0.65	0.5	0.19
3 : Prog.Fid30	0.6	0.62	0	0.7	0.5	0.22
4 : Prog.Fid40	0.65	0.7	0.75	0	0.55	0.22
5 : Aum.Tiket	0.16	0.16	0.16	0.17	0	0.19
6 : Imp.Infogr	0.19	0.2	0.24	0.24	0.57	0

Figure 18

Probability data table Non-conditional Investor 4.
Source: Own elaboration obtained from Smic-Pro Expert

3.4 Simple probabilities by group of experts

Box 21

A. investors.

	Probabilites
1 : Prog.Fidl 5	0.394
2 : Prog.Fid20	0.523
3 : Prog.Fid30	0.424
4 : Prog.Fid40	0.471
5 : Aum.Tiket	0.418
6 : Imp.Infogr	0.355

Figure 19

Table of simple probability data by investor group
Source: Own elaboration obtained from Smic-Pro Expert.

Box 22

B. CEO

	Probabilities
1 : Prog.Fid1 5	0.605
2 : Prog.Fid20	0.448
3 : Prog.Fid30	0.31 2
4 : Prog.Fid40	0.572
5 : Aum.Tiket	0.361
6 : Imp.Infogr	0.307

Figure 20

Simple Probability Data Table by Business CEO Group.
 Source: Own elaboration obtained from Smic-Pro Expert

3.5 Probabilities of Yes realisation by group of experts

Box 23

A. investors

	Prog.Fid1 5	Prog.Fid20	Prog.Fid30	Prog.Fid40	Aum.Tiket	Imp.Infogr
1 : Prog.Fid1 5	0.394	0.537	0.446	0.429	0.579	0.599
2 : Prog.Fid20	0.71 4	0.523	0.639	0.676	0.766	0.81 4
3 : Prog.Fid30	0.481	0.51 9	0.424	0.352	0.594	0.602
4 : Prog.Fid40	0.51 3	0.609	0.39	0.471	0.652	0.697
5 : Aum.Tiket	0.61 5	0.61 3	0.585	0.58	0.41 8	0.756
6 : Imp.Infogr	0.541	0.553	0.504	0.526	0.642	0.355

Figure 21

Table of probability data of If realisation of the investor group
 Source: Own elaboration obtained from Smic-Pro Expert

Box 24

B. CEO.

	Prog.Fid1 5	Prog.Fid20	Prog.Fid30	Prog.Fid40	Aum.Tiket	Imp.Infogr
1 : Prog.Fid1 5	0.605	0.888	0.729	0.881	1	0.91 4
2 : Prog.Fid20	0.658	0.448	0.274	0.536	0.669	0.61 3
3 : Prog.Fid30	0.376	0.1 91	0.31 2	0.231	0.43	0.293
4 : Prog.Fid40	0.833	0.684	0.424	0.572	0.901	0.772
5 : Aum.Tiket	0.597	0.539	0.497	0.569	0.361	0.688
6 : Imp.Infogr	0.464	0.42	0.288	0.41 4	0.585	0.307

Figure 22

Simple probability data table by business CEO group
 Source: Own elaboration obtained from Smic-Pro Expert

3.6 Probabilities of non-realisation by expert group

Box 25

A. investors.

	Prog.Fid1 5	Prog.Fid20	Prog.Fid30	Prog.Fid40	Aum.Tiket	Imp.Infogr
1 : Prog.Fid1 5	0	0.236	0.355	0.362	0.261	0.28
2 : Prog.Fid20	0.399	0	0.437	0.387	0.348	0.363
3 : Prog.Fid30	0.388	0.321	0	0.489	0.303	0.326
4 : Prog.Fid40	0.443	0.31 9	0.53	0	0.34	0.346
5 : Aum.Tiket	0.291	0.205	0.295	0.275	0	0.232
6 : Imp.Infogr	0.235	0.1 39	0.246	0.204	0.1 49	0

Figure 23

Table of probability data of If realisation by investor group

Box 26

B. CEO

	Prog.Fid1 5	Prog.Fid20	Prog.Fid30	Prog.Fid40	Aum.Tiket	Imp.Infogr
1 : Prog.Fid1 5	0	0.375	0.549	0.236	0.382	0.468
2 : Prog.Fid20	0.1 27	0	0.527	0.331	0.323	0.375
3 : Prog.Fid30	0.21 5	0.41 1	0	0.421	0.246	0.321
4 : Prog.Fid40	0.1 73	0.481	0.64	0	0.386	0.484
5 : Aum.Tiket	0	0.21 7	0.3	0.083	0	0.21 7
6 : Imp.Infogr	0.067	0.21 5	0.31 6	0.1 64	0.1 5	0

Figure 24

Data table of Yes realisation probabilities by CEO group

3.7 Scenarios

In this methodological phase, the most probable scenarios are selected, based on the probabilities of occurrence of the previously evaluated hypotheses. In other words, those scenarios that accumulate an 80% probability of occurrence are chosen. Based on these, Valarezo Aguilar et al. [2018] mentions three scenarios: the trend scenario, the break scenario and the normative scenario.

Mojica, F. [2010] refers to the trend scenario as the continuity of events that have been occurring and are expected to continue to occur in the future [hypothesis]. You can choose to take one scenario from the group that adds up to 80% probability and write the baseline scenario, or you can combine several of these scenarios and write the baseline scenario that, according to your judgement and knowledge, is the most probable in the future.

Normative scenarios, according to Parra, D. Q. [2008] are based on patterns and behaviours observed in the past or present. These scenarios project or extrapolate the past into the future, assuming that the future will be similar to the past and present. In other words, the assumption is that historical trends will continue over time.

For Pozuelo, M. [2010] the break scenario refers to a scenario that challenges the expected future trend [hypothesis]. You can select one scenario from those representing 80% of the probabilities and write the corresponding break scenario. Alternatively, you can combine several scenarios and draft the breakout scenario that, according to your judgement and knowledge, will materialise in the future.

3.8 Information

Box 27

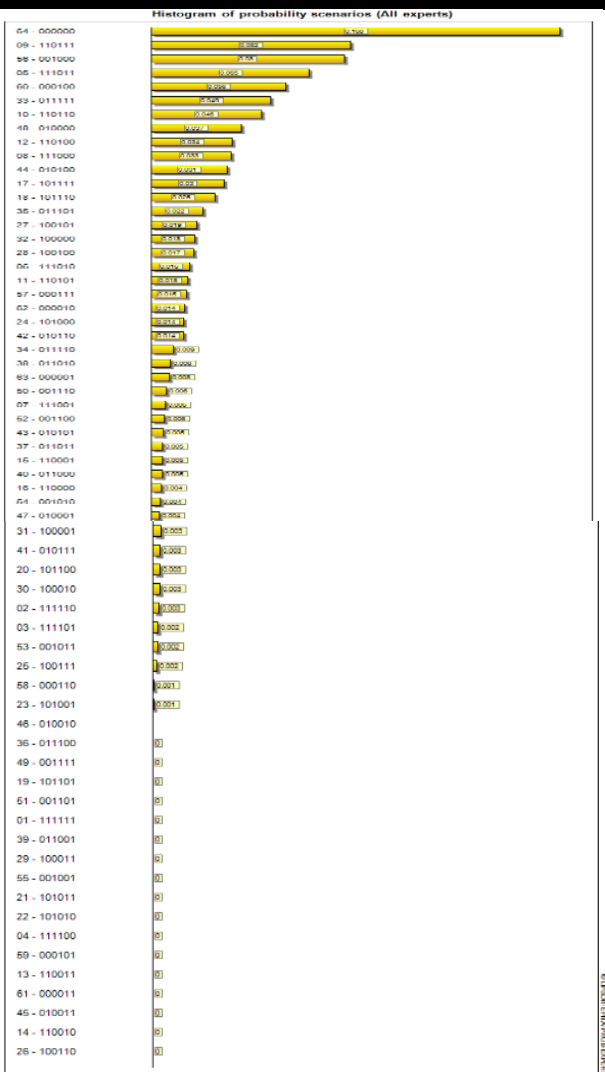


Figure 25 Histogram of Scenario Probability [All experts] Source: Own elaboration obtained from Smic-Pro Expert

Box 28

	Inversionistas	CEO	Ensemble des experts
33: 011111	0,066	0	0,049
34: 011110	0,013	0	0,009
35: 011101	0,029	0	0,022
36: 011100	0	0	0
37: 011011	0,007	0	0,005
38: 011010	0,011	0	0,008
39: 011001	0	0	0
40: 011000	0,006	0	0,005
41: 011011	0,004	0	0,003
42: 011010	0,018	0	0,014
43: 011011	0,007	0	0,005
44: 011010	0,042	0	0,031
45: 011001	0	0	0
46: 011000	0	0	0
47: 011001	0,002	0,008	0,004
48: 011000	0,036	0,042	0,037
49: 001111	0	0	0
50: 001110	0,009	0	0,006
51: 001101	0	0	0
52: 001100	0,008	0	0,006
53: 001011	0,003	0	0,002
54: 001010	0,005	0	0,004
55: 001001	0	0	0
56: 001000	0,078	0,085	0,08
57: 000111	0,02	0	0,015
58: 000110	0,001	0	0,001
59: 000101	0	0	0
60: 000100	0,051	0,068	0,056
61: 000011	0	0	0
62: 000010	0,019	0	0,014
63: 000001	0,004	0,018	0,008
64: 000000	0,166	0,173	0,168

Figure 26 Probability matrix of the scenarios [All experts] Source: Own elaboration obtained from Smic-Pro Expert

The scenarios were divided into two categories based on their probability of occurrence. The probable scenarios grouped those with a cumulative probability up to 80%, while the improbable scenarios included the remaining ones, which represented 20% probability, these scenarios are discarded.

The matrix of likely scenarios, constructed from the 6 hypotheses, presents us with 64 possible combinations. By assigning probabilities to each combination for both groups of experts [Investors and CEO], we obtain a histogram that orders the scenarios from highest to lowest probability. The most likely scenarios, which account for around 80% of the possibilities, are:

- a. Scenario 64: 000000 with a probability of 16.8%.
- b. Scenario 09: 110111 with a probability of 8.2%.
- c. Scenario 56: 001000 with a probability of 8%.

Article

- d. Scenario 05: 111011 with a probability of 6.5%.
- e. Scenario 60: 000100 with a probability of 5.6%.
- f. Scenario 33: 011111 with a probability of 4.9%.
- g. Scenario 10: 110110 with a probability of 4.6% g.
- h. Scenario 48: 010000 with a probability of 3.7% h. Scenario 48: 010000 with a probability of 3.7% i.
- i. Scenario 12: 110100 with a probability of 3.4%
- j. Scenario 08: 111000 with a probability of 3.3%.
- k. Scenario 44: 010100 with a probability of 3.1%.
- l. Scenario 17: 101111 with a 3% probability
- m. Scenario 18: 101110 with a 2.6% probability
- n. Scenario 35: 011101 with a 2.2% probability
- o. Scenario 27: 100101 with a 1.9% probability
- p. Scenario 32: 100000 with a 1.8% probability
- q. Scenario 28: 100100 with a probability of 1.7%.

From the histogram, the four most likely scenarios were identified.

Box 29**Table 3**

Scenario 64

Scenario 64 - 000000 - [Rupture Scenario]

The implementation of the loyalty system is a success and is obtaining the expected market share, as well as an increase in maintenance services by the infographic, and an increase in the sales ticket of the customers who are enrolled in the loyalty programme. The probability of occurrence of the scenario is 16.8%.

Source: Own elaboration.

Box 30**Table 4**

Scenario 05

Scenario 05 - 111011 - [Normative Scenario]

The implementation of the loyalty system is not accepted by the customers as expected, the average sales ticket did not increase and the maintenance services did not have the desired increase. With a scenario probability of occurrence of 6.5%.

Source: Own elaboration.

Box 31**Table 5**

Scenario 56

Scenario 56 - 001000 - [Regulatory Scenario]

The implementation of the loyalty system is not well accepted by customers, nor is there a difference in the consumption of customers enrolled in the loyalty programme compared to those who are not enrolled in the programme, and similar sales in the maintenance service compared to those who are not enrolled in the programme, as well as similar sales in the maintenance service compared to those who are not

Source: Own elaboration.

Box 32**Table 6**

Scenario 09

Scenario 09 - 110111 - [Baseline Scenario]

Loyalty system implementation is slower than expected, average ticket increase of shoppers who are enrolled in the loyalty programme is not as high as expected, slight increase in maintenance services due to implementation of infographics. With a scenario occurrence probability of 8.2%.

Source: Own elaboration.

Conclusions

After analysing the data of all possible scenarios and their probability of occurrence, it is feasible to implement the loyalty programme, as well as the implementation of infographics detailing the benefits of performing maintenance services in the company. This will help the company to increase its service sales as well as customer loyalty.

In a sector as dynamic as the bicycle industry, strategic planning is essential to ensure long-term success. Foresight provides us with the necessary tools to identify opportunities and threats, and to develop action plans to achieve our business objectives. By analysing variables such as competition, regulatory changes and consumer preferences, we can build a stronger future for business. It is essential that all members of our team, from management to sales people, understand the concepts of foresight and apply them in their daily work.

Declarations

Conflict of interest

The authors declare that they have no conflicts of interest. They have no known competing financial interests or personal relationships that might have appeared to influence the article reported in this paper.

Authors' contribution

Mendez-Perez, Irving: Synthesising information and conducting the study.

Lopez-Valdivieso, Leticia: Supervision.

Eliseo-Dantes, Hortensia: Supervision.

Notario-Priego, Ezequiel: Supervision.

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Public Availability

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Factors that influence business management in micro and small businesses

Factores que intervienen para la gestión empresarial en las micro y pequeñas empresas

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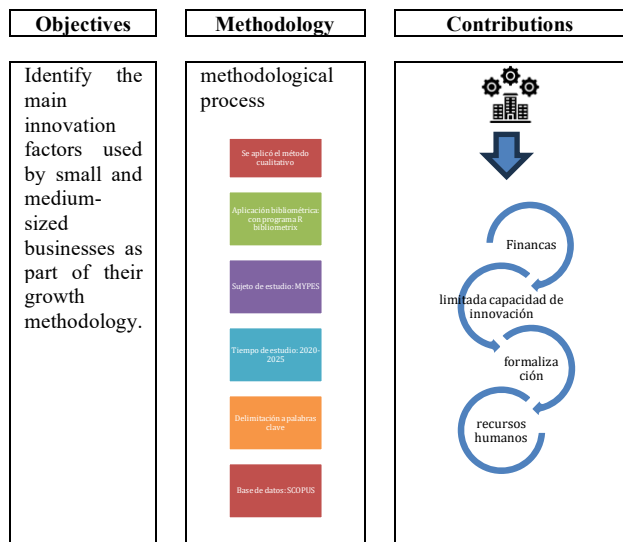
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Abstract

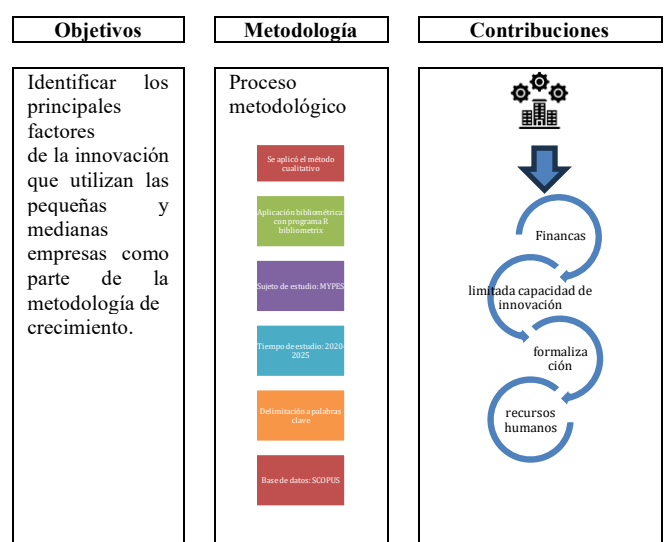
The objective of this research is to identify the business management carried out in MYPES in Mexico during the last five years, through a situational analysis and the strategies implemented to achieve their positioning in the current market. The research was carried out using the qualitative method, documentary, descriptive and transversal technique. The results show that MYPES face challenges in quality management, innovation and human resources management. However, opportunities were also identified to improve the competitiveness and sustainability of MYPES through the implementation of quality management systems, innovation and human resources management. The research concludes that business management is essential for the success of MYPES and that the implementation of appropriate strategies and tools can improve their competitiveness and sustainability.

Resumen

La presente investigación pretende identificar la gestión empresarial realizada en las MYPES en México durante los últimos cinco años, mediante un análisis situacional y las estrategias implementadas para alcanzar su posicionamiento en el mercado actual. La investigación se realizó mediante el método cualitativo, técnica documental, descriptiva y transversal. Los resultados muestran que las MYPES enfrentan desafíos en la gestión de la calidad, la innovación y la gestión de los recursos humanos. Sin embargo, también se identificaron oportunidades para mejorar la competitividad y sostenibilidad de las MYPES a través de la implementación de sistemas de gestión de la calidad, la innovación y la gestión de los recursos humanos. La investigación concluye que la gestión empresarial es fundamental para el éxito de las MYPES y que la implementación de estrategias y herramientas adecuadas puede mejorar su competitividad y sostenibilidad.



Business management, competitiveness, innovation, factors, MYPE'S



Gestión empresarial, competitividad, innovación, factores, MYPES

Area: Dissemination of and universal access to science

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Peer review under the responsibility of the Scientific Committee MARVID®- in the contribution to the scientific, technological and innovation Peer Review Process through the training of Human Resources for the continuity in the Critical Analysis of International Research.



Introduction

Business management in micro and small enterprises [MSEs] has become a crucial issue for this, according to Ríos [2024] efficient business management is fundamental for the growth and sustainability of enterprises, especially MSEs. Improving this management not only benefits individual enterprises, but also contributes to overall economic development, fostering job creation, innovation and the competitiveness of the business sector as a whole.

In this context, it is essential to identify the factors that influence the ability of micro and small enterprises to manage their resources, develop products and services, and maintain efficient and profitable operations in a highly competitive environment.

This article explores the key factors that affect business management in micro and small enterprises, with special emphasis on those elements that directly impact their performance and growth in the short and long term. Aspects such as strategic planning, organisational structure and available technologies will be addressed.

State of the art

The state of the art is a central and deductive category that is addressed and proposed as a methodological strategy for the critical analysis of the political, epistemological and pedagogical dimensions of research production in learning assessment.

The purpose of this paper is to elaborate an epistemological reflection on the construction of a state of the art of an object of study.

This means that the methodological and technical process of the research is conceived on the basis of the gnoseological analysis.

The first step in the development of the state of the art was the determination of variables, which were necessary for the collection of information, considering the search for contributions that have investigated the topic and the obtaining of their arguments to justify the factors considered in accordance with the dependent variable.

Box 1

Table 1

Determination of variables

Dependent	Self-employed	Authors
Business management in MSEs	MYPES	(Luyo Silvera L. y Ñañez Silva M., 2023)
	Planning	
	Organisational structure	(Mora Pisco, L.L. et al., 2016)
	Administrative process	
Management		

Business management in MSEs

It is very important to manage and administer your small business correctly, as carrying out the steps of good management helps to avoid problems and crises and to improve processes, which can transform some points of the culture of your business. Management:

This term refers to the administration of resources, whether within a state or private institution, to achieve the objectives proposed by the institution [Mora Pisco, L.L. et al., 2016].

Business management:

Management within the business world is a fundamental tool for economic development, not only for the companies themselves that implement their management systems, but also for their sector of activity or the country.

MYPES:

Small and micro enterprises [MYPES], due to their versatility and great dynamics in the rapid absorption of labour and generation of wealth.

Planning:

This function involves defining the goals of the organisation, establishing an overall strategy for the achievement of these goals and developing a detailed hierarchy of plans to integrate and coordinate activities

Organisation:

This is the way in which the structure of a business or enterprise is designed. It includes determining the tasks to be performed, who should perform them, how tasks are grouped, who reports to whom and where decisions are made

Article

Organisational structure:

Should be designed in such a way that it is clearly defined who has to do certain tasks and who is responsible for the results.

Management:

It consists of motivating subordinates, directing the activities of others.

Control:

Once goals have been set, plans formulated, structural arrangements outlined, staff trained and motivated, there is a possibility that something can go wrong.

Management function:

Implies the ability to lead people, a special gift to be recognised and followed by subordinates, and undoubtedly requires spontaneous professional technical and other managerial skills.

Strategic analysis:

Diagnose the scenario identify the most probable international and national political, economic and social scenarios, analyse the business agents exogenous to the company.

Administrative process:

Planning the anticipation of the future work of the company and the setting of the strategy and goals or objectives to be achieved by the company; organising, determining the functions and structure necessary to achieve the objective.

Technology management:

Apply intra and extra-company information and communication systems to all areas of the company, in order to make appropriate decisions in conjunction with the use of the internet

Financial management:

Obtain money and credit at the lowest possible cost, as well as allocate, control and evaluate the use of the company's financial resources, in order to achieve maximum returns.

Human resource management:

Seeking to utilise the workforce in the most efficient way possible by being concerned with the process of recruiting, retaining and developing staff.

Logistics and distribution management:

Supply the goods and services that will satisfy the needs of consumers, transforming a set of raw materials, labour, energy, inputs, information, etc. into duly distributed final products. In duly distributed final products.

Environmental management:

Contribute to creating awareness of the need to apply environmental protection policies in the company

Administration:

Process of structuring and using sets of resources oriented towards the achievement of goals to carry out tasks in an organisational environment. SDGs:

The Sustainable Development Goals or Global Goals, also known as Agenda 2030, are 17 interconnected global goals designed to be a "blueprint for achieving a better and more sustainable future for all.

For the search for information that allowed the construction of the state of the art, it was necessary to establish the variables of study, considering contributions from authors who in their discourse establish determining factors for business management to take place, which are shown in table 1: Determination of variables for the construction of the State of the Art

Business management in MSEs

According to [Prieto, et al 2024], they indicate that management begins to be undertaken in organisations to generate substantial changes, it is centred on the people who participate in it, who are considered the most valuable capital, which must be trained, motivated, thus deepening identification, involvement and loyalty towards the organisation. The objective of the research was to analyse organisational change and how its factors contribute to the management of mixed companies in the oil sector in the state of Zulia-Venezuela.

The methodology used in this project is structured in several phases that will allow a comprehensive approach to the problem, which was developed in the following way: with a non-experimental, field, transversal research design; and a descriptive type of study. The population is made up of mixed companies in the oil sector in the state of Zulia, and the key informants are six [6] managers and forty-two [42] members of the administrative staff of these companies. Two [2] questionnaires were applied, one for managers and the other for employees, with fifteen [15] items, and the results were subsequently graphed, reviewed and published. The results obtained show that the changes implemented in a positive way generate favourable results for the company, so it is recommended that managers take into account the uncontrollable elements of the environment in order to take actions that allow for management success.

The aforementioned article is very useful because management begins to be undertaken in organisations to generate substantial changes and is centred on the people who participate in it, who are considered the most valuable capital, who must be trained, motivated, thus deepening identification, involvement and loyalty to the organisation, generating sustainable competitive advantages over time.

According to Londoño C and Vázquez O [2021], they mention that management is an eminently practical discipline. However, at the epistemological level it is possible to identify that management is a scientific discipline that has three objects of study and can group three different types of research: basic research, applied research and humanistic research. In this order of ideas, this book presents some research that can be classified within these tendencies and that are elaborated by researchers from different universities, with different ideological stances and from various disciplines. Epistemological discussions on management research, education and financial analysis, practical and theoretical discussions on social responsibility and sustainable development goals, leadership and technology are presented. Therefore, the objective of the research was to identify the theories of the general philosophy of science and the epistemology of management and some research trends of Colombian management research groups.

The methodology used in this book presents a great diversity of data collection and analysis techniques; it starts from some traditional ones such as documentary review with conceptual analysis and synthesis and hermeneutic interpretation, also presents static analysis and comparative trends.

On the other hand, exploratory and descriptive studies are presented where instruments are applied to identify innovation capabilities in a group of participating companies. Likewise, studies are presented in which descriptive surveys with quantitative analysis are applied. Finally, a bibliometric-descriptive study is highlighted, developed through the review of articles published in Scopus between 2001 and 2021 in such a way that the main trends in management are recognised. For this, the study carries out a documentary review with analysis and conceptual synthesis and hermeneutic interpretation. Theoretical references: The above is applied to various contributions from the general philosophy of science and the epistemology of management and some research trends of Colombian management research groups selected from university rankings.

Results and conclusions: From the above, two criteria are obtained for a classificatory scheme of research trends in administration, based on a) the possible objects of study: organisations, administrative practice and organisational man, and b) the possible epistemic objectives of the types of academic research: humanistic research, basic scientific research and applied scientific research. The results of these adaptations allow us to recognise a series of particularities and specificities about the approaches to administration present in different periods of recent history.

This article is very useful because the recognition of research trends in the administrative discipline - or field of research in administration and organisations [hereinafter DA] - would make it possible to anticipate its possible progress and contribute to the understanding of its origins and foundations. This is a matter that results both from the general challenges of such an endeavour and from some particular issues. According to Galvarro, C.I [2021], he mentions that "The Sustainable Development Goals [SDGs] have defined global priorities and aspirations for 2030.

They represent an unprecedented opportunity to eliminate extreme poverty and to put the world on a sustainable path". Hence, the SDGs are the guidelines that the business world needed in order to contribute to a green recovery. The aim of the research was to see how companies from different sectors in the province of Huesca are responding to the SDGs demanded by society and how they have aligned them with their business strategy. In this way it can be seen how their good practices have contributed and contributed to development. The integration of the SDGs into business strategy and good practices in sustainable companies in the city of Huesca in their respective sectors and to assess the level of availability of social and environmental financial information.

The methodology applied in this research consists of a combination of quantitative and qualitative methods. The quantitative approach consists of accessing the available and objective data of each company for the verification and analysis of the economic-financial data, obtained from their annual accounts and the Iberian Balance Sheet Analysis System [SABI]. The data will focus on the results of the financial year and the analysis of the balance sheet. The quantitative analysis is complemented by a qualitative analysis of the sustainability reports supplemented by data collected from articles available on their respective websites. On the other hand, the qualitative approach will consist of conducting semi-structured interviews with CSR and sustainability managers to collect non-numerical data that will help to understand the vision of each entity on this issue. Furthermore, in some cases these interviews have been complemented with data from interviews previously carried out by other agents and webinars related to the subject. The results obtained show that the SDGs were designed for global action. Firstly, they are multiplied from eight to seventeen. This implies that new areas of action are accommodated. And, in addition, these goals concern all countries of the world and all their citizens, broadening the focus of the previous ones.

This article is very useful because the SDGs are an opportunity for companies to expand Corporate Social Responsibility [CSR], an initiative that is one of the global efforts to translate sustainable development into something concrete and measurable.

According to [Quintana J., Del Carmen P., 2020], they mention the importance they have for the development of a company so that the need to implement a business management model that allows organisations to face new challenges to achieve productivity and competitiveness in modern organisations can be deduced. Management in the business world is supposed to be a fundamental element for economic development, not only for the companies that implement management models, but also for the industrial sector to which they belong.

The aim of the research was to demonstrate whether or not the implementation of business management models is relevant regardless of organisational size. The methodological model used in the documentary study comprised three stages of analysis where first the reflection and argumentation of why business management is important and relevant in modern organisations was carried out; followed by the exposition of the key concepts to understand the relevance of applying a business management model, and then synthesising and concatenating the set of concepts to determine a position on the proposition where the importance of the business management model for modern organisations was highlighted. The methodological design was based on the deductive method accompanied by an exploratory study based on the systematic review. In the results obtained, the concatenation between these terms and the importance they have for the development of a company is synthesised in such a way that the need to implement a business management model that allows organisations to face new challenges to achieve productivity and competitiveness in modern organisations is deduced.

The article is very useful because highlighting a correct administration depends on an efficient management, that is why they are often given the same meaning, that is why it is of utmost importance to carry out a proper business management.

According to Castillo, García and Valderrama [2021] mention that with respect to the questionnaire applied in this research, the sample obtained is representative in aspects such as sectoral distribution, gender, years of operation, level of studies, seniority in the company and position.

During the years 2020 to 2025, the topics of innovation, technology adoption, small and medium-sized enterprises, among others, have attracted increasing interest in research, which has become a focus of study for many researchers [Figure 2]. Several approaches have been proposed to enhance business innovation, such as digital technologies, green social responsibility strategies, and sustainable business performance, among others.

This may be because the COVID-19 Pandemic significantly boosted the implementation of digital technologies across industries and large corporations, which generated an urgency to address how SMEs can adjust to new strategies and business models and flourish in a rapidly changing environment.

Box 3

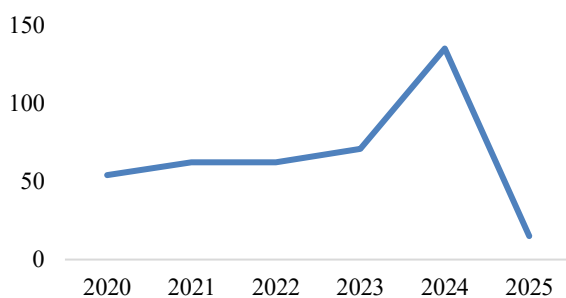


Figure 2

Annual scientific output [2020-2025]

Source: own elaboration based on data obtained from Scopus. [2025].

On the other hand, in terms of the most cited articles globally, in first place with 365 citations is the article entitled Exploring the impact of big data analytics capabilities on business model innovation: The mediating role of entrepreneurial orientation, among its main keywords it considers business model innovation and entrepreneurial orientation, in second place with 306 citations is the article entitled Expanding competitive advantage through organisational culture, knowledge sharing and organisational innovation, which takes competitive advantage and organisational innovation and culture as its main elements of study, in third place with 232 citations is Towards sustainability? Forest-based circular bioeconomy business models in Finnish SMEs, whose main objects of study were business models, circular economy and sustainability, followed by a study entitled Strategising in a digital world:

Overcoming cognitive barriers, reconfiguring routines and introducing new organisational forms, making a main analysis towards business models and digital technologies as well as new organisational forms, in fifth place with 148 citations is a study called How do corporate social responsibility and green innovation transform corporate green strategy into sustainable business performance?, which focused on studying corporate social responsibility as seen from the application of green innovation and green strategies, as well as sustainable firm performance [Table 2].

With the above, it is shown that in recent years research has been oriented towards the design of improvements of new business models that expand the competitive advantage, through the application of digital technologies, such as big data, in addition to showing how companies have been reorganised with new corporate social responsibility strategies in new sustainable scenarios, which involves adopting new practices that minimise environmental impact, community development and long-term viability of the business.

Box 4

Table 2

Most cited documents globally

Authors and year of publication	Article	Key words	Cit
Ciampi F.; Demi S.; Magrini A.; Marzi G.; Papa A. [2021]	Exploring the impact of big data analytics capabilities on business model innovation: The mediating role of business guidance	Big Data analytics capabilities; Business model innovation; Dynamic capabilities; Entrepreneurial orientation; fsQCA; PLS-SEM	365
Azeem M.; Ahmed M.; Haider S.; Sajjad M. [2021]	Extending competitive advantage through organisational culture, knowledge sharing and organisational innovation.	Competitive advantage; Knowledge-sharing; Organisational culture; Organisational innovation	306
D'Amato D.; Veijonaho S.; Toppinen A. [2020]	Towards sustainability? Forest-based circular bioeconomy business models in Finnish SMEs	Bioeconomy; Business model; Circular economy; Forestry sector; Sustainability; Bioeconomy; Business model	232
Volberda H.W.; Khanagha S.; Baden-Fuller C.; Mihalache O.R.; Birkinshaw J. [2021]	Strategising in a digital world: overcoming cognitive barriers, reconfiguring routines and introducing new organisational forms	Business Models; Cognitive Frameworks; Digital Technologies; Digital Transformation; New Organisational Forms; Platforms; Routines	204
Le T.T. [2022]	How do corporate social responsibility and green innovation transform corporate green strategy into sustainable business performance?	Corporate Social Responsibility; Green Innovation; Green Strategy; Sustainable firm performance	148
Buhalis D.; O'Connor P.; Leung R. [2023]	Smart hospitality: from smart cities and smart tourism to agile business ecosystems in connected destinations	Hotel Ecosystem; Research Directions; Smart Hospitality	134
Lestari S.D.; Leon F.M.; Widyastuti S.; Brabo N.A.; Putra A.H.P.K. [2020]	Background and consequences of innovation and business strategy on SME performance and competitive advantage	Competitive advantage; Innovation; Resource-based view; Strategic business management; Technology Acceptance Model; Technology acceptance model	110
Wang S.; Esperança J.P. [2023]	Can digital transformation improve market and ESG performance? Evidence from Chinese SMEs	Digital Transformation; ESG; Business Competitiveness; Firm Market Performance; fsQCA; PLS-SEM; PLS-SEM	98
Le T.T.; Ikram M. [2022]	Does sustainable innovation and enterprise competitiveness help improve business performance? Evidence from the SME sector in Vietnam	Emerging Markets; Enterprise Competitiveness; Firm Performance; SMEs; Sustainable Innovation; Vietnam	93

Sukumar A.; Jafari-Sadeghi V.; Garcia-Perez A.; Dutta D.K. [2020]	The potential link between corporate innovations and corporate competitiveness: evidence from UK IT companies	Corporate Competitiveness; Corporate Innovations; IT companies; R&D activities; UK	84
Dias Á.; Silva G.M.; Patuleia M.; González-Rodríguez M.R. [2023]	Developing sustainable business models: acquiring local knowledge and entrepreneurship in a tourist lifestyle	Creative Tourism; Innovation; Knowledge Management; Lifestyle Entrepreneurship; Mixed Methods Research; Self-Efficacy; Sustainability	71
Leong L.-Y.; Hew T.-S.; Tan G.W.-H.; Ooi K.-B.; Lee V.-H. [2021]	Progress in tourism research: a bibliometric analysis of tourism review publications	Bibliographic linking; Bibliometric analysis; Citation structure analysis; Co-citations; Cooccurrence; Scientific mapping; Tourism journals; VOS Viewer	64
Pradana M.; Pérez-Luño A.; Fuentes-Blasco M. [2020]	Innovation as a key to performance gains from absorptive capacity and human capital	Absorptive capacity [ACAP]; Human capital [HC]; innovation; performance; resource-based view [RBV]; human capital [HC]; innovation; resource-based view [RBV].	64
Ahmed W.; Najmi A.; Ikram M. [2020]	Driving firm performance through innovative capabilities: a contingency approach to innovation management	Competitive capabilities; Contingent resource-based vision; Speed of innovation; Process innovation; Product innovation	62
Florek-Paszowska A.; Ujwary-Gil A.; Godlewska-Dzioboń B. [2021]	Business innovation and critical success factors in the era of digital transformation and turbulent times	Business model; Change management; Competitiveness; Critical success factors; Digital transformation; Innovation; Knowledge management; Leadership; Talent management; Transformation; VUCA	56
Al-Omush K.S.; Al Attar M.K.; Saleh I.H.; Alsmadi A.A. [2020]	Drivers of e-banking entrepreneurship: an empirical study	E-banking entrepreneurship; Innovation; Proactivity; Risk-taking; Social capital; Senior management support	54
Kafetzopoulos D.; Psomas E.; Skalkos D. [2020]	Dimensions of innovation and business performance under environmental uncertainty	Business performance; Competitiveness; Innovation; Management; Competitiveness; Business Performance	53
Gastaldi L.; Lessanibahri S.; Tedaldi G.; Miragliotta G. [2022]	Business adoption of smart technologies to achieve structural ambidexterity: an analysis with SEM	Ambidexterity; Industry 4.0; Intelligent technologies; Structural equation modelling	51
Sarwar H.; Aftab J.; Ishaq M.I.; Atif M. [2023]	Achieving business competitiveness through corporate social responsibility and dynamic capabilities: empirical evidence from the emerging economy	Business competitiveness; Corporate social responsibility; Dynamic capabilities; Environmental performance; Government support; Green innovation; Government support	48
Hurtado-Palomino A.; De la Gala-Velázquez B.; Corisapra-Quintana J. [2022]	The interactive effect of innovativeness and potential absorptive capacity on innovation performance	Dynamic Capacity; Innovation Capacity; Innovation Performance; Potential Absorption Capacity; Tourism	47

Source: own elaboration based on data obtained from Scopus. [2025].

It is necessary to mention that although it is true that in recent years competitiveness, innovation, digital technologies and new business models have gained relevance, an analysis has been carried out of the countries that have contributed most to these terms, with Ukraine standing out in first place with 147 articles, which despite geopolitical challenges, in second place is China with 94 articles, which, as is well known, is seeking to maintain its accelerated economic development while strengthening its position as a technological leader at a global level, in third place is Indonesia with 77 items and in fourth place is Brazil, which, while trying to diversify their economies, usually link them to natural resources, in addition to boosting their competitiveness in the manufacturing and services sector.

In fifth place is Spain, with 63 articles, which aspires to overcome the backwardness of previous crises and boost its productivity through innovation, sustainability and digital transformation, factors which in turn are seen as drivers for a new, more resilient and competitive growth model [Figure 3].

Box 5

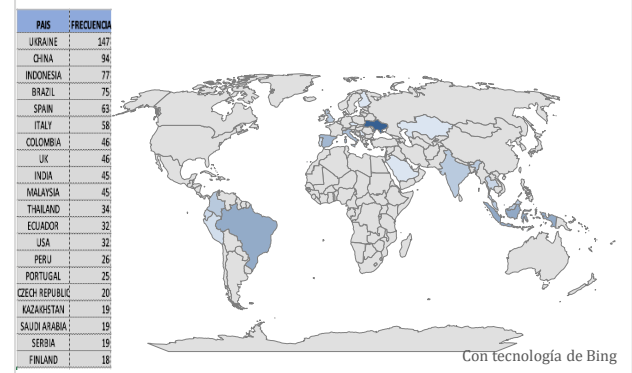


Figure 3

Scientific output by country

Source: based on Bing technology. [2025].

Conclusions

In the search for information the objective was achieved as well as elements were found that allow identifying the factors that intervene for business management in micro and small enterprises, as part of business management in MSEs is a complex issue that requires specialised attention, MSEs face numerous challenges in their business management, such as lack of financial resources, limited capacity for innovation and low formalisation, As for the implementation of quality management systems, innovation and human resource management is fundamental to improve the competitiveness and sustainability of MSEs, training and counselling are important tools to improve business management in MSEs, collaboration between MSEs, government agencies and business support institutions is fundamental to improve the competitiveness and sustainability of MSEs.

Discussions

1. Business management in MSEs is an issue that requires specialised attention, as these enterprises face unique challenges in their business management.

2. The implementation of management systems for quality, innovation and human resource management is essential to improve the competitiveness and sustainability of MSEs.

3. Training and mentoring are important tools to improve business management in MSEs, as they enable MSE owners and managers to develop skills and knowledge to improve their business management.

4. Collaboration between MSEs, government agencies and business support institution is essential to improve the competitiveness and sustainability of MSEs, as it allows MSEs to access resources and support to improve their business management.

Future work

There remain questions that arise from the research that allow for future work, such as conducting a case study on the implementation of quality management systems, innovation and human resource management in MSEs, developing a business management model for MSEs that takes into account their unique characteristics and needs, conducting a study on the effectiveness of MSEs, and developing a business management model for MSEs that takes into account the unique characteristics and needs of MSEs, and conducting a study on the effectiveness of MSEs in terms of the quality, innovation and human resource management, conducting a study on the effectiveness of training and counselling in improving business management in MSEs, as well as research to analyse collaboration between MSEs, government agencies and business support institutions to improve the competitiveness and sustainability of MSEs, and finally developing an action plan to improve business management in MSEs that takes into account the unique needs and characteristics of MSEs,

In summary, business management in MSEs requires specialised attention and a comprehensive strategy that takes into account the unique needs and characteristics of these enterprises.

The implementation of quality management systems, innovation and human resource management, training and mentoring, and collaboration between MSEs and government agencies and business support institutions are key to improving the competitiveness and sustainability of MSEs.

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Conflicts of interest

The authors declare that there is no conflict of interest.

Authors' contribution

Aguilera-Bautista, Crystal: Generation of proposal, context and literature review.

Antonio-Vidaña, Paula Rosalinda: Revision of the information, argumentation of the information, structure of the article, compliance with the requirements of ECORFAN and final revision for submission, as well as support in the production of the article and training of the student's human capital in the field of scientific dissemination.

Muñoz-Palacios, Luz del Carmen: Application of the tool in the search for information, generation of SCOPUS databases and generation of bibliometric information.

Crudet-Balderas, Juan Carlos: Revision of the document in compliance with the references and their modifications according to the template.

Availability of data and materials

The availability of the data obtained in this research is available through the corresponding author, which can be found in scientific search engines, and the data of the article are available upon request.

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This work has been financed with the authors' own resources.

Abbreviations

MYPES	Small and Micro Enterprises
MSE's	Micro and Small Enterprises
SDG's	Sustainable Development Goals
SABI	Iberian Balance Sheet Analysis System

Article

CSR Corporate Social Responsibility
 IGHII General Index of Individual
 Innovation Skills
 MSMES Micro and Small, Medium
 Enterprises

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Background

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Links between intellectual capital and mexican SMEs performance from a systemic perspective

Vínculos entre el capital intelectual y el desempeño de las pymes mexicanas desde una perspectiva sistémica

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Abstract





Intellectual capital [IQ] emerges from the ability and capacity of human talent to generate value, both present and future, which gives companies a significant competitive advantage. For effective management, it is crucial for organizations to understand the interrelationships between their components and their impact on performance. This article identifies and describes the links between IQ and business performance, as well as its main challenges and barriers when it comes to integrating its components from a Systems Perspective [SP]. Using a qualitative methodology with a descriptive scope, and semi-structured interviews with the companies under study. Links between the three components of the IC and Productivity, Competitiveness, and Profitability are identified, and the challenges inherent in the integration of these components are exposed.

Resumen

El capital intelectual [CI] emerge de la habilidad y capacidad del talento humano para generar valor, tanto presente como futuro, lo cual confiere a las empresas una significativa ventaja competitiva. Para su gestión eficaz, es crucial que las organizaciones comprendan las interrelaciones entre sus componentes y su impacto en el desempeño. Este artículo se enfoca en identificar y describir los vínculos entre el CI y el desempeño empresarial, así como en analizar los principales desafíos y obstáculos que surgen al integrar sus componentes desde una perspectiva sistémica [PS]. A través de una metodología cualitativa de alcance descriptivo, se realizaron entrevistas semiestructuradas a las empresas objeto de estudio. Los resultados revelan vínculos entre los tres componentes del CI y la productividad, la competitividad, y la rentabilidad, y se exponen los desafíos inherentes a la integración de estos componentes.

Links between Intellectual Capital and Mexican SMEs Performance from a Systemic Perspective		
Objectives	Methodology	Contribution
 Describe links between IC and Business Performance.  Identify challenges in integrating IC components.	 Descriptive and qualitative, literature review, case study, semi-structured interviews.	 To expose the essential variables to understand and facilitate the management of IC in companies.

Intellectual Capital, Systemic Thinking, Causal mapping

Vínculos entre el Capital Intelectual y el desempeño de las Pymes mexicanas desde una Perspectiva Sistémica		
Objetivos	Metodología	Contribución
 Describir los vínculos entre el CI y el Desempeño Empresarial.  Identificar los desafíos para integrar los componentes del CI.	 Descriptiva y cualitativa, revisión de literatura, estudio de caso, entrevistas semiestructuradas.	 Exponer las variables esenciales para comprender y facilitar la gestión del CI en las empresas.

Capital Intelectual, Pensamiento Sistémico, Mapeo causal

Area: Advocacy and attention to national problems

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Introduction

The wide range of knowledge assets, also known as invisible or intangible assets, pose a challenge for their recognition in financial statements due to their immaterial nature. However, their strategic relevance is undeniable, as they are fundamental to value creation and the development of sustainable competitive advantage. In response, large companies have recognised the imperative need to measure and manage these assets, in order to inform their strategies and generate long-term value [Benavides, 2013; Pacheco-Velázquez et al., 2024]. Moreover, it has been shown that these assets contribute significantly to improving both individual and organisational performance, especially in terms of innovative behaviour [Carmeli & Tishler, 2004; Damanpour, 1992; Youndt & Snell, 2004].

As a consequence, the concept of Intellectual Capital [IC] emerges from the interaction between various intangible components, reflecting the capacity and ability of human talent to generate present and future value. This value, in turn, allows companies to build a sustainable competitive advantage [Benavides, 2013]. Although the study of IC in business is not recent, the valuation of knowledge and, therefore, of IC, remains a challenge, making it difficult to manage and measure its economic impact [Ramón & Hinojosa, 2020; Villegas et al., 2017].

Overcoming this challenge would allow companies to better understand how and to what extent these components influence their performance, and thus determine their market positioning [Lev & Sougiannis, 1996]. Some research in this regard has identified that IC components have a positive and significant impact on Business Performance [Kengatharan, 2019; Tovstiga & Tulugurova, 2009; Vázquez-Ávila et al., 2014], and provide competitive advantage directly and indirectly [Chatterjee et al., 2022; Villegas et al., 2017]. Furthermore, it shows the value-creating capacity for firms of these components, and highlights common elements between IC and business models [Ujwary-Gil, 2017]. However, it has been found that the impact on performance can be positive but not always significant [Kianto et al., 2017; Pigola et al., 2022], as well as not all studies agree on the components that most affect performance and their elements [Kianto et al., 2017; Villegas et al., 2017].

In the context of Small and Medium Enterprises [SMEs], Intellectual Capital [IC] acquires an unprecedented relevance, as it represents a high-value asset due to its ability to generate a higher economic return from its intangible assets [Axtle-Ortiz, 2009]. Ignoring this aspect implies that SMEs in Mexico are missing out on a crucial resource for their development.

The lack of recognition of the components or variables of IC prevents these companies from reflecting their real value, with the result that more than 90% of them underestimate the total value of their company by up to 30%. This implies limits in accessing better interest rates with banks, not being able to work with AAA+ clients or suppliers, or with funders or corporate investors [MNP Consultores, 2023].

In their field study of SMEs in Mexico, Maranto and Tagle found that, of the performance achieved by SMEs, 66% was obtained by internal factors, represented by organisational structure, human resources and technology; these terms being relatively similar to those used to denote the basic components of IQ [Maranto-Vargas & Tagle-Rangel, 2007].

This is why the management of IC is a key element in the model of the outstanding or competitive company of the 21st century [Arias-Ordóñez et al., 2007], remaining as a management of intellectual assets from a managerial or strategic point of view [Martins & Viedma, 2006].

As a consequence, the value of Intellectual Capital [IC] lies in the ability of each individual within the organisation to make decisions that optimise the flow of data, information and knowledge. These decisions can maximise returns or minimise costs, among other benefits, thus driving business effectiveness and efficiency [González & Rodríguez, 2018].

Therefore, effective management of intangible assets requires understanding their components and recognising their intrinsic value within the organisational structure [Axtle-Ortiz, 2009].

In consideration of the previously mentioned factors - the relevance of knowledge and its management, the capacity of Intellectual Capital [IC] to generate present and future value in SMEs, the difficulty of reflecting its components in financial statements, its potential to develop competitive advantages and improve organisational and individual performance, and the limitations in access to credit and financial opportunities due to the lack of recognition of its value - a comprehensive study on this topic is justified. Thus, the main objective of this study is to describe the links between IC and the performance of the companies studied from a Systemic Perspective, identifying the variables that make up its components, and the main challenges they face in the integration of the components of IC.

By virtue of this, the aim is to answer the following questions: What are the links between IC and the performance of the companies studied from a Systems Thinking perspective? What are the main challenges and barriers to the integration of the components of IC faced by the SMEs studied?

Accordingly, and in order to guide this research, the structure of the research will consist of:

- Introduction
- Intellectual Capital
- Essential elements of the linkages between IC, and Business Performance
- The Systemic Perspective on the integration of IC and Performance
- Methodology
- Results and Discussion
- References

Intellectual Capital

The concept of IC defines in depth strategic resources as its main focus [Chatterjee et al., 2022]. IC management focuses primarily on the creation, acquisition and effective management of all intellectual resources required to meet business goals and successfully execute its strategies [Arias-Ordóñez et al., 2007]. Thus, IC is the result of the interrelation between three basic or general components [Benavides, 2013].

Human Capital [HC] can be described as the set of all the knowledge, skills, abilities, skills, expertise and experiences of the individuals of an institution, which can be used to achieve the objectives of the company [Stewart, 2001]. Structural Capital [SC] would be all the structures, procedures, routines and cultural aspects that allow the knowledge and practice generated by the CH to be compiled, ordered, improved and disseminated throughout the firm and even transformed into intellectual property [Bontis, 1998].

Client Capital or Relational Capital [RC] is the set of existing and potential resources that emerge from the networks of individual and/or organisational relationships or that are collected through these networks [Cabello-Medina et al., 2011], and in other considerations, it is the knowledge that covers the relationships between the organisation and its stakeholders [customers, investors, suppliers, government agencies, etc.], as well as the image that is built of the organisation to the outside world [Bontis, 1998; Brooking, 1997; Stewart, 2001].

Essential elements of the linkages between IC, and Business Performance

IC is based on strategic intangible resources [Chatterjee et al., 2022], which in order to achieve better business performance, skills, abilities and other related elements must be used efficiently [Barney, 1991; Makadok, 2001]. Of the components that make it up, it is possible to find CH as the main one in the generation of value [Bontis, 1998].

The performance variables, from the many presented, concentrate on competitiveness as the capacity to respond over time, profitability as the maximum income obtained from sales considering the investment, and productivity conceiving the results of a work process and the inputs consumed in it, and from the quality that arises from the work processes that makes them improve in a permanent, sustainable and systemic way [Pacheco, 2002].

To evaluate it, both objective and subjective variables have been considered, however, studies have leaned towards indicators such as: growth, profitability and market share, both in financial and non-financial terminologies [Barradas-Martinez et al., 2021].

In this sense, the financial domain can be represented by profitability, growth and market value, while the non-financial or operational domain could include particularities of competitiveness such as innovation, quality, employee and customer satisfaction, and reputation [Varadarajan & Ramanujam, 1990] as one of many.

Accordingly, performance impacts considering IQ are mainly weighted on dimensions with subjective character, e.g. generally satisfied customers, reduced problem-solving time, and sales growth [Bontis, 1998] to name a few. However, it is possible that control variables negatively affect the values of these components [Villegas et al., 2017], so the influence of IQ may or may not be significant on performance [Pigola et al., 2022]. Some of these links can be identified as: constant implementation of new ideas, immediate access to necessary information, knowledge distribution processes in the company, or the localisation and application of knowledge for dynamic environments [Vázquez-Ávila et al., 2014], to name a few. As a consequence, this allows a correct management and evaluation of knowledge assets to improve strategic planning and influence organisational behaviour [Lerro et al., 2014].

Thus, in companies that are oriented towards the service sector, a stronger strategic planning and focus is necessary due to the intangible nature of their activities [Kianto et al., 2010]. However, environmental factors, such as socio-economic or cultural factors, influence IC procedures [Tovstiga & Tulugurova, 2009], as well as its components may be moderated by age or gender in improving performance [Chatterjee et al., 2022], so that the ability of firms to know and apply knowledge also has considerable influences on performance [Phusavat et al., 2013], being necessary to know these interactions between IC, and business performance.

The Systemic Perspective in integrating IC with Performance

The visual breadth provided by PS would consider the different perspectives of others [Chapman, 2004], and understand the interrelationships between elements, and is considered the best approach to manage and refine complex circumstances in reality [Reynolds & Holwell, 2010].

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Furthermore, the mapping of mainly qualitative data facilitates their organisation, which from this integral and systemic approach would make it possible to visualise them as interrelated sequential arguments [Mahajan et al., 2019], and to understand the effectiveness of the strategies used by a team to manage the complexity of their tasks [Espejo & Reyes, 2016]. This allows us to view IQ from an integrative view [Sánchez et al., 2007], facilitating the understanding of the phenomenon and its interactions over time [Forrester, 1971]. These causal maps can then be simulated in computer software, making it possible to explore these interactions within systems, and to verify whether they produce novel behaviours or change over time [Bonabeau, 2002].

Decision makers thus have the ability to manage the complexity and uncertainty resulting from their interaction with a dynamic environment, in addition to generating solutions that are feasible, attractive and durable [Ackermann & Eden, 2010], facilitating the management of complexity through their processes of data extraction, organisation and analysis [Ackermann & Alexander, 2016]. It is for this reason that it has been put forward in depth in other research as a systemic perspective or approach that provides a better understanding of complex systems, explaining the why and how of the occurrence of events [Checkland, 1993; Senge, 2010].

Methodology

With a constructivist philosophical underpinning [Creswell & Creswell, 2018], a qualitative approach research is proposed, for a case study with a non-probabilistic design for convenience and opportunity, collecting data directly from the sectors where the members live the problem under investigation [Hernández-Sampieri et al., 2010], and taking into account the characteristics and particularities of the companies under study, as well as the environment and the sector in which they operate [Stake, 1995; Yin, 2014]. Data were collected using non-participant observation, semi-structured interviews with three companies in the services sector, the Grupo Corporativo Hotelero Las Brisas Hotels & Resorts, the consulting firm IpCom with advisory services on technological and digital solutions, and the corporate firm MNP Consultores, experts in the field of IC in Mexico and corporate issues.

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In addition, the reading of documents, books, or articles is used as a literature review [Hernández-Sampieri et al., 2010; Schettini & Cortazzo, 2016].

On the other hand, Atlas. Ti. 2024, which from an inductive approach codes the concepts for their subsequent grouping according to their relationship, both from those compiled through the literature consulted, as well as from the interviews. This allows a mapping of these relationships and an understanding of the study phenomenon [Hernández-Sampieri et al., 2010].

The interview transcripts are placed in the programme and relevant documents from the literature for open coding and textual analysis of each word. The open codes created are then grouped into categories using axial coding [Braun & Clarke, 2021]. Finally, Ithink 8.0 software is used to represent the complexity of the variables from different levels of focus [Chapman, 2004]

This whole process of data collection and analysis from the tools facilitates the organisation of a considerable amount of qualitative data, allowing it to be presented as interrelated sequential arguments, and a holistic and systemic approach [Mahajan et al., 2019].
Results and Discussion

Links between IQ and Performance from a Systems Thinking perspective

The structure of this section was built from the coding and categorisation of variables by Atlas.Ti software. 2024. This was firstly agreed by an initial open coding with the literature documents considered and the interviews conducted. Subsequently, an analysis was carried out and a series of grouped categories were determined with axial coding [Mohajan & Mohajan, 2022]. Finally, these categorisations allowed the analysis of the links between IQ and Performance. For their analysis, the results are presented at three levels, from Macro level linkages to Micro level linkages. This allows us to observe the behaviour of the variables from a general level without going into specific details, to the disaggregation of the groups formed by the variables for a more detailed analysis. The Meso level linkages contemplate the disaggregation of the general variables, while the Micro level linkages represent the disaggregation of the variables at the Meso level.

General linkages [Macro and Meso Levels]

The links established between IC and Business Performance variables in general are mainly represented in the literature by the ability of IC to positively impact Performance through the firm's intangibles [Benavides, 2013]. These relationships are represented according to the capabilities generated by the components of IC that tend to influence firm outcomes, either through improved productivity or performance [Kengatharan, 2019; Phusavat et al., 2013], generating competitive advantages [Chatterjee et al., 2022], success in meeting the goals set by firms [Vrontis et al., 2021], and profitability [Villegas et al., 2017].

However, these linkages are better represented at a more disaggregated level [Meso Level], reflecting the dynamics between the components of the overall variables. This result reflects the conclusion of the application and analysis of axial coding by grouping representative variables into categories [Mohajan & Mohajan, 2022].

The open coding yielded some 193 codes, which were analysed and grouped into 7 main categories, from which a further 22 subcategories are derived that represent at the Meso level the relationship between the variables, see Table 1.

Box 1

Table 1

Categories identified and grouped

Categories	Subcategories
Human Capital	- Cognitive Skills and Capacities. - Behavioural Skills and Capacities. - Essential Skills and Capacities.
Relational Capital	- Customer Relations. - Supplier Relations.
Structural Capital	- Organisational Culture. - Management, evaluation and control processes. - Corporate Image and Reputation. - Organisational Information Systems and Structures.
Productivity	- Cost Reduction - Fulfilment of Objective - Response Time
Competitiveness	- Market position. - Sales growth. - Customer satisfaction. - Innovation.
Profitability	- Return on Sales.
External Factors	- External Agents. - Socio-economic factors. - Cultural Factors. - Technologies. - Social Events.

Source: Own elaboration

These categories and subcategories found coincide with those presented by authors in different analyses of IQ and Performance. The case of IC corresponds to those proposed by the classical literature, referring to CR, CH, and CE [Bontis, 1998; Brooking, 1997; Stewart, 2001], while Performance is made up of the variables Productivity, Competitiveness and Profitability [Pacheco, 2002]. On the other hand, variables referring to the environment could be found, which refer to socio-economic, cultural, and technological factors [Tovstiga & Tulugurova, 2009], social and external agents [Tovstiga & Tulugurova, 2009].

As a result of the research, the Meso-level linkages yield different relationships that can be visualised in Annex 1:

- The RC is linked to social events to establish relationships with both suppliers and customers, and these have results in the company's Productivity, Competitiveness and Profitability. It also relies on the company's structural tools and processes for its management.
- CH is linked to aspects such as the working age generations and the job opportunities offered by the market, as well as to new technological trends. It also interacts with structural aspects of the company, relates to customers and suppliers, and generates links with Productivity and Business Competitiveness.
- The EC is linked to job opportunities, technology trends, and social events, to establish relationships with both suppliers and customers, and to provide the tools and functions necessary for their functionality with results in Productivity and Competitiveness.

Micro Level Linkages

The Micro Level analysis of the linkages between the variables yielded more detailed results of how these linkages are established between the variables, as can be seen in Annex 2.

In this analysis it was possible to identify that the subcategories of RC are linked to the subcategories of Profitability, Productivity, and Competitiveness.

These linkages were initially identified through negotiation strategies with suppliers, leading to Reduced Input Costs, and as a result, improved Profitability on Sales, which is consistent with other research findings such as those of [Kengatharan, 2019].

In addition, Customer Relationships grant the opportunity and access to the market increasing the chances of improving their market position. Also the results achieved with the strengthening of Customer Relationships thanks to Social Events, Innovation of processes and procedures, and the use of technological tools.

These events and relationships promote the exchange and acquisition of information by the company, which makes it possible to identify the preferences and requirements of customers, to innovate and generate new forms of management that meet their needs, driving sales growth.

The CH subcategories were linked to Competitiveness and Productivity as a result of Cognitive Skills and Abilities, Behavioural Skills and Abilities, and Essential Skills and Abilities to generate innovative ideas from the employee, such as a comprehensive multidisciplinary team that can address the needs and requirements of customers, which is in line with arguments put forward in the literature such as those of [Kianto et al., 2017]. Innovation in these processes and procedures derived from customer needs and preferences drive Customer Satisfaction.

These skills and capabilities are in turn linked to environmental spheres such as Active Working Age Generations, Job Opportunities offered by the market, and Technologies, generating the need for constant learning due to technological advances, and highlighting the attitudes and behaviours of employees towards job instability due to the opportunities offered by the market, and the beliefs and purposes of employees, which finds similarity on the need for the technological link for its development in other research such as that by [Tovstiga & Tulugurova, 2009].

Experience and knowledge of best practices are linked to the ability to restructure business processes and procedures in line with these best practices, and in turn to document them for later use, which is consistent with previous studies.

In turn, age is a component linked to the Generations variable, which is also linked to the use of technological tools, and the attitude towards education and training, reflecting the resistance of those with more experience to use and adopt them, which may result in delays in Response Time to customers.

Similarly, the new generation finds it easy to use and apply technological tools, and can speed up the achievement of objectives set out in the established time, as well as establish better relations with clients. However, their attitude and behaviour is more unstable, as despite receiving training and work incentives, they are not guaranteed to stay in the company after having acquired these skills and abilities, which concurs with results found on the moderating influence of age such as those of [Chatterjee et al., 2022].

The EC subcategories link to the Productivity and Competitiveness subcategories by providing incentives for Target Fulfilment, measuring the efficiency of operational processes by reducing Response Time, and implementing technological tools to streamline them. The Image and Reputation of the company generates access or opportunities to establish its Position in the Market, this is also supported by an Organisational Culture that fosters the spirit and awareness to achieve that position and the fulfilment of objectives. While that same Organisational Culture is sometimes difficult to change when it comes to encouraging those experiences and knowledge of best practice to be documented, this is linked depending on the size of the company.

Management Evaluation and Control Processes such as the implementation of well-documented processes and well-established policies, allow operations to be done more efficiently and reproducibly, regardless of the experience or knowledge of the employee, favouring the Achievement of Objectives. Likewise, training and education activities foster knowledge for the achievement of Goal Attainment and learning, while technological tools enhance these activities.

In addition, technological trends drive the need for training to update knowledge and new practices, and enable the implementation of new technological tools.

These tools facilitate and streamline business activities and processes, resulting in the possibility of reducing the Response Time to customers and facilitating the Fulfilment of Objectives, which coincides with the results on the mediation of CE with CH found in other research such as that of [Kianto et al., 2017], with the aim of achieving Sales Growth.

However, the expected results are not necessarily achieved by the mediation of employees' Behavioural Skills and Capabilities.

Main challenges in the integration of Intellectual Capital components

The main barriers to integrating the components of IC could be found both inside and outside the company.

Knowledge obsolescence: Firstly, it was detected how in dynamic industries, knowledge quickly becomes obsolete. Employees must constantly keep up to date, which can create pressure and difficulty in balancing expertise and versatility.

Professional Specialisation: Some employees acquire very specific knowledge applicable only within the companies in their professional profile, limiting their capacity for external mobility. Professional specialisation in specific areas may mean a lack of knowledge of complementary aspects relevant to the business activity and the needs of the company. Moreover, this may discourage the pursuit of more generalised learning.

Employee behaviour: Employee behaviour can be affected by a variety of elements resulting in both positive and negative behaviour for the company, depending on performance. The application of incentives to employees does not necessarily drive a proactive attitude towards their work activities. In turn, their behaviour or attitude influences their daily professional activities and decisions in a random way.

Work-life balance for group training and education: opportunities for professional training and education are hindered by the presence of work unavailability, workload, and personal interests of employees, resulting in the neglect of available courses or programmes.

Labour market competitiveness: The opportunities offered by the labour market condition the behaviour of employees in search of greater benefits. Once they are educated and trained, they gain knowledge that is of high value to other companies in the market, deploying the initiative to leave their current location and move to other companies. This leaves the company that invested in their training without this useful asset of knowledge valuable to it.

Generational Culture: Storing knowledge of relevance to the company when it has not been considered, or is customary, alludes to resistance from the organisational culture, which implies a transformation of the organisational culture for acceptance and fluidity of the process. The more experienced generations, on the other hand, face vicissitudes and difficulties due to the implementation of new technological tools in the work context as a result of technological advances.

Newer generations tend to move or change companies more often, leading to less job stability compared to more experienced generations. The more experienced generations in comparison prefer more conservative operational practices, out of habit or personal comfort, which leads to a rejection of new technological implementations in the company.

Clear definition of Strategic Objectives: Similarly, in order to integrate the IC components and improve their management, the strategic objectives of the company must be considered and clearly established, which will facilitate the best direction and application of these IC components.

Conclusions

It can be concluded that the components of IC are linked to Performance variables, mainly in the non-financial dimension of Performance, and not necessarily directly. Human Skills and Capabilities are necessary for the generation and application of ideas that drive Sales Growth, the achievement of results, and the Fulfilment of Business Objectives.

Innovation, arising from employee ideas, enhances the delivery of solutions to customers, achieving Customer Satisfaction and Sales Growth.

The company's Information Systems and structures facilitate and provide different structural forms that support the activities of the employees to achieve the expected performance results. While having a favourable Image and Reputation provides the opportunity for a better Market Position.

The implementation of well-documented processes and well-established policies allows operations to be more likely to be efficient and reproducible regardless of employee experience or knowledge. Whilst Customer and Supplier Relationships primarily generate access to opportunities in a highly competitive marketplace, fostering market advantage through the establishment of strong and trusting relationships, as well as in Return on Sales.

The main challenges in integrating the components of IC showed that management itself faces obstacles regardless of the sector or business activity that companies are engaged in.

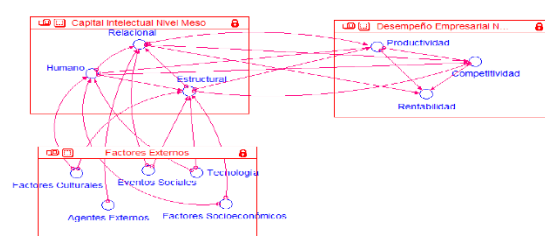
Of these, the obsolescence of knowledge and the need for constant updating due to technological advances could be identified, as well as the resistance of organisational culture and human behaviour to store relevant knowledge in the company, as there was no need to store it in the past.

Finally, without clearly defined strategic objectives, better direction and implementation of the IC components and their management approach would become more complex.

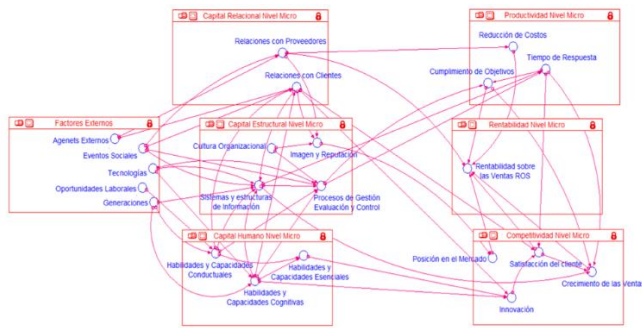
Furthermore, employee behaviour is impossible to predict, but indirectly influences company results, with resistance to change, assimilation of new practices and tools by more experienced staff, and job instability due to market offers from other companies. While the workload or the unavailability of working hours makes it difficult to develop knowledge from training or qualification.

Annexes

Annex 1. Meso-level linkages



Annex 2. Micro Level Linkages



Annex 3. Links in Atlas Ti. 2024

https://drive.google.com/file/d/1R96S30gkfeTS73suDFQKYKq-FUEIACm0/view?usp=drive_link

Declarations

Conflict of interest

The authors declare that they have no conflicts of interest. They have no known competing financial interests or personal relationships that might have appeared to influence the article reported in this paper.

Contribution of the authors

Cala-Hernández, Josué: Contributed to the idea, conceptualisation, writing, construction and analysis of the research.

Ramírez-Herrera, Dania: Contributed to the validation, formal analysis and revision of the research.

Availability of data and materials

This article was based on access to repositories to identify the state of the art of the research topic, with a bibliographic survey of books, journals and scientific articles in both English and Spanish, obtained mainly from Web of Science, Scopus, Elsevier, among others.

In addition, through semi-structured interviews and observation, it was possible to construct the coding and grouping of the variables identified.

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Abbreviations

CI	Intellectual Capital.
CR	Relational Capital.
CE	Structural Capital.
CH	Human Capital.
PS	Systemic Thinking.
PyMEs	Small and Medium Enterprises.

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Background

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Marketing as a strategic tool for micro and small businesses for business success

La Mercadotecnia como herramienta estratégica en las Micro y Pequeñas Empresas para el éxito empresarial

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Abstract

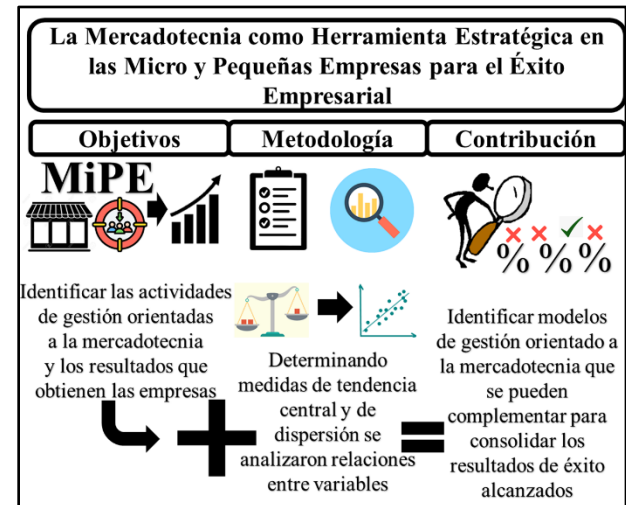
Marketing represents an essential tool for the growth and sustainability of micro and small enterprises [MSEs], especially in contexts of high competition and limited administrative capacity, where the application of marketing strategies has an impact on the success of MSEs. The findings of this study reveal that the structured use of management tools, including the marketing mix, positively correlates with better financial results and business perception.

Resumen

La mercadotecnia representa una herramienta esencial para el crecimiento y sostenibilidad de las micro y pequeñas empresas [MiPE], especialmente en contextos de alta competencia y limitada capacidad administrativa, donde la aplicación de estrategias de mercadotecnia tienen impacto en el éxito de las MiPE. Los hallazgos del presente estudio revelan que el uso estructurado de herramientas de gestión, incluida la mezcla de mercadotecnia, correlaciona positivamente con mejores resultados financieros y de percepción empresarial.



Marketing, Micro and Small Businesses, Business Success



Mercadotecnia, Micro y Pequeñas empresas, éxito empresarial.

Area: Dissemination of and universal access to science

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Peer review under the responsibility of the Scientific Committee MARVID®- in the contribution to the scientific, technological and innovation Peer Review Process through the training of Human Resources for the continuity in the Critical Analysis of International Research.



Introduction

Micro and small businesses constitute the economic pillar of Mexico, generating more than 52% of formal employment [INEGI, 2023]. However, they face high mortality rates, largely attributable to the poor application of administrative tools and marketing strategies [Patino-Galvan & Hernández, 2023]. This study explores the application of marketing in MSEs as a central element of their management model, highlighting its influence on profitability, competitiveness, and business survival.

State of the Art

Marketing has evolved from a commercial function focused on sales to a comprehensive strategy for identifying, satisfying, and retaining customers. Kotler and Keller [2016] define marketing as the social and administrative process by which individuals and groups obtain what they need and desire through the creation and exchange of products and values.

Since the founding of businesses, formal marketing models have not been applied because the vast majority of entrepreneurs implement them empirically, with the evidently limited use of management tools [Patino-Galvan & Hernández, 2023]. It is common for MSEs to reduce marketing solely to advertising actions, neglecting essential elements for focusing on the customer [Kotler and Keller, 2016].

In MSEs, their limited organizational structure and restricted resources make the formal implementation of marketing strategies difficult [Sanchez et al., 2017]. The limited budget available to these types of companies forces them to make decisions without reliable information, relying primarily on the owner's experience or hunches [Sanchez et al., 2017]. However, entrepreneurs often implement marketing activities without realizing that they are part of a management model [Juárez & Golovina, 2021]. Lacking sufficient skills, MSEs face the challenge of implementing improvised, incomplete, and ineffective management activities [Nouri and Soltani, 2015]. Tools such as SWOT analysis, strategic planning, and the marketing mix [product, price, place, and promotion] can be adapted to their scale, generating significant improvements in performance [Dermawan et al., 2023].

In these companies, decision-making is reactive and unplanned, with little support from performance metrics or in-depth customer knowledge [Rigby, 2015]. However, various studies recognize that marketing training, as part of the business training of entrepreneurs, is an effective way to professionalize and boost organizational performance in MSEs [Filion, 2011].

Methodology

A literature review was conducted on the application of marketing in micro and small businesses, identifying administrative activities that address this issue.

The research was designed as an applied approach, with a quantitative, descriptive, and cross-sectional approach. A questionnaire was administered to 108 micro and small enterprises in Campeche to identify the use of administrative models, including marketing tools, and their effects on variables such as net profit, sales growth, and perception of success.

Furthermore, complementary theoretical references from key authors such as Kotler, Armstrong, Filion, and Rigby are integrated to contextualize and contrast the empirical findings.

Results

The research results show that only a fraction of MSEs consistently apply marketing tools.

Those that do, such as the use of social media, customer analytics, and marketing mix, show better success indicators.

As shown in Figure 1, it was observed that more than 90% of companies contact customers using one or more social networks, although during the study it was not identified whether the remaining 9% that do not use modern means of communication omit them due to ignorance, disinterest or because they are not applicable to the business.

Box 1

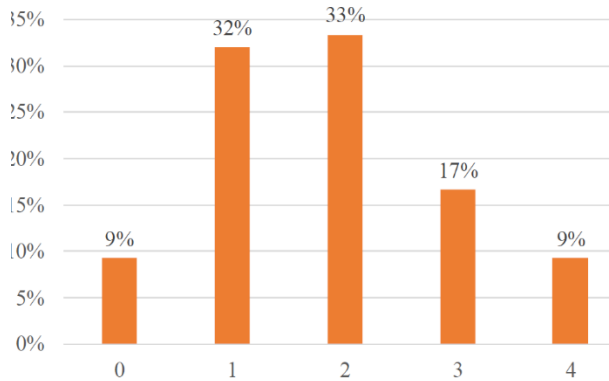


Figure 1

Proportion of MSEs by the Number of Social Networks Used

Source: Own Elaboration

Although most businesses report using media to communicate with customers, they don't leverage it to gather customer feedback; as shown in Figure 2, only 33.3% of MSEs do so frequently. Even though only 83.7% of companies know to some extent the opinion of their customers, 92.6% think they know the reasons why the customer chooses them to make their purchases.

Box 2

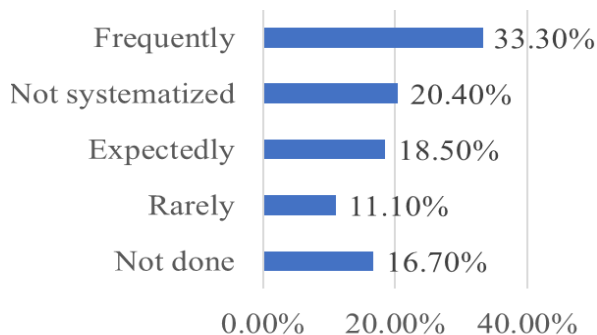


Figure 2

Proportion of MSEs that consult customer opinion

Source: Own Elaboration

A similar proportion is observed regarding the knowledge they have about their competitors, although approximately 83% of businesses know something about them, only 44% monitor them frequently.

The purpose of companies' marketing-related activities is focused on managing their operations and personnel tasks, and they do not necessarily contribute to understanding their customers and improving their market performance. As shown in Figure 3, just over 20% of businesses do not think about the future, and only 24.1% of MSEs do so regularly as part of their management model.

Box 3

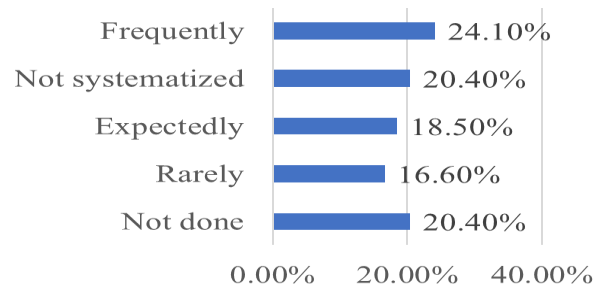


Figure 3

Proportion of MSEs that consult customer opinion

Source: Own Elaboration

The decision-making process in these businesses is carried out informally in most cases; less than 43% use supporting information frequently [see figure 4].

Box 4

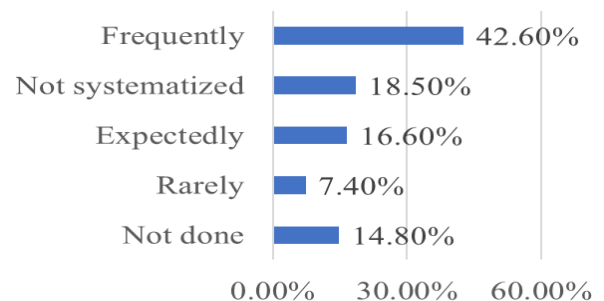


Figure 4

Frequency of use of company information for decision-making

Source: Own Elaboration

Approximately a quarter of businesses consciously apply some form of customer-related management model, as shown in Figure 5. 27.8% of MSEs have structured their marketing mix. Eighty-five percent of the subjects studied are unfamiliar with the most modern management models, techniques, and tools.

Box 5

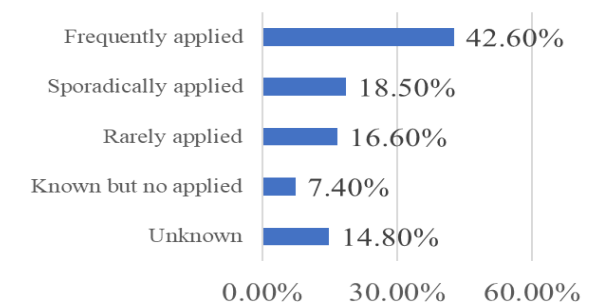


Figure 5

Frequency of application of the Marketing Mix in the MSEs management

Source: Own Elaboration

The low frequency of activities related to customer and market knowledge and research by companies may be due to the fact that they do not conceive of them as structured management systems, since almost 66% of businesses are concerned with the quality of the products or services they offer. Marketing-related activities are not recognized by entrepreneurs as key elements in generating good business results.

As shown in Figure 6, less than 13% of companies consider themselves to be in a successful situation, and the main causes to which they attribute the good results were: planning activities, controlling operations, organizing available resources and employee participation.

Box 6

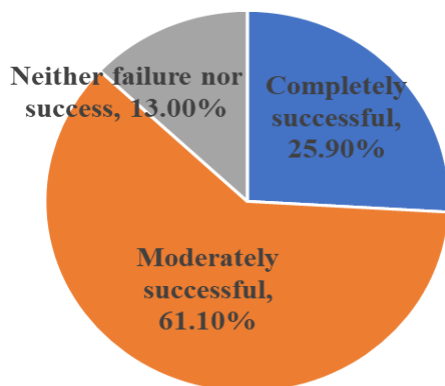


Figure 6

Frequency of use of company information for decision-making

Source: Own Elaboration

The above results show the total number of companies and their weighted behavior according to the different levels of frequency of use of management models. However, the group of companies that frequently use marketing mix activities shows a stronger relationship with a greater perception of business success by owners or entrepreneurs; similarly, 58% of MSEs that implement marketing strategies report positive sales growth.

Companies that use market analysis and customer insight have greater stability at the break-even point. In contrast, those that do not implement these tools have greater difficulty sustaining and adapting to the competitive environment.

Conclusions

Marketing and its activities are understood as a tool that helps companies focus their operational efforts to reach customers. Proper implementation improves business competitiveness, adaptability, and sustainability.

Barriers such as lack of knowledge and training should be addressed through training programs for entrepreneurs and local support networks that leverage existing actions and guide entrepreneurs to incorporate marketing as part of their daily operations.

The main finding of the study is that frequent use of marketing tools is directly related to improved results and sales growth.

Consequently, the following is recommended:

Promote the use of marketing and its various models and tools, such as the marketing mix, in a simplified manner adapted to the specific conditions and needs of MSEs.

Strengthen business training in sales management and digital marketing.

Include marketing models in incubation and government funding programs for MSEs.

Limitations

The study was conducted on MSEs, primarily in the tertiary sector, which provided financial information and management models based on information provided directly by the owners or entrepreneurs, without having official documents available. Recent market changes resulting from the readjustment of business practices following the end of the COVID-19 pandemic and the prevailing macroeconomic conditions due to the increased entry of Asian goods into Mexico in the last year can lay the groundwork for applying this study to companies in the primary and secondary sectors, with the aim of comparing the results obtained here.

The study included an analysis of different management models, which included marketing in general and identified the main administrative activities carried out by companies in isolation. Therefore, these results can be complemented with studies focused specifically on marketing tools.

Alcocer-Martínez, Fidel Ramón, Tejero-Canché, Jessica del Carmen and Ramírez-Alcocer, David Enrique. [2025]. Marketing as a strategic tool for micro and small businesses for business success. *Journal-Microeconomics*. 9[15]1-5: e4915105. <https://doi.org/10.35429/JM.2025.9.15.4.1.5>

Declarations**Conflict of interest**

The authors declare no conflicts of interest. They have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this article.

Author contribution

Alcocer-Martínez, Fidel Ramón: Contributed to the project idea, research method, data analysis and Conclusions.

Tejero-Canché, Jessica del Carmen: Contributed to the research method, technique and state of the art.

Ramírez-Alcocer, David Enrique: Contributed to the project idea, state of the art and data analysis.

Availability of data and materials

The spreadsheet files used for data collection and analysis are available upon request to the author.

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Abbreviations

COVID-19	2019 coronavirus disease
MSEs	Micro and Small-sized enterprises

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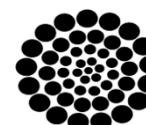
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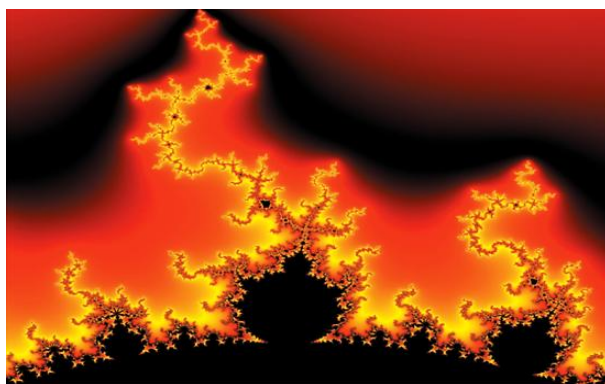


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Develop give the meaning of the variables in linear writing and important is the comparison of the used criteria.

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The results shall be by section of the article.

Conclusions

Clearly explain the results and possibilities of improvement.

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Tables and adequate sources.

The international standard is 7 pages minimum and 14 pages maximum.

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List abbreviations in alphabetical order.

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