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ABSTRACT

This paper addresses the impact of technological development and benchmarking on organizational change because both benchmarking and technological development significantly influence company management. This research aims to determine which factors linked to Technological development and Benchmarking impacted Organizational Change in commercial entities located in the Metropolitan Zone of Guadalajara (ZMG). A closed questionnaire was used as a study instrument, surveying the members of the businesses that underwent an organizational change. Those subjects who were consulted had to be part of the change procedure. The findings indicate that technological development and benchmarking contributed to the implementation of organizational taking advantage of demographic changes.

Keywords: Benchmarking, Technological Innovation, Organizational change.



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INTRODUCTION

The analysis of organizational change is paramount, as organizations must continually adapt and update themselves to remain competitive in dynamic markets (Mızrak, 2024). It is essential to understand markets' evolution and explore the underlying causes that determine whether changes are implemented effectively or not. This study seeks to identify the factors that influence organizational change, such as the uncertain environments that characterize the business environment, as well as the obstacles that must be overcome to achieve its implementation, such as the rejection of change that frequently occurs among personnel when an organization decides to carry out internal transformations. In this context, managers play a fundamental role in organizations, as they are responsible for defining the strategies to be followed (Alsharari, 2024). To do so, they must have a clear vision of the future and a precise understanding of the actions needed to achieve the proposed objectives.

The ability of organizations to innovate and renew themselves facilitates employees' adaptation to such changes, promotes a more agile response, and allows organizations to anticipate transformations (Thomas, 2024). Thus, the ability of companies to stay relevant through renewal processes has become a crucial factor in this constantly evolving business environment (Moşteanu, 2024). In this sense, benchmarking is a valuable tool, as it allows organizations to compare themselves with others that implement best practices to identify areas for improvement (Alsharari & Aljohani, 2024).

LITERATURE REVIEW

Change is a constant process in the life of organizations, especially in the commercial sector, where competition is increasingly fierce. Companies must adapt to these changes, using technological advances and tools that improve their decisions and practices. One key tool in this process is benchmarking, a comparative process that helps organizations improve by comparing their practices with those of leading companies. Benchmarking is crucial for organizational change (Tidd & Bessant, 2020; Márquez et al., 202).

Technological advances are one of the leading forces driving organizational change, as they provide new tools and approaches to improve management and adapt to a constantly changing environment. Researchers such as Avgerou (2001), Barrett et al. (2006), and Luca et al. (2021) have explored how technologies impact the structure and functioning of organizations.

The most successful companies are characterized by using methodological tools, such as benchmarking, which allows them to compare themselves with organizations that stand out for their management practices. Through this process, organizations implement consistent changes to improve their operational processes (Kouzmin et al., 1999; Mittelstaedt Jr., 1992). This approach allows companies to identify and adopt best practices that help them improve their competitiveness and operational efficiency.

Organizational change has been a central theme in research since the beginning of this century, especially in a context marked by globalization and trade openness. Market uncertainty has increased due to globalization, the world economy, and rapid technological advances (Siegel, 2016). The models proposed by Luca et al. (2021) highlight how companies need help to remain relevant in an environment of constant change.

Technological innovation is critical to organizational change (Tidd & Bessant, 2020). These innovations offer solutions to help companies face challenges and make successful changes (Roberts et al., 2021). However, implementing new technologies has been a major challenge, especially in countries where technology and innovation backwardness is a significant barrier (Márquez et al., 2022).

Technological advances affect not only operational processes but also organizational and cultural structures. Incorporating tools such as ICT has transformed how companies manage knowledge and information. This change directly affects organizational structure, corporate culture, and knowledge management processes (Čudanov et al., 2012).

According to Barrett et al. (2006), many technological interventions designed to bring about organizational change have had a significant impact, generating predictable and unexpected transformations. These changes are not always neutral; they can have direct or indirect effects on organizations, dynamically influencing different subsystems (Bertalanffy, 1973; Mingers, 2003; Amagoh, 2008).

Benchmarking is a valuable technique for organizations seeking to improve their processes. By comparing themselves with other companies that stand out for their good practices, organizations can learn from their experiences and improve their processes. Mittelstaedt Jr. (1992) highlights how benchmarking has been used successfully in research and development, purchasing, manufacturing, marketing, and sales. Companies can obtain valuable information to identify best practices and improve their procedures and processes through this process.

The proper use of benchmarking requires precise and well-defined criteria since the more precise these criteria are, the more effective the suggestions for improvement will be. Thus, benchmarking helps organizations to identify successful trends in their environment, allowing them to make informed decisions and improve their competitiveness.

In short, modern markets require companies to keep abreast of technological advances to adapt to change and remain competitive. The most successful organizations use methodological tools such as benchmarking, which allows them to compare their practices with those of leading companies and adopt the best strategies and procedures. Technological innovations and benchmarking are fundamental for successfully implementing organizational change and ensuring companies' survival in an increasingly complex and competitive business environment.

METHODOLOGICAL DESIGN

Three fundamental stages were carried out in the development of this research project; a review of the theoretical component was carried out, which involved an exhaustive survey of the theoretical framework related to the object of study. Subsequently, a bibliometric analysis focused on the relationship between the prevention of the future

and the adaptation. Finally, an empirical study was implemented, the objective of which was to collect data relevant to the research. For this purpose, a questionnaire composed of structured questions was designed to cover the possible response options to each of the issues raised. This questionnaire served as the main instrument for collecting information in the framework of this study.

The development of this research was carried out in two main phases, an exhaustive review of the relevant bibliography on the subject was carried out, which allowed us to establish the theoretical framework necessary for the analysis. Subsequently, we proceeded to the empirical phase, in which information was collected through a structured questionnaire to cover the various response options to each question posed in the study.

Unit of analysis

The unit of analysis consisted of micro, small, and medium-sized enterprises (MSMEs) with a range of between 1 and 250 employees located in the Guadalajara Metropolitan Area (AMG), which includes the municipalities of Guadalajara, San Pedro Tlaquepaque, Zapopan, and Tonalá and belongs to the commercial sector.

Sample

For this study, a non-probabilistic sample of 78 individuals was chosen. All of them were employed in businesses that had undergone organizational change. The participants were chosen based on their membership in the MSMEs of the commercial sector located in the AMG.

Operationalization of variables

The research variables were operationalized through a questionnaire based on the Likert Scale. The questions were formulated as statements reflecting the respondents' degree of agreement or disagreement regarding aspects of new technologies and benchmarking in the context of organizational change.

Problem statement

The main objective of this research is to explore how new technologies and benchmarking affect organizational change processes in commercial companies located in the Guadalajara Metropolitan Area. The study seeks to identify whether these elements are facilitators or obstacles in this process. The research questions formulated are as follows: What are the causes related to benchmarking and technological advances influenced organizational change in AMG's commercial companies? What consequences did benchmarking, and technological advances bring in these companies' organizational change processes?

Research objectives

The objectives established for this research were the following:

To determine which factors linked to Technological development and Benchmarking impacted Organizational Change in commercial entities located in the Metropolitan Zone of Guadalajara (ZMG).

To analyze the scope of benchmarking and technological advances in the organizational change processes of commercial companies located in the AMG.

Hypothesis

The following hypotheses were formulated to guide the data analysis:

H1: *Benchmarking favors the successful implementation of organizational change in commercial companies in the ZMG.*

H2: *Technological development contributes positively to organizational change in the commercial enterprises of the ZMG.*

The data collection process was based on the theoretical framework established at the beginning of the study, using a structured survey with Likert scale as the primary research tool. In order to evaluate the consistency and reliability of the instrument, Cronbach's alpha was calculated. In addition, the sample adequacy index (KMO) and Bartlett's test of sphericity were calculated, which allowed confirmation that the variables are adequately correlated to perform a factor analysis.

For the empirical analysis, analysis of variance (ANOVA) was used to determine the significance of the relationships between the variables (new technologies, benchmarking, and organizational change) and identify the factors that can positively or negatively influence this process.

The survey was designed considering the bibliographic sources consulted to identify the factors that participate in or influence organizational change processes. After obtaining the data, it was analyzed to get relevant conclusions for the analyses.

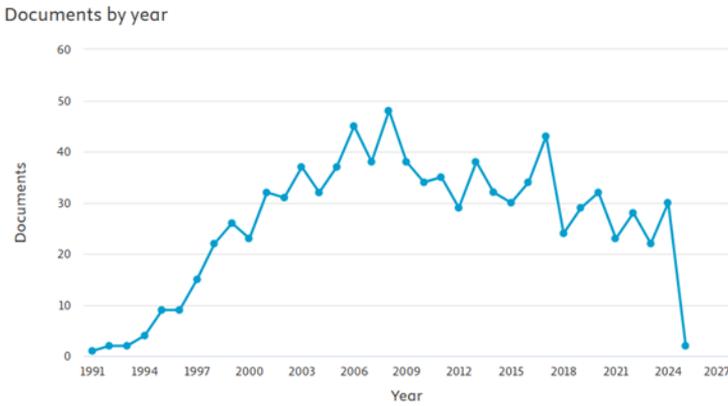
The Scopus database, with a query date of December 10, 2024, contains a total of 916 scientific papers related to the topics of Benchmarking and Organizational Change, of which 626 are articles, 133 are conference papers, 111 are reviews, 19 are book chapters, eight are conference reviews, six are books, six are short surveys, four are notes, one is an editorial, one is a data and 1 is a letter. These papers include the relevant terms in their titles, abstracts, or as keywords.

BIBLIOMETRIC ANALYSIS

The bibliometric analysis of these documents revealed several essential patterns in the scientific production around Benchmarking and Organizational Change. The results obtained from the data available in Scopus are presented below.

Figure 1 shows the evolution of scientific production on Benchmarking and Organizational Change in the Scopus database. The information reveals a significant increase in publications since the beginning of the 21st century, reaching its peak in 2008.

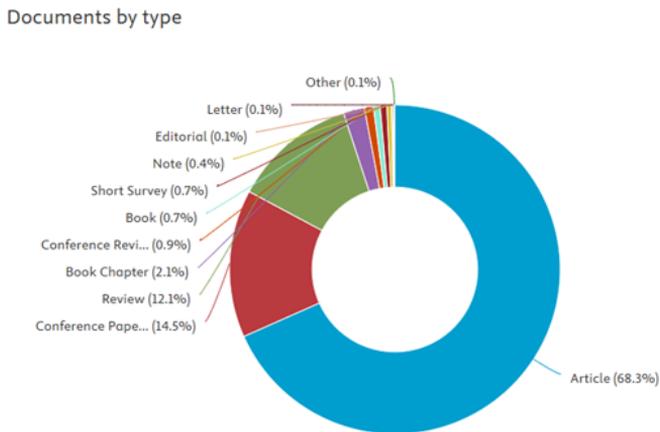
Figure 1. Scientific Production on Benchmarking and Organizational Change in Scopus.



Source: Own elaboration based on Scopus statistics.

Figure 2 shows the distribution of documents by type, which reflects the diversity in the formats of the works analyzed, from journal articles to conferences and books.

Figure 2. Publications by type of document.

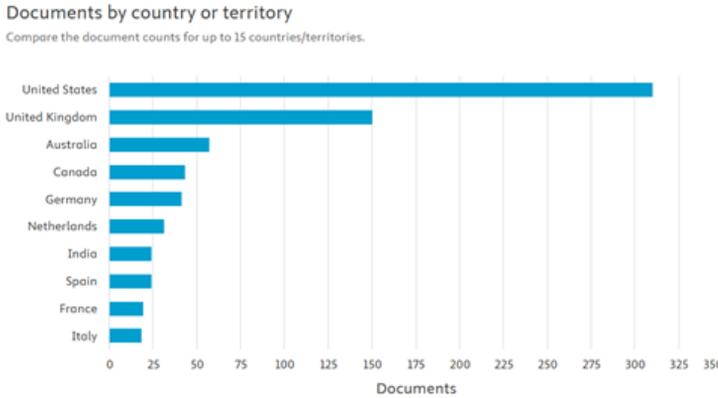


Source: Own elaboration with the results obtained from Scopus.

The Scopus database allows downloading bibliographic records in various formats, facilitating their analysis on multiple platforms. This study used the VOSviewer program to visualize the co-occurrence networks of terms extracted from the bibliographic records. This software, developed by Van Eck and Waltman (2010), generated visual maps of the information contained in the documents.

Regarding the geographical distribution of the scientific production on Benchmarking and Organizational Change, the results reveal that the leading countries that have contributed significantly to research in this field are the United States, United Kingdom, Australia, Canada, Germany, the Netherlands, India, Spain, France, and Italy. Figure 3 illustrates a visualization map of the countries that have produced the most papers on this topic.

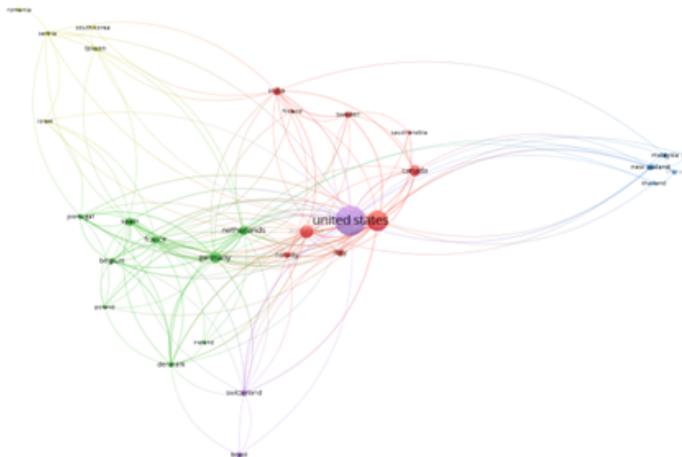
Figure 3. Map of Documents by country.



Source: Own elaboration with the results obtained from Scopus.

The countries are grouped into different clusters according to the work they have generated in this field. Cluster 1 comprises Australia, Canada, Finland, India, Italy, Norway, Saudi Arabia, Sweden and the United Kingdom. Cluster 2 includes Belgium, Denmark, France, Germany, Ireland, the Netherlands, Poland, Portugal, and Spain. Cluster 3 groups China, Iran, Malaysia, New Zealand, and Thailand; Cluster 4 includes Israel, Romania, Serbia, South Korea, and Taiwan; and Cluster 5 includes Brazil, Switzerland, and the United States.

Figure 4. Network visualization map by countries.



Source: Own elaboration with the results obtained from the Vos Viewer.

The most cited article is "Firm Characteristics, Total Quality Management, and Financial Performance" by Hendricks, K.B. and Singhal, V.R., published in 2001 in the Journal of Operations Management, with 400 citations. This study uses a sample of quality award-winning firms to empirically test hypotheses about changes in operating income resulting from effective implementation of Total Quality (TQM), analyzing characteristics such as firm size, capital intensity, diversification, the timing of TQM implementation, and program maturity. The results indicate that smaller firms achieve significantly more significant improvements than larger firms (Figure 4).

The second most cited article is "Benchmarking the Learning Capability of Organizations" by Goh, S. and Richards, G., with 364 citations, published in 1997 in the European Management Journal. In this paper, the authors argue that the implementation of organizational learning needs to be improved by a systematic approach to measuring learning capability. They propose a model that, by identifying and measuring key organizational characteristics, could generate a benchmark of learning capability, thus facilitating the design of interventions to overcome barriers in creating a learning organization.

The third most cited article is "Application of Statistical Process Control in Healthcare Improvement: Systematic Review," published in 2007 in Quality and Safety in Health Care by Thor et al. (2007), with 305 citations. This article discusses how statistical process control has been used to manage change and improve healthcare processes. (Table 1).

Table 1. Most cited articles on Benchmarking and organizational change in Scopus.

Autor	Título del artículo	Año	Nº de citas
Hendricks, K.B. & Singhal, V.R.	Firm characteristics, total quality management, and financial performance	2001	400
Goh, S. & Richards, G.	Benchmarking the learning capability of organizations	1997	364
Thor, J., Lundberg, J., Jakob, A., Olsson, J., Carli, C., Härenstam, K. P. & Brommels, M.	Application of statistical process control in healthcare improvement: Systematic review	2007	305

Source: Own elaboration based on Scopus statistics.

This study has allowed a comprehensive analysis of the relationship between Benchmarking and Organizational Change, using bibliometric tools to examine the scientific production on the subject. Using the Scopus database and the VOSviewer software, the publication trends, the geographical distribution of the countries that contribute most to this field of study, and the most influential articles have been visualized according to their number of citations. Benchmarking and Organizational Change are areas of growing interest, especially in quality management and organizational process improvement.

On the other hand, the analysis of the most cited articles has revealed that the most relevant research is focused on the relationship between organizational characteristics, quality management, organizational learning, and statistical process control, which is crucial for continuous improvement in various industries, including the health sector.

RESULTS AND ANALYSIS

This study analyzed benchmarking and new technologies and their impact on organizational change. For this purpose, a questionnaire was used to determine the relationship between these factors. The interviews were conducted with personnel from companies undergoing organizational change, ensuring the participants were involved. This instrument was used to analyze the hypotheses proposed.

Table 2. Cronbach's Alpha of New Technology variables.

Cronbach's Alpha	Number
.723	14

Source: Own elaboration according to SPSS results.

Reliability and validity of the instrument

First, Cronbach's alpha, Bartlett's test, and the KMO sample adequacy measure were calculated. The results obtained for Cronbach's Alpha for the new technologies variables were 0.723, indicating a high consistency in the instrument used (Table 2). In addition, Bartlett's Test and KMO confirmed that the data were adequate for performing a factor analysis. The KMO value was 0.610, which is considered an adequate value to proceed with multivariate analysis (Table 3).

Table 3. KMO and BARTLETT'S TEST- New Technologies and Organizational Change.

KMO		.610
Bartlett Test	Approximate chi-square	377.763
	Gl	91
	Sig.	.000

Source: Own elaboration according to SPSS results.

The lowest significance (p-value) (closest to 0) indicates that factor analysis can proceed. In this case, the p-value is 0.000, indicating that factor analysis can proceed since the variables are significantly correlated.

p< 0.05: H0 is rejected, meaning the data are suitable for factor analysis.

$p > 0.05$: H_0 is accepted, suggesting inappropriate factor analysis. In summary, the results of Bartlett's test with a p-value close to 0 (in this case, 0.000) indicate that the variables are suitable for factor analysis since their correlations are significant.

Commonalities and significant factors

Table 4. Commonalities.

	Group 1	Group 2	Group 3
Benchmarking intensity	0.895		
Frequency of Technological Delay	0.891		
Benchmarking frequency	0.880		
Information and communications technologies were definitive for the change to be made	0.876		
Intensity of Technological Delay	0.876		
New technologies were essential to make the change		0.744	
The implementation of the culture change resulted in a reduction in the number of employees		0.722	
Frequency of the globalization process		0.705	
The results of organizational change are calculated			0.680
The e-business was decisive in carrying out the organizational change			0.671
Intensity of the globalization process			0.645
There is a record of the information and the study of the change process			0.639
The company is increasingly aware of its knowledge base			0.636

Source: Own elaboration according to SPSS results.

The analysis of the commonalities (Table 4) showed that the most significant variables for organizational change were benchmarking intensity, frequency of technological backwardness, and frequency of benchmarking. These variables are closely linked to organizational change. In addition, information and communication technologies and e-business were also essential in the implementation of change. It was observed that, in general, new technologies, together with benchmarking, played a crucial role in the success of organizational change.

Hypothesis 1: *Benchmarking favors the successful implementation of organizational change in commercial companies in the ZMG.*

Table 5. Benchmarking and its relationship with Organizational Change. ANOVA.

		Sum of squares	gl	mean square	F	Sig.
THE GLOBALIZATION PROCESS	Between groups	13.688	3	4.563	6.049	.001
	Within the groups	43.748	58	.754		
	Total	57.435	61			
TRADE OPENING IN THE WORLD	Total	14.821	3	4.940	5.175	.003
	Between groups	55.373	58	.955		
	Within the groups	70.194	61			
DEMOGRAPHIC CHANGES	Total	14.061	3	4.687	5.069	.003
	Between groups	53.652	58	.925		
	Within the groups	67.694	61			
CONSUMER EXPECTATIONS	Total	31.845	3	10.615	21.705	.000
	Between groups	28.365	58	.489		
	Within the groups	60.210	61			
THE COMPETITORS	Total	10.527	3	3.509	4.944	.004
	Between groups	41.166	58	.710		
	Within the groups	51.694	61			

Source: Own elaboration according to SPSS results.

The relationship between benchmarking and organizational change was analyzed through an ANOVA (Table 5), and benchmarking was significantly related to factors such as trade openness, demographic changes, consumer expectations, the globalization process, and competition. These results suggest that benchmarking facilitates organizational change by allowing companies to adapt to the best practices and trends in the global market.

Hypothesis 2: *The development contributes positively to organizational change in the commercial enterprises of the ZMG.*

Table 6. Relationship of New Technologies with a Process of Organizational Change.

		ANOVA				
		Sum of squares	gl	mean square	F	Sig.
Information and communications technologies were definitive for the change to be made	Between groups	42.637	3	14.212	44.001	.000
	Within the groups	18.734	58	.323		
	Total	61.371	61			
The e-business was decisive in carrying out the organizational change	Between groups	21.181	3	7.060	10.458	.000
	Within the groups	39.158	58	.675		
	Total	60.339	61			
There is a record of the information and the study of the change process	Between groups	11.107	3	3.702	8.425	.000
	Within the groups	25.489	58	.439		
	Total	36.597	61			
Positive attitude of management	Between groups	6.199	3	2.066	5.201	.003
	Within the groups	23.043	58	.397		
	Total	29.242	61			

Source: Own elaboration according to SPSS results.

Regarding new technologies, the analysis showed that variables such as e-business, information and communication technologies, and the recording of change process information are determinants for organizational change (Table 6). Technological advances allow companies to adapt quickly to a constantly changing business environment, facilitating organizational change implementation. The positive attitude of management also proved to be an essential factor in this process.

DISCUSSIONS

Communalities lead to several theoretical contributions (Table 4). The intensity (0.895) and frequency (0.880) of benchmarking suggest that it is a key factor in organizational adaptation. Theoretically, this validates the literature that considers benchmarking a strategic process for continuous improvement and adopting good practices. The frequency (0.891) and intensity (0.876) of technological lag reinforce the idea that organizations must reduce technological gaps. Theoretically, this highlights the need to remain competitive through technological innovation and updating. Information and communication technologies (0.876) and new technologies (0.744) are essential to implement changes. This finding supports theories that link digital transformation with organizational adaptation capacity. The globalization process's frequency (0.705) and intensity (0.645) highlight its role in business restructuring. It reinforces theories describing globalization as a strategic and operational change driver. Concepts such as employee reduction (0.722) and new skill development (0.533) suggest dual effects (positive and negative) on human capital. It coincides with theories about organizational change that mention impacts on work culture.

The ANOVA analysis in Table 5 showed the different factors significantly influencing organizations. There are statistically significant differences between the groups regarding the impact of globalization ($F = 6.049$ and $\text{Sig.} = 0.001$). Theoretically, this confirms that the globalization process unequally influences organizations, supporting studies highlighting the need to adapt to global contexts.

There is a significant effect between the groups about commercial openness ($F = 5.175$ and $\text{Sig.} = 0.003$). The idea is reinforced by the theory that openness to international trade drives structural and operational changes in organizations.

Demographic changes have a statistically significant effect ($F = 5.069$ and $\text{Sig.} = 0.003$). This supports theories that maintain that population and social dynamics affect the demand for products and services and the composition of the workforce.

Another theoretical contribution concerns the influence of consumer expectations on innovation and organizational adaptation, which is a key factor in strategic decision-making ($F = 21.705$ and $\text{Sig.} = 0.000$).

It is confirmed that the competition has significant differences between the groups ($F = 4.944$ and $\text{Sig.} = 0.004$). Theoretically, it supports studies on how competitive pressure

forces organizations to innovate and improve their performance.

In relation to Table 6, the theoretical contributions are the following: Theories of digital transformation are reaffirmed that position ICT as facilitators of innovation, automation, and improvement in decision making ($F = 44.001$ and $\text{Sig.} = 0.000$). The theory supports the literature highlighting how e-business facilitates organizational efficiency and adaptation to digital environments ($F = 10.458$ and $\text{Sig.} = 0.000$).

Documenting change processes has a relevant impact between groups ($F = 8.425$ and $\text{Sig.} = 0.000$). Theoretically, this reinforces the importance of knowledge management as a fundamental tool for evaluating, improving, and replicating successful change processes. Top management attitude significantly affects ($F = 5.201$ and $\text{Sig.} = 0.003$). Theoretically, this coincides with studies that highlight the role of positive leadership in implementing and sustaining organizational change.

CONCLUSIONS

The results obtained validate both hypotheses of the research. Benchmarking favors the successful implementation of organizational change in commercial companies in the ZMG since it allows companies to compare themselves with the best in their sector and adopt advanced practices. Likewise, technological development, such as information technologies and e-business, is essential for the modernization and adaptation of organizations to the demands of the globalized market.

Organizational change, driven by benchmarking and new technologies, enables companies to improve their competitiveness and provides them with the tools to respond effectively to market demands and challenges from globalization and technological innovation. The study confirms that benchmarking and technological development are key factors in successful organizational change.

Global markets are in constant transformation. Rapid technological evolution has given rise to a supply of new options that allow consumers to satisfy their needs and desires in more diverse ways than ever before. This expansion of options has increased consumers' demands, who are now more selective when purchasing products or services. As a result, companies have been driven to improve their processes to meet these demands more efficiently, surpassing the competition in time and quality.

From the findings obtained in this research, it was possible to validate the proposed objectives, which consisted of 1) Determining which factors linked to Technological development and Benchmarking had an impact on Organizational Change in commercial entities located in the Metropolitan Zone of the city of Guadalajara (ZMG), and 2) Analyzing the scope of these factors in the process of organizational change within the same geographical context.

The study analyzed the impact of benchmarking and technological advances on organizational change processes, and the results indicated a significant relationship between information and communication technologies (ICT), e-business, information management, and the organizational change process. These factors and management's positive attitude during change are essential for the transformation's success. In this regard, companies need to deeply understand their consumers' preferences, enabling

them to anticipate trends and facilitate the successful implementation of organizational change.

In addition, a significant relationship was identified between benchmarking and several key factors, such as demographic changes, the globalization process, consumer expectations, trade openness, and competition. These findings indicate that benchmarking is key to achieving effective organizational change.

Based on this, it is accepted that the two hypotheses formulated in this study are valid:

H1: *Benchmarking favors the successful implementation of organizational change in commercial companies in the ZMG.*

H2: *Technological development contributes positively to organizational change in the commercial enterprises of the ZMG.*

Consequently, it is concluded that it is essential to record information and study the organizational change process since the appropriate use of new technologies contributes to the organization's development.

The practical implications derived from the work are that Organizations face scenarios that require intensifying benchmarking to adopt best practices and close competitive gaps. It is crucial to implement strategies that combat technological backwardness by updating infrastructure and training. This requires that ICT be a central pillar in organizational transformation plans, facilitating innovation and process improvement. Reducing employees and developing new skills require talent management strategies, avoiding negative impacts on workplace morale.

Organizations need to understand changes in population dynamics, adjust their product and service offerings, and promote a diverse workforce adapted to new realities. It leads to constantly monitoring customer expectations, adapting products and services, improving the consumer experience, and driving innovation to meet market demands.

When integrated into transformation strategies, e-business allows for process automation, expansion into new markets, and improvement in operational efficiency. It is essential to keep a detailed record of the information and processes related to organizational change. This allows you to evaluate results, identify areas for improvement, and replicate successful practices in the future.

A positive management attitude is essential to inspiring confidence, motivating staff, and ensuring the success of change processes. Leadership skills must be developed at management levels to implement organizational transformations effectively.

Despite the results obtained, this study has some limitations that should be considered for future research. The information collected is based exclusively on the responses of the interviewees who participated in the organizational change processes of the companies analyzed. In addition, because non-probabilistic sampling was used, the results are

not representative of the entire population, which limits their generalizability. Similar research should be carried out in other productive sectors and SMEs located in different geographic regions to broaden the scope of the findings.

In future research, it would be helpful to explore further the implications of new technologies and benchmarking in accelerating organizational change processes and how different benchmarking approaches and methodologies can be integrated into strategic decision-making processes at a global level.

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Business Financial Intelligence in Mexican Microenterprises: A Comprehensive Analysis of Competencies, Attitudes, and Resilience for Latin American Sustainability and Competitive Development

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ABSTRACT

The purpose of this research is to evaluate the financial culture of micro, small and medium-sized enterprises (MIPYMES) in San Andrés Cholula, Mexico, through the perception of businessmen, owners or staff who make decisions in these companies. To achieve this, a quantitative methodology was used through a questionnaire that includes ten dimensions to measure the financial literacy variable. The data obtained were processed using Cronbach's alpha coefficient and descriptive statistical analysis. The results of the study indicate that the dimensions of self-efficacy and subjective financial knowledge,



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financial attitude and behaviors for financial management are the most prominent aspects in the financial culture of MSMEs in San Andrés Cholula. However, the dimensions of loss forecasting, money valuation or materialism, risk perception and compulsive buying were identified as weaknesses. Generally, the results of this study are consistent with the findings of previous research at a general level.

Keywords: Financial Culture, Mypes, Descriptive Analysis.

INTRODUCCIÓN

La cultura financiera es un conjunto de habilidades y conocimientos que permiten a los individuos y empresas tomar decisiones informadas sobre su economía. En el caso de las micro, pequeñas y medianas empresas (MYPES), la cultura financiera es esencial para su supervivencia y éxito. En México y América Latina, la falta de cultura financiera en las MYPES es un problema que limita su crecimiento y desarrollo económico. En este marco teórico se explorará la cultura financiera de las MYPES en México y América Latina, así como los factores que influyen en su desarrollo.

En México y América Latina, la cultura financiera en las MYPES es baja. Según el Banco Interamericano de Desarrollo (BID), solo el 23% de las MYPES en América Latina tiene acceso a crédito formal, y solo el 16% tiene una cuenta bancaria (BID, 2019). Esta falta de acceso a servicios financieros se debe en parte a la falta de cultura financiera en las MYPES. Las MYPES suelen tener una comprensión limitada de los conceptos financieros básicos, como la contabilidad, el flujo de efectivo y los estados financieros. Esto dificulta la toma de decisiones financieras informadas y puede llevar a una mala gestión financiera. En este sentido se debe mencionar que varios factores influyen en la cultura financiera de las MYPES en México y América Latina. A continuación, se presentan algunas dimensiones importantes de la cultura financiera en las MYPES:

Inclusión financiera:

La inclusión financiera es un factor clave para el desarrollo de las MYPES, ya que les permite acceder a una amplia gama de productos y servicios financieros que pueden ayudarles a mejorar su desempeño y crecimiento. Según la Comisión Nacional para la Protección y Defensa de los Usuarios de Servicios Financieros (CONDUSEF), la inclusión financiera en las MYPES es fundamental para mejorar su competitividad y productividad (CONDUSEF, 2019).

Autoeficacia y conocimiento subjetivo financiero:

La autoeficacia y el conocimiento subjetivo financiero son dimensiones importantes para entender la capacidad de los dueños de MYPES para tomar decisiones financieras adecuadas. La autoeficacia financiera se refiere a la creencia en la capacidad de uno para tomar decisiones financieras acertadas, mientras que el conocimiento subjetivo financiero se refiere a la percepción de uno mismo sobre su nivel de conocimiento financiero (Lusardi y Mitchell, 2014). Según un estudio realizado por Pérez et al. (2019), la autoeficacia financiera y el conocimiento subjetivo financiero se relacionan positivamente con el desempeño financiero de las MYPES.

Comportamientos para la gestión financiera:

Los comportamientos para la gestión financiera en las MYPES incluyen el ahorro, la

planificación financiera y el control del gasto. Según un estudio realizado por Manzano et al. (2018), los comportamientos financieros positivos están relacionados con un mejor desempeño financiero en las MYPES.

Previsión de siniestros:

La previsión de siniestros se refiere a la capacidad de las MYPES para hacer frente a los imprevistos financieros, como una disminución de las ventas o una emergencia operativa. Según un estudio realizado por Cueva et al. (2019), la previsión de siniestros se relaciona positivamente con el desempeño financiero de las MYPES.

Actitud financiera:

La actitud financiera se refiere a las creencias y valores que los dueños de MYPES tienen acerca del dinero y la gestión financiera. Una actitud financiera positiva puede ayudarles a tomar decisiones financieras adecuadas y mejorar su bienestar financiero. Según un estudio realizado por Bustamante y Cortés (2020), una actitud positiva hacia la gestión financiera se relaciona positivamente con el desempeño financiero de las MYPES.

Actitudes hacia la compra y compra compulsiva:

Las actitudes hacia la compra y la compra compulsiva son dimensiones importantes para entender los patrones de consumo de los dueños de MYPES. La compra compulsiva se define como un comportamiento de compra excesivo e impulsivo (Valence et al., 2016). La compra compulsiva puede ser perjudicial para la salud

MARCO TEÓRICO

La cultura financiera es un factor crítico para el éxito de las MYPES en México y América Latina. La falta de cultura financiera en las MYPES puede limitar su capacidad para acceder a servicios financieros, gestionar eficientemente sus finanzas y crecer como negocio. La educación, el acceso a servicios financieros, el ambiente empresarial, la tecnología, la cultura empresarial, el asesoramiento financiero y la capacitación en finanzas son factores clave que influyen en la cultura financiera de las MYPES. Para mejorar la cultura financiera de las MYPES en México y América Latina, es necesario abordar estos factores y proporcionar a las MYPES los recursos y el conocimiento necesarios para tomar decisiones financieras informadas.

La cultura financiera es un tema importante para las micro, pequeñas y medianas empresas (MYPES) en México y América Latina, ya que su falta de conocimientos financieros puede limitar su capacidad para tomar decisiones informadas y gestionar adecuadamente sus finanzas. En la última década, ha habido un interés creciente en el desarrollo de la cultura financiera en las MYPES, lo que ha llevado a investigaciones y estudios en el tema.

Un estudio realizado en México en 2014, por ejemplo, examinó la relación entre la cultura financiera y el acceso a servicios financieros en las MYPES. El estudio encontró que la cultura financiera era un factor importante en la capacidad de las MYPES para acceder a servicios financieros y que las empresas con una cultura financiera más sólida tenían más probabilidades de obtener financiamiento (García et al., 2014).

Otro estudio realizado en América Latina en 2019 analizó el impacto de la educación financiera en las MYPES. El estudio encontró que la educación financiera podía mejorar la gestión financiera de las MYPES y su capacidad para acceder a servicios financieros (BID, 2019).

Además, ha habido un interés creciente en el papel de la tecnología en el desarrollo de la cultura financiera en las MYPES. Un estudio realizado en México en 2017, por ejemplo, examinó el uso de aplicaciones móviles para mejorar la gestión financiera de las MYPES. El estudio encontró que el uso de aplicaciones móviles podía mejorar la gestión financiera de las MYPES y su capacidad para tomar decisiones informadas (Maldonado et al., 2017).

En cuanto a los factores que influyen en la cultura financiera en las MYPES de México y América Latina, varios estudios han señalado la importancia de la educación financiera. Un estudio realizado en México en 2015, por ejemplo, encontró que la educación financiera era un factor importante en el desarrollo de la cultura financiera en las MYPES (Ochoa et al., 2015).

Además, varios estudios han señalado la importancia del acceso a servicios financieros en el desarrollo de la cultura financiera en las MYPES. Un estudio realizado en Argentina en 2018, por ejemplo, encontró que el acceso a servicios financieros era un factor importante en el desarrollo de la cultura financiera en las MYPES (Fernández et al., 2018).

En cuanto a la importancia de la cultura financiera en las MYPES de México y América Latina, varios estudios han señalado su impacto en el crecimiento económico de las empresas. Un estudio realizado en Colombia en 2017, por ejemplo, encontró que la cultura financiera era un factor importante en el crecimiento económico de las MYPES (Arenas et al., 2017).

En resumen, la cultura financiera en las MYPES de México y América Latina es un tema importante que ha generado interés en la última década. La educación financiera y el acceso a servicios financieros son factores importantes en su desarrollo, y su importancia radica en su impacto en el crecimiento económico de las empresas.

El presente estudio tuvo como objetivo analizar el nivel de conocimiento financiero y la capacidad de gestión financiera de los microempresarios del municipio de San Andrés Cholula, en el estado de Puebla, México. Para ello, se llevó a cabo una investigación que incluyó la recopilación de datos primarios y secundarios, el análisis de la información recopilada y la identificación de las principales fortalezas y debilidades financieras de los empresarios en cuestión.

MARCO CONTEXTUAL

San Andrés Cholula es un municipio ubicado en el estado de Puebla, en el centro de México, con una población de alrededor de 149,066 habitantes en el año 2020, según datos del INEGI (Instituto Nacional de Estadística y Geografía) [INEGI, 2019]. El municipio se caracteriza por tener una economía diversa, en la que destacan el comercio, la industria y el turismo, lo que ha permitido que la localidad cuente con una amplia oferta de empresas de diferentes tamaños y sectores, incluyendo manufactura, servicios, construcción, entre otros [INEGI, 2020].

En cuanto al nivel educativo de la población, San Andrés Cholula cuenta con una oferta educativa completa, desde primaria hasta educación superior. De acuerdo con el Censo de Población y Vivienda 2020 del INEGI, el 30.6% de la población de San Andrés Cholula tiene educación media superior (preparatoria), mientras que el 14.8% cuenta con educación superior (licenciatura o posgrado) [INEGI, 2020].

Según datos de la Secretaría de Economía del gobierno de México, San Andrés Cholula cuenta con una cantidad significativa de empresas establecidas en diferentes sectores. En específico, se puede identificar que el sector servicios y comercio son los que predominan, aunque también existen empresas dedicadas a la manufactura y construcción [INEGI, 2020]. En cuanto al tamaño de las empresas, la mayoría son microempresas, lo que indica que hay un importante número de emprendimientos y negocios pequeños que generan empleo y mueven la economía local.

En resumen, San Andrés Cholula es un municipio con una población diversa, una economía activa y variada, y una buena oferta educativa en distintos niveles. Además, cuenta con una importante cantidad de empresas establecidas, principalmente en el sector servicios y comercio, y en su mayoría son microempresas.

En cuanto al número de empresas establecidas en San Andrés Cholula, según la Secretaría de Economía del gobierno de México, se pueden destacar los siguientes datos por sector y por tamaño de empresa [SEDECO, 2019; INEGI, 2019]:

Sector manufacturero: 329 empresas
Sector servicios: 1,022 empresas
Sector construcción: 444 empresas
Sector comercio: 1,684 empresas

En cuanto al tamaño de las empresas, según el Censo Económico 2019 del INEGI, se pueden distinguir los siguientes datos [INEGI, 2019]:

Microempresas (menos de 10 empleados): 4,303 empresas
Pequeñas empresas (entre 10 y 50 empleados): 827 empresas
Medianas empresas (entre 51 y 250 empleados): 77 empresas
Grandes empresas (más de 250 empleados): 6 empresas

Por otra parte, es necesario mencionar que para la medición de la cultura financiera se tomaron en consideración las siguientes dimensiones.

Dimensiones de la cultura financiera y su medición

En el contexto de esta investigación, se conceptualiza la cultura financiera como una entidad compuesta por una variedad de herramientas formales e informales, normas, costumbres, hábitos, conocimientos, actitudes, valores e incluso sentimientos que las personas emplean en la adquisición y aplicación de instrumentos financieros. Con el propósito de establecer un marco de análisis, se proponen las siguientes dimensiones.

La inclusión financiera (IF)

Se define como el acceso y uso efectivo de servicios financieros por parte de individuos y empresas, con el fin de satisfacer sus necesidades financieras y lograr sus metas económicas. Esta accesibilidad implica no sólo la existencia de instituciones formales, sino también su cercanía geográfica, la disponibilidad de información sobre los servicios financieros y la capacidad de los usuarios para utilizarlos de manera efectiva (Demirgüç-Kunt & Klapper, 2012); los ítems de esta dimensión están incluidas en el cuestionario desde el 34a hasta la 34f.

La capacitación financiera se divide en tres niveles: el ***nivel básico (CFB)*** se enfoca en la comprensión y aplicación de conceptos financieros fundamentales, como los porcentajes y el interés simple. El ***nivel intermedio (CFI)*** se centra en la comprensión de conceptos más complejos como la diversificación de inversiones y la gestión de riesgos financieros. Finalmente, en el ***nivel avanzado (CFA)***, se espera que el individuo tenga conocimientos avanzados en la gestión de riesgos financieros y en la evaluación de inversiones complejas. Cabe destacar que, en el cuestionario de investigación, se identifican las tres dimensiones en las preguntas 35a a 37c, en el orden en que se mencionan.

Los ***comportamientos financieros para la gestión de las finanzas (CGF)*** engloban cuestiones prácticas como el control del gasto, la comparación de precios, la elaboración y seguimiento de presupuestos, la realización de pagos programados, el análisis de la situación financiera personal, la gestión de reservas financieras, el establecimiento de hábitos de ahorro para lograr metas económicas a medio y largo plazo, y la adquisición de seguros de propiedad, retiro y vida. En el instrumento de investigación, se hace referencia a esta dimensión en las preguntas 38a a 38e, en el mismo orden en que se presentan.

Las ***actitudes hacia la compra (AC)*** se refieren a la disposición o postura que se tiene ante la realización de transacciones comerciales en línea, transferencias electrónicas, la percepción de sus beneficios y la confianza en los medios electrónicos. Estas actitudes son importantes de conocer ya que pueden afectar el comportamiento de compra de los consumidores; los ítems de esta dimensión están incluidos en el cuestionario desde el 39a hasta la 39e.

La ***percepción de la compra compulsiva (CC)***, que se refiere a la tendencia a gastar dinero en compras no planeadas, impulsivas, a menudo excediendo la capacidad de pago de manera consciente o inconsciente. Es importante destacar que, en el cuestionario de investigación, la dimensión está incluida en los ítems 40a a 40c.

La ***propensión al endeudamiento (PE)*** se refiere a la inclinación hacia la adquisición de deudas y al pago inmediato de las compras, incluyendo el uso de tarjetas de crédito, la contratación de préstamos y créditos, que en su percepción contribuyen a mejorar su calidad de vida. En el instrumento de investigación, se hace referencia a esta dimensión en las preguntas 41a hasta la 41g, en el mismo orden en que se presentan.

La ***percepción de riesgo (PR)*** se refiere a la evaluación de los gastos en juegos de azar, la preferencia por opciones de inversión con altos niveles de ganancias y riesgos, la disposición a ser aval o garante de terceros o a prestar dinero sin garantías. Es importante destacar que, en el cuestionario de investigación, la dimensión se identifica en las preguntas 42a a 42d.

La percepción del dinero como un recurso motivador y generador de felicidad, calidad de vida, autoridad y valoración social se conoce como **valoración del dinero o materialismo (VM)**. Esta percepción puede estar influenciada por el poder adquisitivo y la posesión de bienes muebles e inmuebles (Richins, 2004; Sirgy et al., 1998; Zhu et al., 2018). En el estudio, se evaluó la dimensión de la VM mediante un cuestionario que incluye las preguntas 43a hasta la 43g, presentadas en el mismo orden.

Por otro lado, la utilización del financiamiento externo en las MYPEs o PYMEs, conocida como uso del **crédito financiero o préstamo (CFP)**, es crucial para mejorar el desempeño y satisfacer las necesidades de capital de trabajo e inversión. Es esencial que las empresas utilicen de manera efectiva los recursos financieros obtenidos para aprovechar las oportunidades de inversión y mejorar su rentabilidad (FMI, 2020). En el instrumento de investigación, se hace referencia a esta dimensión en las preguntas 44a hasta la 44c, en el mismo orden en que se presentan.

METODOLOGÍA

En este estudio, se empleó parte del instrumento diseñado por “Red Latinoamericana de Administración y Negocios” (RELAyN, 2021), el cual, consta de 57 ítems correspondientes a la cultura financiera con 11 dimensiones (ver anexo 1), en este sentido, es importante señalar que todos los ítems se consideraron en escala tipo Likert de 4 puntos; además se complementó con preguntas demográficas que incluyó variables como el género, la edad, el nivel máximo de estudios, los años de experiencia como dueño del negocio y el estado civil.

En el estudio, se realizaron análisis estadísticos para evaluar las variables de tendencia central y dispersión, que incluyeron la media, la desviación estándar, el error típico y la curtosis. Se utilizó un ANOVA de una sola vía con un nivel de confianza del 95% para determinar si existían diferencias significativas entre los grupos. Para comparar las medias, se empleó una prueba de Fisher (Greenland, et al., 2016) con un nivel de confianza del 95% ($\alpha=0.05$). Además, se llevó a cabo una prueba de comparación múltiple de medias de Fisher con la misma confiabilidad que la prueba anterior. Para el análisis estadístico se utilizó el software MINITAB ver. 21.

Es necesario destacar que, con el propósito de evaluar la confiabilidad del instrumento de medición, se realizó el cálculo del coeficiente alfa de Cronbach utilizando el software estadístico Minitab versión 18.1. De acuerdo con la literatura especializada, un coeficiente alfa de Cronbach mínimo aceptable es de 0,70 (Ventura-León, 2018). En este caso, el valor obtenido puede observarse en la tabla 1, lo cual indica que la fiabilidad del instrumento es adecuada.

Tabla 1. Cálculo de alfa de Cronbach. Elaboración propia a partir de Minitab ver.18.1.

Clave de las Dimensiones	Ítems	Alfa de Cronbach
(IF)	6.0	0.7818
(ACS)	5.0	0.7969
(CGF)	9.0	0.7507
(PR)	3.0	0.8476
(AF)	5.0	0.8149
(AC)	5.0	0.8190
(CC)	3.0	0.9129
(PE)	7.0	0.7046
(PR)	4.0	0.8588
(VM)	7.0	0.8965
(CFP)	3.0	0.7451

MUESTRA

Se llevó a cabo un muestreo aleatorio en el contexto actual para recopilar datos de 396 empresas en San Andrés Cholula. Este muestreo fue realizado por un equipo conformado por 26 estudiantes universitarios, quienes visitaron personalmente las unidades económicas durante un periodo de dos meses en el año 2021.

Para lograr un nivel de confianza del 95% con un margen de error del 5%, se requiere de una muestra de 384 micro, pequeñas y medianas empresas (MYPEs), asumiendo una proporción esperada del 50% en la población, para este estudio se realizaron 396 encuestas mayor al cálculo matemático.

Es importante destacar que las MYPEs tienen un papel fundamental en la economía de México, ya que representan una gran parte del empleo y de la producción económica del país. Por esta razón, es importante que se les brinde apoyo y recursos para fomentar su crecimiento y desarrollo sostenible.

RESULTADOS OBTENIDOS

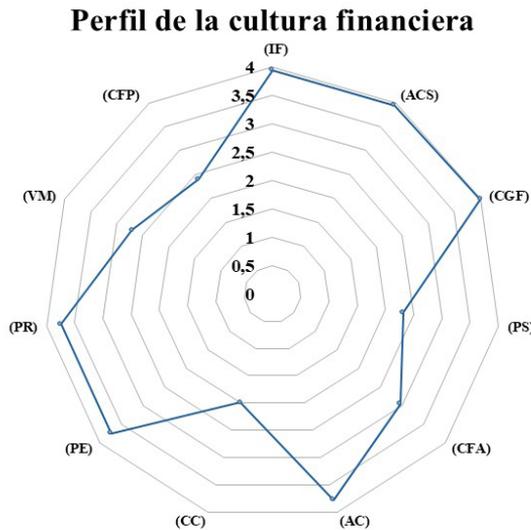
En este estudio, se utilizó una muestra de 396 participantes, quienes reportaron tener microempresas en el sector de comercialización (62.37%), transformación (11.36%), y prestación de servicios (26.25%). En términos de género, el 63.9% de los dueños son hombres y el 36.11% son mujeres. En cuanto a la edad, el 16.41% de los microempresarios tiene menos de 30 años, el 28.78% entre 31 y 40 años, el 30.6% entre 41 y 50 años y el

restante 24.21% cuenta con 51 años o más. Además, el 67.29% son casados, el 19.94% solteros, el 7.32% vive en unión libre y el 5.45% son divorciados. En cuanto a la formación académica, el 35.6% tiene estudios terminados de nivel secundaria, el 39.14% concluyó la educación preparatoria y el 25.3% cursó estudios profesionales.

El análisis descriptivo se enfocó en la percepción de actitudes, pensamientos y prácticas hacia el adecuado manejo de los recursos financieros. Los resultados indican que los participantes tienen de conocimiento básico financiero (4.1), autoeficacia y conocimiento subjetivo financiero (3.94), e inclusión financiera (3.85), comportamientos para la gestión financiera (3.9), de comportamientos financieros para la gestión de las finanzas (4.18).

Por otro lado, las respuestas tienen una tendencia desfavorable en las dimensiones de percepción de riesgo (2.81), valoración del dinero o materialismo (2.7), crédito financiero o préstamo (2.4) y nivel avanzado financiero (2.96), conocimiento intermedio financiero (3.7) y actitudes de compra (3.78), percepción de la compra compulsiva 1.99. Estos resultados sugieren fortalezas y áreas de oportunidad en la percepción y prácticas financieras de los microempresarios.

Figura 1. Perfil de la Cultura Financiera de las MYPES de San Andrés Cholula, Puebla, México.



En general, se puede observar en la figura 1, que los valores son relativamente altos en las dimensiones de Inclusión financiera, Autoeficacia y conocimiento subjetivo financiero, y Comportamientos para la gestión financiera, lo que sugiere que la población en estudio tiene una buena gestión financiera y actitudes hacia el dinero y las compras.

Sin embargo, se pueden identificar algunas áreas de mejora en cuanto a la Previsión de siniestros, Actitud financiera, Percepción de riesgo y Valoración del dinero o materialismo. Específicamente, los valores son relativamente bajos en estas dimensiones, lo que sugiere que la población en estudio podría mejorar su capacidad para prever y enfrentar situaciones financieras adversas, así como su actitud hacia el dinero y la valoración de los

bienes materiales.

Además, se puede observar que la población en estudio muestra una baja propensión al endeudamiento y a la solicitud de créditos financieros o préstamos, lo que puede indicar una actitud conservadora hacia la gestión financiera y una preferencia por evitar el endeudamiento. En general, estos datos pueden ser útiles para evaluar la cultura financiera de una población y para identificar posibles áreas de mejora en cuanto a la gestión financiera y las actitudes hacia el dinero y las compras.

CONCLUSIÓN

Estas dimensiones permiten evaluar diferentes aspectos relacionados con la cultura financiera de la MIPE, tales como su capacidad para acceder a servicios financieros (inclusión financiera), su conocimiento y habilidades para gestionar sus finanzas (autoeficacia y conocimiento subjetivo financiero), sus actitudes y comportamientos en relación a la gestión financiera (comportamientos para la gestión financiera), su capacidad para prever y enfrentar situaciones imprevistas (previsión de siniestros), entre otros.

La MYPE de San Andrés Cholula presenta valores destacados en algunas dimensiones, como la autoeficacia y conocimiento subjetivo financiero (ACS), comportamientos para la gestión financiera (CGF) y actitudes hacia la compra (AC), lo que sugiere que tiene habilidades y actitudes positivas para la gestión de sus finanzas y sus compras. Por otro lado, presenta valores bajos en otras dimensiones, como la previsión de siniestros (PS) y la actitud financiera (CAF), lo que indica que podría tener dificultades para enfrentar situaciones imprevistas y podría mejorar su actitud en relación a la gestión financiera.

En este orden de ideas, se puede concluir que las MYPEs tienen un buen desempeño en cuanto a los comportamientos para la gestión financiera y la autoeficacia y conocimiento subjetivo financiero. Esto indica que las MYPEs tienen un buen manejo de sus recursos financieros y cuenta con personal capacitado en finanzas.

Sin embargo, la previsión de siniestros y la actitud financiera presentan valores bajos, lo que sugiere que la empresa podría mejorar en cuanto a la identificación y prevención de posibles riesgos financieros y en la definición clara de una estrategia financiera a largo plazo.

En cuanto a las actitudes hacia la compra, la valoración del dinero o materialismo y el crédito financiero o préstamo, las MYPEs presentan valores moderados, lo que indica que existen áreas en las que podría mejorar para lograr una cultura empresarial más sólida y efectiva.

En general, las MYPEs del Municipio de San Andrés Cholula, Puebla, México, tiene un buen desempeño en cuanto a la gestión financiera, pero aún hay áreas de oportunidad en las que puede trabajar para mejorar su cultura empresarial y alcanzar un mayor éxito en el mercado.

Finalmente se plantean algunas posibles estrategias para las MYPEs del Municipio de San Andrés Cholula, Puebla, México, basadas en las dimensiones evaluadas en el estudio:

Inclusión financiera: las MYPEs deben buscar ampliar su acceso a servicios financieros,

como créditos, seguros y cuentas bancarias, a través de la identificación de las mejores opciones disponibles en el mercado y la presentación de una buena imagen crediticia. También deben buscar alternativas de financiamiento más accesibles, como fondos gubernamentales o inversionistas locales.

Autoeficacia y conocimiento subjetivo financiero: las MYPEs deben continuar mejorando sus habilidades y conocimientos financieros, a través de capacitaciones y asesorías especializadas en finanzas. Esto les permitirá tomar decisiones más acertadas y reducir los errores financieros.

Comportamientos para la gestión financiera: las MYPEs deben seguir desarrollando estrategias efectivas para la gestión de sus finanzas, tales como el control del flujo de caja, la elaboración de presupuestos y la implementación de planes de contingencia para situaciones imprevistas.

Previsión de siniestros: las MYPEs deben mejorar su capacidad para prever y enfrentar situaciones imprevistas, como la pérdida de un cliente importante o un incremento repentino en los costos de producción. Para ello, es recomendable que elaboren planes de contingencia y se aseguren de contar con un colchón financiero adecuado.

Actitud financiera: las MYPEs deben trabajar en mejorar su actitud en relación a la gestión financiera, buscando una cultura de ahorro y responsabilidad financiera a largo plazo. También deben buscar asesoramiento de expertos en finanzas para la definición de una estrategia financiera a largo plazo.

Actitudes hacia la compra: las MYPEs deben desarrollar una cultura empresarial más sólida y efectiva, fomentando la valoración del dinero y reduciendo el materialismo en su gestión empresarial. Además, deben buscar alternativas para reducir el uso excesivo de crédito y préstamos, buscando fuentes de financiamiento más sostenibles y seguras.

Estas son solo algunas posibles estrategias que las MYPEs del Municipio de San Andrés Cholula, Puebla, México, podrían implementar para mejorar su gestión financiera y alcanzar un mayor éxito en el mercado. Sin embargo, es importante que cada empresa evalúe sus necesidades y busque asesoramiento especializado para el diseño de una estrategia financiera efectiva y personalizada.

Declaración de conflicto de interés

Los autores del presente manuscrito manifiestan que no existen conflictos de interés con ninguna entidad o institución, ni de carácter personal en esta publicación. Los nombres utilizados en el presente caso de estudio han sido cambiados para proteger y mantener la confidencialidad de las fuentes de información, la identidad de sus participantes y de la organización.

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ANEXOS

Anexo 1. Instrumento de Cultura Financiera. (Relayn 2021).

6ª PARTE: CULTURA FINANCIERA					
En la siguiente sección selecciona tan rápido como te sea posible qué tan de acuerdo estás con las frases que se mencionan y encierra en un círculo el número que le corresponda.					
<i>En caso de que no aplique la pregunta o no sepas a qué se refiere selecciona "3" (No sé). En algunos casos la pregunta contiene varios asuntos, por favor contesta de manera global.</i>					
	Muy de acuerdo	De acuerdo	No sé/No aplica	En desacuerdo	Muy en desacuerdo
34. Cultura financiera					
34a. El banco más cercano está a menos de 5 km de mi casa	5	4	3	2	1
34b. Vivo a menos de 1 km de un cajero automático que facilita mi acceso a mi cuenta	5	4	3	2	1
34c. Conozco los productos y servicios bancarios formales (ahorros, préstamos, seguros y pagos/remesas)	5	4	3	2	1
34d. Sé qué documentos se requieren para abrir una cuenta bancaria	5	4	3	2	1
34e. He usado mi cuenta para ahorrar o realizar pagos a crédito	5	4	3	2	1
34g. Recibo información de forma automática sobre mis transacciones	5	4	3	2	1
35a. Estoy seguro de que puedo administrar mis finanzas	5	4	3	2	1
35b. Puedo controlar mis gastos mensuales para no sobrepasar mis ingresos	5	4	3	2	1
35c. Puedo depositar dinero con confianza en el banco para planificar el futuro	5	4	3	2	1
35d. Tengo la capacidad de pedir dinero prestado al banco	5	4	3	2	1
35e. Tengo los conocimientos y habilidades para manejar mis finanzas personales	5	4	3	2	1
36a. Llevo control de mis gastos personales en un registro escrito o electrónico	5	4	3	2	1
36b. Comparo precios al comprar algo.	5	4	3	2	1
36c. Me mantengo en un plan de gastos o presupuesto	5	4	3	2	1
36d. Puedo identificar cuánto pago cuando uso crédito	5	4	3	2	1
36e. Pago mis facturas o créditos a tiempo para evitar cargos adicionales	5	4	3	2	1
36f. Ahorro y analizo mi situación financiera antes de una compra importante	5	4	3	2	1
36g. Tengo dinero reservado de al menos tres meses de mis ingresos para usar en caso de emergencia	5	4	3	2	1
36h. En los últimos 12 meses, he podido ahorrar dinero	5	4	3	2	1
36i. Ahorro para comprar productos más caros (por ejemplo, automóvil, estudio, hogar, etc.)	5	4	3	2	1
39a. He comprado seguros de salud o de vida	5	4	3	2	1
37b. He comprado un seguro o ahorro para el retiro	5	4	3	2	1
37c. He comprado un seguro para propiedades de automóvil o propiedades	5	4	3	2	1
38a. Es importante que una familia desarrolle un patrón regular de ahorro y se apegue a él	5	4	3	2	1
38b. Las familias deben tener metas financieras escritas que ayuden a determinar prioridades de gasto	5	4	3	2	1
38c. Un plan financiero escrito es absolutamente esencial para una gestión financiera exitosa	5	4	3	2	1
38d. Planificar ingresos, ahorro y gastos es esencial para el éxito en la vida	5	4	3	2	1
38e. Estoy satisfecho con mi registro de finanzas aunque requiere demasiado tiempo	5	4	3	2	1
39a. Es mejor comprar y vender a través de Internet, porque así no me expongo a los riesgos que implica manejar efectivo	5	4	3	2	1
39b. Considero que los bancos brindan suficiente seguridad en las transferencias económicas virtuales para comercializar on-line	5	4	3	2	1
39c. Considero que comprando a través de Internet evito las colas para realizar pagos, recoger productos, comprobantes, etc.	5	4	3	2	1
39d. Una ventaja del comercio a través de Internet es que se puede hacer a cualquier hora y en cualquier lugar	5	4	3	2	1
39e. El desarrollo de nuevas tecnologías de seguridad para transacciones económicas virtuales, me da la confianza de comprar en línea	5	4	3	2	1
40a. Si queda dinero al final del mes, debo gastarlo	5	4	3	2	1
40b. Compró cosas incluso cuando no puedo pagarlas	5	4	3	2	1
40c. Me siento ansioso o nervioso cuando paso un día sin comprar algo	5	4	3	2	1
En la siguiente sección selecciona tan rápido como te sea posible qué tan de acuerdo estás con las frases que se mencionan y encierra en un círculo el número que le corresponda.					
<i>En caso de que no aplique la pregunta o no sepas a qué se refiere selecciona "3" (No sé). En algunos casos la pregunta contiene varios asuntos, por favor contesta de manera global.</i>					
	Muy de acuerdo	De acuerdo	No sé/No aplica	En desacuerdo	Muy en desacuerdo
41. Cultura financiera (Continúa)					
41a. Es preferible tratar de pagar siempre al contado.	5	4	3	2	1
41b. Es importante pagar las deudas lo antes posible.	5	4	3	2	1
41c. Es importante saber cuánto debo en tiendas, en tarjetas de crédito o al banco	5	4	3	2	1
41d. Obtener un préstamo es algo bueno porque te permite disfrutar de la vida	5	4	3	2	1
41e. Es mejor endeudarse que dejar que los niños se vayan sin regalos en fechas importantes	5	4	3	2	1
41f. La mayoría de las personas se endeudan demasiado con tarjetas de crédito	5	4	3	2	1
41g. No me gusta pedir dinero prestado	5	4	3	2	1
42a. He gastado una gran cantidad de dinero en juegos	5	4	3	2	1
42b. He aceptado ser garante o aval de alguien	5	4	3	2	1
42c. Al tomar una decisión de inversión, generalmente prefiero alternativas riesgosas	5	4	3	2	1
42d. He realizado préstamos de una gran parte de mis ingresos a un amigo o familiar	5	4	3	2	1
43a. El dinero me ayuda a ser feliz	5	4	3	2	1
43b. Quienes tienen dinero son valorados socialmente como exitosos	5	4	3	2	1
43c. Me gusta poseer cosas para impresionar a la gente	5	4	3	2	1
43d. Las personas que poseen casas, autos y ropa costosos son admirables	5	4	3	2	1
43e. Comprar cosas lujosas me da mucho placer	5	4	3	2	1
43f. El que tiene dinero también tiene autoridad sobre los demás.	5	4	3	2	1
43g. Las personas realizan actos poco éticos para maximizar sus ganancias monetarias	5	4	3	2	1
44a. A veces pido préstamos a personas que dan crédito de forma oportuna y sin tramites complicados	5	4	3	2	1
44b. He tenido experiencias desafortunadas por endeudarme con créditos fuera del sistema bancario	5	4	3	2	1
44c. Pido a préstamos a personas particulares, por no tener crédito con el sistema financiero tradicional	5	4	3	2	1

Predictive Modeling of Customer Purchase Behavior in Social Media Advertising: A Logistic Regression Approach

Keywords: Customer, Social Media, Logistic Regression Approach.

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ABSTRACT

This study investigates the impact of demographic factors on purchase behavior in social media advertising, addressing a key issue for marketers: identifying which characteristics can enhance targeted ad strategies. Using logistic regression, the research examines how age and estimated salary influence the probability of making a purchase, offering insights into consumer decision-making in digital environments. The analysis draws on a dataset of 400 observations from a survey of active social media users across platforms like Instagram, Facebook, and Twitter. A logistic regression model was trained to assess the relationship between demographic predictors and purchase outcomes, with subsequent testing for predictive accuracy. Both age and estimated salary emerged as significant predictors, with each showing a positive association with purchase probability. Marginal effects analysis highlighted the stronger influence of age on purchase likelihood, while estimated salary, though statistically significant, showed a subtler effect. Additionally, odds ratios confirmed the predictive strength of these factors. Model performance was evaluated using accuracy, precision, and recall metrics derived from a confusion matrix, demonstrating high reliability in predicting purchasers and non-purchasers, albeit with a conservative tendency. The distribution of predicted probabilities indicated strong confidence in classifying non-purchasers, supporting the model's cautious approach to positive predictions. These findings provide practical insights for marketers seeking to optimize ad targeting by leveraging demographic data. By understanding the demographic drivers of purchase decisions in social media contexts, this study contributes to the development of more efficient and effective advertising strategies, ultimately enhancing customer engagement. Future research could expand this model by incorporating additional demographic or psychographic variables, facilitating a more nuanced approach to predicting purchase behavior in digital advertising.

Keywords: Customer, Social Media, Logistic Regression Approach.



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JUSTIFICATION

The rapid growth of social media as a marketing channel has fundamentally changed how companies connect with consumers, creating an urgent need for precise, data-driven strategies to understand and influence purchase behavior (Naem & Okafor, 2019). Demographic factors, especially age and income, are well-established as critical in shaping consumer decisions due to their links with purchasing power, preferences, and responsiveness to marketing stimuli (Kotler & Keller, 2016; Solomon, 2018). However, while traditional retail contexts have been extensively studied, there is a pressing need for research focusing on the unique dynamics of social media advertising, where ad exposure and consumer engagement differ substantially from other platforms (Kaplan & Haenlein, 2009; Akar & Topçu, 2011).

This study addresses this gap by using logistic regression to quantitatively evaluate the effects of age and estimated salary on purchase likelihood within social media environments. By examining these demographic predictors, the research enhances our understanding of consumer behavior in digital advertising and provides marketers with actionable insights to improve ad targeting. This focus is increasingly relevant as firms face greater demands to justify marketing expenditures and optimize return on investment (ROI) through data-driven campaigns (Chaffey & Ellis-Chadwick, 2019; Stieglitz et al., 2017).

RESEARCH OBJECTIVE

This study aims to investigate the impact of demographic factors—specifically age and estimated salary—on purchase probability within social media advertising. It tests two hypotheses: (1) Age and estimated salary significantly predict consumer purchasing behavior, and (2) Marginal effects and odds ratios clarify the influence of these factors on purchase likelihood. The findings are intended to enhance targeted advertising strategies based on demographic data in digital platforms.

METHODOLOGY

This study applies to a logistic regression model to assess the impact of age and estimated salary on the likelihood of consumer purchase within the context of social media advertising. Given the binary outcome variable (Purchased: 1 = Purchase, 0 = No Purchase), logistic regression is well-suited for estimating the probability of purchase, as it effectively links predictor variables to the log-odds of an outcome (Hosmer et al., 2013; Menard, 2010). This approach aligns with logistic modeling theory, allowing for a clear interpretation of predictors' effects through log-odds and odds ratios, enhancing understanding of the demographic factors influencing purchasing behavior (Peng et al., 2002), as represented by the following formula:

$$\log\left(\frac{P}{1-P}\right) = \beta_0 + \beta_1 \text{Age} + \beta_2 \text{EstimatedSalary}$$

The dataset consists of 400 observations from a 2023 survey targeting active social media users on platforms such as Instagram, Facebook, and Twitter. These observations include demographic and economic information for consumers exposed to social media ads. Data preprocessing involved calculating summary statistics, checking for missing values and duplicates, and visualizing the distribution of age and estimated salary by purchase status. To ensure effective model evaluation, the dataset was partitioned into training and test sets, with a random assignment of 90% of observations to the training set and 10% to the test set, yielding 365 observations (91.25%) for training and 35 (8.75%) for testing (Stieglitz et al., 2017). This partitioning strategy provides a robust foundation for model training and evaluation, as shown in Table 1.

Table 1. Data Partitioning for Training and Testing.

Train Set	Frequency	Percent	Cumulative Percent
0 (Test)	35	8.75	8.75
1 (Train)	365	91.25	100.00
Total	400	100	100

The logistic regression model was fitted on the training subset to estimate the effects of age and estimated salary on purchase probability, with marginal effects and odds ratios calculated to improve interpretability of results. Model performance was evaluated on the test subset using accuracy, precision, and recall metrics derived from the confusion matrix, offering a comprehensive view of the model’s classification effectiveness. This rigorous approach, grounded in logistic modeling theory, combines theoretical and practical insights to support data-driven marketing strategies effectively (Hosmer et al., 2013; Peng et al., 2002).

RESULTS

This section presents the results in three parts: (1) descriptive statistics, (2) hypothesis testing and model estimates, and (3) performance metrics and interpretation of the model’s predictive accuracy.

Descriptive Statistics

The descriptive statistics in Table 2 summarize the sample’s characteristics in terms of age, estimated salary, and purchase behavior. The average age is 37.7 years with a standard deviation of 10.5, indicating a diverse age representation from 18 to 60. Estimated salary averages \$69,742.50, with high variability (standard deviation of \$34,096.96) and a range from \$15,000 to \$150,000, reflecting a broad spectrum of economic backgrounds. The binary purchase variable shows a mean of 0.3575, indicating that about 35.8% of individuals made a purchase. This baseline provides an initial insight into the likelihood of purchase within this dataset, which will be further analyzed to determine how age and estimated salary influence purchase behavior. Data quality checks indicate that there are no missing values or duplicate records, confirming the integrity of the dataset for further analysis. These initial descriptive statistics set the foundation for subsequent analyses to

explore the relationships between demographic factors and purchasing decisions.

Table 2. Descriptive Statistics.

Variable	Mean	Std. Deviation	Min	Max
Age	37.655	10.48288	18	60
Estimated Salary	69742.5	34096.96	15000	150000
Purchased (binary)	.3575	.479864	0	1
Missing Values	None			
Duplicate Records	None			

The data visualizations offer insights into the distributions of age and estimated salary by purchase status, revealing demographic trends that may influence purchase likelihood. In Figure 1, purchasers are generally older than non-purchasers, indicating a positive relationship between age and purchase probability. Similarly, Figure 2 shows that individuals with higher estimated salaries are more likely to make a purchase, supporting the hypothesis that income positively impacts purchase behavior. Figure 3 reveals that approximately 36% of the sample made a purchase, providing a baseline purchase probability. These visualizations reinforce the inclusion of age and estimated salary as predictors in the logistic regression analysis, suggesting both factors play a significant role in consumer purchase decisions in social media advertising.

Figure 1. Age Distribution by Purchase Status.

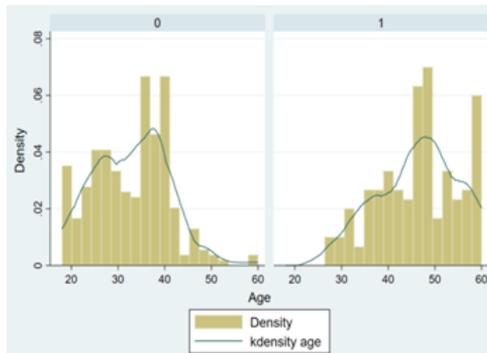


Figure 2. Estimated Salary Distribution by Purchase Status.

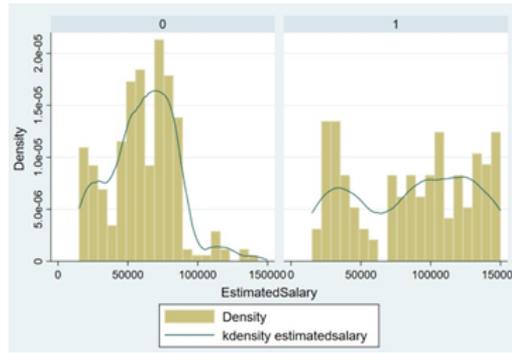
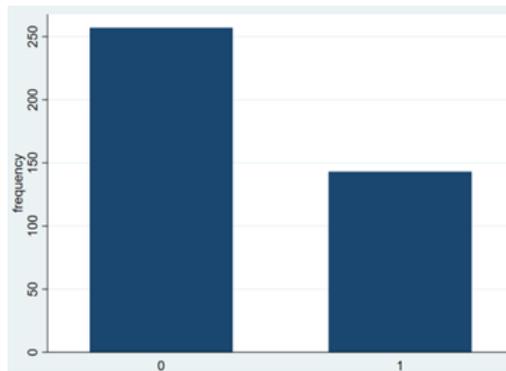


Figure 3. Overall Purchase Distribution.



Hypothesis Testing and Model Estimates

The logistic regression model estimated purchase probability based on Age and Estimated Salary, both of which showed statistically significant coefficients, affirming that these factors positively influence purchase likelihood. As indicated in Table 3, the Age coefficient (0.2239, $p < 0.001$) suggests that each additional year increases the log-odds of purchase, while the Estimated Salary coefficient (0.0003, $p < 0.001$) points to a positive association between higher salary and purchase probability. The model converged after five iterations with a final log likelihood of -131.3114. Model fit was assessed with a pseudo- R^2 of 0.4502 and an LR chi-square of 215.06 ($p < 0.001$), indicating it explains a substantial portion of purchase behavior variance. As noted in Table 3, an initial estimation was followed by up to 500 iterations to ensure stability and convergence.

Table 3. Logistic Regression Results.

Variable	Coefficient (β)	Std. Error	z-value	P> z	95% CI
Age	0.2239	0.0257	8.72	0.000	[0.1736, 0.2742]
Estimated Salary	0.0003	5.52e-06	6.32	0.000	[0.0002, 0.0005]
Intercept	-11.9784	1.2928	-9.27	0.000	[-14.5124, -9.4445]

Model Statistics

Log likelihood -131.3114

LR chi² (2) 215.06

Pseudo R² 0.4502

Observations 365

Note: The initial estimation was performed, and the model was subsequently iterated up to 500 times to ensure convergence.

Table 4 presents the odds ratios for the predictors, offering a more interpretable perspective on the model's estimates. The odds ratio for Age was 1.2509 (95% CI: [1.1895, 1.3155]), implying that each additional year of age increases the odds of purchase by approximately 25.1%. The odds ratio for Estimated Salary, although close to 1 due to the small coefficient size, still indicates a positive association with purchase likelihood, reinforcing the significance of both predictors.

Table 4. Logistic Regression Results with Odds Ratios.

Variable	Odds Ratio	Standard Error	z-value	P> z	95% CI
Age	1.25094	0.03213	8.72	0.000	[1.18953, 1.31553]
Estimated Salary	1.000035	5.52e-06	6.32	0.000	[1.000024, 1.000046]
Intercept	6.28e-06	4.98e-07	-9.27	0.000	[4.98e-07, 7.91e-07]

Model Statistics

Log likelihood -131.3114

LR chi² (2) 215.06

Pseudo R² 0.4502

Observations 365

To quantify the practical impact of these predictors on purchase probability, we calculated the marginal effects, as shown in Table 5. For Age, the marginal effect was 0.0258, indicating that each additional year increases the probability of purchase by approximately 2.58 percentage points, holding all other variables constant. In contrast, Estimated Salary exhibited a much smaller marginal effect of 4.02e-06, meaning that for each additional dollar in estimated salary, the probability of purchase increases by just 0.0004 percentage

points. Although this effect is statistically significant, its magnitude is considerably smaller than that of Age. This suggests that while estimated salary does have a positive influence on purchase likelihood, it has a relatively minimal practical impact compared to Age. This difference implies that age plays a more substantial role in predicting purchase behavior within this model, while estimated salary serves as a secondary predictor with a subtler effect on the outcome.

Table 5. Marginal Effects of Explanatory Variables.

Variable	Marginal Effect (dy/dx)	Standard Error	z-value	P> z	95% CI
Age	0.0258	0.0014	18.21	0.000	[0.0230, 0.0286]
Estimated Salary	4.02e-06	4.87e-07	8.25	0.000	[3.06e-06, 4.97e-06]

Prediction Results and Model Evaluation

To assess the logistic regression model's predictive performance, the dataset was split into training and testing sets. Using a probabilistic threshold, individuals were classified as likely purchasers (1) or non-purchasers (0) based on predicted probabilities. The trained model was then applied to the test set, and its effectiveness was evaluated using a confusion matrix and metrics of accuracy, precision, and recall.

The confusion matrix in Table 6 compares model predictions to actual outcomes. Of the 35 test set observations, the model correctly classified all 24 non-purchasers (Predicted = 0), with no false positives. For the 11 actual purchasers, 8 were accurately predicted as purchasers (Predicted = 1), while 3 were misclassified as non-purchasers, resulting in false negatives.

Three main metrics provide a comprehensive evaluation of model performance: accuracy, precision, and recall. The model achieved an accuracy of 91.43%, correctly predicting purchase behavior in over 91% of cases. Precision, calculated as the proportion of true positives among all positive predictions, was 1.0000, indicating perfect reliability in predicting purchasers. Recall, measuring the model's ability to capture actual purchasers, was 72.73%, reflecting its effectiveness in identifying most, though not all, purchasers in the test set. Table 6 summarizes the confusion matrix and evaluation metrics.

Table 6. Confusion Matrix of Model Predictions and Model Evaluation Metrics.

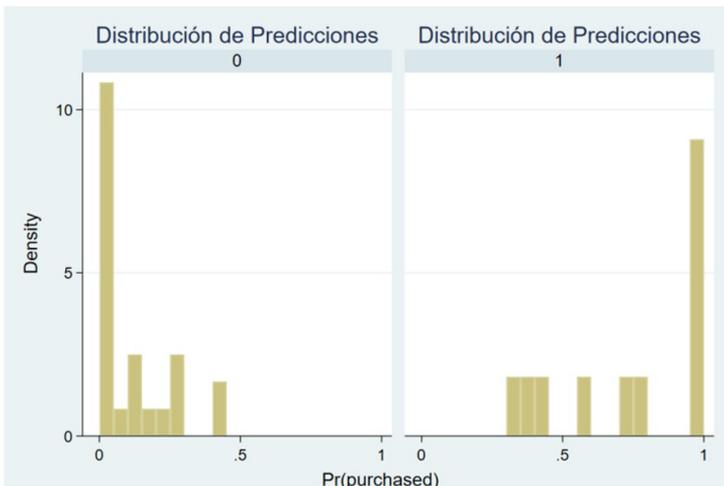
Actual Purchased	Predicted = 0	Predicted = 1	Total
0 (Not Purchased)	24	0	24
1 (Purchased)	3	8	11
Total	27	8	35

Metric	Value
Accuracy	0.9143
Precision	1.0000
Recall	0.7273

To further evaluate the model's predictive behavior, we analyzed the distribution of predicted probabilities for each class using the histogram in Figure 4. In the left panel (labeled "0"), representing non-purchasers, the distribution is strongly skewed towards zero, indicating high model confidence in correctly identifying non-purchasers. This aligns with the high precision in the confusion matrix, where all true negatives were accurately classified without false positives.

In the right panel (labeled "1"), representing purchasers, probabilities cluster near one, suggesting similar confidence in positive predictions. However, a few cases display lower probabilities closer to 0.5, potentially explaining the false negatives observed in the recall metric. This distribution reveals the model's conservative approach, favoring high certainty before assigning a positive label (purchase).

Figure 4. Distribution of Predicted Probabilities by Purchase Status.



Overall, this histogram illustrates the model's capacity to make well-defined predictions for each group, with strong confidence in both high and low probability ranges. However, the presence of some lower probabilities within the purchaser group highlights the trade-off between precision and recall, as the model prioritizes accuracy over a broader capture of all potential purchasers. This conservative approach aligns with the high precision observed but indicates an area where further model tuning could improve recall without sacrificing accuracy.

CONCLUSIONS

This study provides a comprehensive analysis of demographic factors influencing purchase likelihood in the context of social media advertising. Using logistic regression, we identified age and estimated salary as significant predictors of purchase behavior, each associated with an increase in purchase probability. Age demonstrated a particularly strong effect, with each additional year correlating with a 25.1% increase in purchase odds. By contrast, the effect of estimated salary, while statistically significant, was subtler in its impact, suggesting that salary influences purchase likelihood but to a lesser degree than age. This distinction was further highlighted in the marginal effects analysis, where an incremental increase in age produced a more noticeable rise in purchase probability compared to similar changes in estimated salary. This differential effect underscores age as a more powerful predictor in our model, while estimated salary serves as an additional, but secondary, factor.

The model evaluation revealed a high accuracy rate of 91.43% and a precision of 100%, underscoring the model's strength in accurately identifying purchasers with minimal false positives. However, a recall rate of 72.73% highlighted a limitation in detecting all actual purchasers, indicating that the model may be conservative in its predictions, prioritizing certainty over inclusivity. This pattern was reflected in the predicted probability distribution, which demonstrated high confidence, especially for non-purchasers.

These findings have significant implications for targeted marketing strategies. By leveraging insights into age and estimated salary as key demographic factors, marketers can improve the efficiency of ad targeting, directing resources toward segments with a higher likelihood of purchasing. Understanding these nuanced demographic influences enables companies to fine-tune their social media advertising strategies, maximizing engagement and conversion rates. This research contributes both to academic discussions on consumer behavior in digital contexts and to practical applications in optimizing advertising strategies. Future research could explore additional demographic or psychographic variables to improve model recall and achieve a balanced approach that enhances both prediction accuracy and inclusivity.

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A proposal to change from New Public Management (UK) to New Public Service (US) after the BREXIT: an attempt to reduce the number of wars through the insertion of society in public projects

Keywords: Corruption, Cultural intelligence, Shared governance, Cultural change, Popular participation.

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ABSTRACT

The Withdrawal Agreement concluded between the European Union and the United Kingdom (2016 referendum and 2018 decisive progress) opened space to change from the English model of Public Administration (New Public Management – NPM) to the American model (New Public Service – NPS) in order to reduce the growth of communism via authoritarian governments.

According to several scholars, the NPM has generated high levels of corruption (isolation of the knowledge in the top of the public administration along with government). The NPS changes the existing power structures and promotes a more equitable distribution of knowledge and decision-making.

For novelty and originality, this article proposes a review of the NPS model through knowledge creation and sharing practices (Knowledge Management – KM), as well as knowledge analysis (Organizational Intelligence – OI) and application practices (Cultural Intelligence – CI).

The work concludes that KM, OI and CI are the missing elements for NPS to replace NPM as it drastically reduces the avalanche of information and brings relevant collective knowledge, especially for public policies that directly impact the relationship between government, companies and society and therefore reduce the weakest elements of the capitalism : corruption and the overload of information without proper knowledge, caused by the “American” Giants.

Keywords: Corruption, Cultural intelligence, Shared governance, Cultural change, Popular participation.



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INTRODUCTION

In order to understand the impact of culture on knowledge and intelligence, in addition to the impact of knowledge itself on intelligence, this work uses a robust literature review about these topics applied in the marketing strategy field.

The main conclusion is that the low level of cultural intelligence in countries colonized by England, based on knowledge and not intelligence (application of knowledge), leads to economic dependence, such as Canada's relations with the United States and New Zealand with Australia, in addition to Nigeria with South Africa. Therefore, the NPS model brings new knowledge (organized civil society) to Public Administration which leads to better capacity to apply it considering the use of practices of KM and OI.

This work seeks to reduce the knowledge gap that exists within articles on Public Administration by discussing the cultural, social, political and economic implications of the adoption of NPM, a model proposed by Margaret Thatcher in 1980 (Thatcherism) and widely used by the majority of countries, taking advantage of Thatcher's good relationship with Ronald Reagan (Republican Party of US) that spanned generations and today can be seen in the intersection of decisions between President Donald Trump and King Charles III.

The Withdrawal Agreement concluded between the European Union and the United Kingdom establishes the terms of the United Kingdom's orderly withdrawal from the EU, in accordance with Article 50 of the Treaty of the European Union.

England's exit from the European Community was justified to the English people as the best way to stop supporting the Latin culture of distraction, but the impetus came from the English royal family, and its relationship with India, France, Mexico, China and Russia, in that order.

This very important finding (fact) highlights the necessity of the unification of technique (Public Administration) and Politics (government) and therefore a new model of Public Administration, moving from the English Model (New Public Management – NPM) to the American Model, New Public Service – NPS (De Angelis, 2013).

The emergence of Public Administration reform through the consideration of popular participation, is based on the high levels of corruption and the weak effectiveness of several public projects in Brazil, particularly those that impact society itself, in addition to, of course, the post-covid economic crisis and the start of wars, which impacted all countries. Recently Germany has discovered that Covid was created in a laboratory (Operation Saarema discovered that the virus was manipulated at the Wuhan Institute of Virology)¹.

The current English model, New Public Management (NPM), proved to be ineffective when it came to imitating the private sector, seeking more competition than collaboration.

¹ <https://www.dw.com/en/covid-pandemic-likely-unleashed-by-lab-mishap-germanys-bnd/a-71897701>

Then emerges the American model of Denhard and Denhard (2003), New Public Service (NPS), which is known as a participatory model, since it shows the importance of collective knowledge in government action.

More than just considering participation and co-production as strategies to increase the efficiency and efficacy of governments, it presupposes a wide understanding of democracy as a practice and exercise capable of transforming public administration and its relations with societies (Ansell, 2011; Frega, 2019; Shields, 2003, cited by Andion, 2023).

This work reviews the literature on Public Administration models and proposes Knowledge Management and Cultural Intelligence as tools for the change from NPM to NPS.

The work is divided into four sections. The first shows the transition from the bureaucratic model to the NPM model. The second session shows the transition from NPM to NPS. Section 3 presents the methodology of the study. Section 4, in turn, uses cultural intelligence and knowledge management for the popular participation (NPS) model.

1. THE NEW PUBLIC MANAGEMENT (NPM) MODEL: THE ISOLATION OF KNOWLEDGE IN THE TOP OF THE GOVERNMENT

According to existing research in public administration, three prominent models of public management are identified: the bureaucratic model, the New Public Management (NPM) model, and the participatory model (based on collaboration networks). Each of these models holds relevance in various economic, social, and political contexts (De Angelis, 2013).

Bureaucracy became the foundational management model for most organizations during the 20th century, aligning with the industrial age's diverse business needs. The uniformity of rules, routines, and the regulatory definition of tasks helped make processes more predictable, reducing external influences and fostering a false sense of governmental trust (Osborne and Ted, 1992).

Osborne and Gaebler (1992), drawing from Max Weber's teachings, describe traditional-bureaucratic governments as centralized, hierarchical structures that are often criticized as "wasteful, inefficient, and too slow to adapt." The bureaucratic model's emphasis on predictability and security stemmed from a fundamental mistrust of human nature, leading to rigid practices, corporatism, excessive decision-making concentration, and formalism—traits that hindered innovation.

Proponents of the New Public Management (NPM) model argue that the Weberian bureaucratic system is inflexible, slow, and inefficient, failing to meet the demands of the public (Larbi, 1999). The primary motivation for the transition from bureaucracy to NPM in the 1980s was to address the low quality of public services. Margaret Thatcher, a key advocate of NPM, convinced governments that imitating private sector practices was the solution to bureaucratic inefficiency.

According to Stewart and Walsh (1992), NPM introduced market-driven practices to public administration to reduce centralization, hierarchy, slowness, and poor results characteristic of the bureaucratic model. By emphasizing competitiveness and efficiency, NPM sought

to replace the traditional bureaucratic structure with a model based on business practices. Kajimbwa (2013) found that the features of New Public Management (NPM) vary widely, as noted by Scheduler and Proeller (2002), who point out the “vast” literature surrounding NPM models and tools. Similar observations are made by McCourt (2001), Cheung (2003), OECD (1995), and Minogue (2001). From this broad scholarship, five key characteristics of NPM can be distilled: (1) deregulation and decentralization of management and finances; (2) the creation of autonomous agencies and privatization bodies from traditional government departments; (3) a shift toward output-based performance assessment and contractual governance; (4) the introduction of competition and market mechanisms within the public sector; and (5) the broader use of public-private partnerships and privatization strategies.

De Angelis (2015) explains that the NPM model emerged in the 1980s in the UK with the idea that the bureaucratic system was insufficient and needed modernization through private-sector techniques. The NPM is grounded in rational choice theory and principal-agent theory, focusing on individual motivations and rational decision-making. Public administrators were expected to increase accountability and performance, restructure bureaucratic entities, redefine missions, optimize processes, and decentralize decision-making. This shift aimed to build trust in the market's methods and the principles of economic rationalism.

As a result, the NPM is closely linked to the public choice theory, which posits that all human behavior is driven by self-interest. In this model, public administration is viewed as a business, with an emphasis on efficiency and rationality, often at the expense of community welfare and effectiveness. The public choice approach advocates for privatization to reduce the size of government, a key characteristic of NPM in its early stages.

Diniz (2000) points out that the NPM's institutional design has led to a greater isolation of decision-makers, fostering personalistic practices. The concentration of knowledge at the top of government has been linked to increased corruption. Critics of NPM highlight its tendency to lower morale within the public sector and argue that the differences between the public and private sectors are too vast for business practices to be applied effectively (Larbi, 1999; Boston et al., 1996). In particular, privatization under NPM has been linked to heightened clientelism and corruption (Samaratunge et al., 2008).

Clientelism, in this context, refers to asymmetric exchange relationships characterized by political transactions (Malvestio, 2015). These dynamics compromise the ethics and morality of the NPM model. The private sector, like the state, seeks to serve the customer for profit, but in NPM, there is no win-win relationship between the state and society; the focus is solely on minimizing costs (efficiency) and maximizing revenue. This lack of social responsibility in the relationship between the state and market results in deteriorating ethical standards, favoritism, and greed (Malvestio, 2015).

While NPM is presented as a comprehensive approach to enhancing public services, critics argue that it creates a fundamental conflict between the goals of equity and efficiency, thereby challenging the coherence of administrative values (Hood, 1991).

Authors found that While bureaucratic administration is centralized and authoritarian, the NPM's business management approach is rooted in neoliberal beliefs of absolute rationality. State reform, under NPM, is centered around redefining the role of the state from directly overseeing economic and social development to promoting and regulating this development. It involves strengthening regulation and coordination functions and progressively decentralizing executive functions to municipal levels for service provision. However, decentralization has not unfolded as expected due to political and cultural challenges, particularly the distrust in public servants' nature and political control over public administration. Additionally, result-based control has led to unnecessary or duplicated programs and actions. In fact, several democratic countries is measuring project's impact through the concept of efficacy instead effectiveness due to the fact that the leader of the project can ask to contract more members (more political support) through the results measure by himself.

De Angelis, Calvento e Roache (2012) explained that the United of the United States promoted a series of requirements as a necessary condition for economic development, known as Washington consensus, whose basic principles - articulated in triple logic: deregulation, liberalizing and privatizing - were applied almost dogmatic in Argentina during Carlos Menem's government since 1989. Thus, in the 1990s there were consolidation of the neoliberal model and the transformation of the national economic structure, restoring the social fabric and generating deep delegitimization of politics, which resulted in the inevitable implosion of the model in the crisis Multidimensional 2001.

Similarly, the privatization process was carried out within a structure of multiple irregularities and state action - through political decisions - encouraged the formation of monopolies and oligopolies that "were made up of one of the central attractions of privatization business" (Thwaites Rey and López, 2004: 8). Business conglomerates trained by large local economic groups (state partners since 1976), which have been associated with companies and representatives of the foreign bank, shaping power groups with strong capacity for the planning of economics and politics (Colombo, 2004: 39).

Dagnino (2004) critiques NPM for neglecting public participation in policy-making. The strong relationship between government and the private sector, coupled with a lack of societal involvement, fosters corruption. NPM's emphasis on reducing bureaucracy and costs has resulted in increased decision-making discretion for managers, but without sufficient training, these managers often remain bureaucratic in their approach, rather than becoming collaborative leaders.

NPM seeks to enhance public administration's efficiency and effectiveness, but inefficiency and ineffectiveness in practice challenge the relationship between government, public administration, and society. Inefficient projects that exceed costs and fail to meet objectives undermine effectiveness, which is measured by the impact on society. Effectiveness, based on collective societal knowledge (as per the NPS model), not only improves efficiency by eliminating unnecessary actions but also strengthens the quality of public services.

In conclusion, while NPM focuses on efficiency and measurable outcomes, it tends to overlook effectiveness in the broader, societal sense. The importance of incorporating societal input and focusing on collective outcomes is crucial for achieving true effectiveness in public administration.

The New Public Management (NPM) model aims to enhance the effectiveness and efficiency of public administration. However, the inefficiency and ineffectiveness inherent in many NPM-based projects undermine the relationship between government, public administration, and society. When projects exceed budgetary limits (inefficiency) and fail to meet objectives and goals (ineffectiveness), the overall impact decreases, as society itself evaluates the effectiveness of public services.

Effectiveness, in this context, integrates the three pillars of knowledge management—systems, processes, and people—and the three pillars of cultural intelligence—strategy, forecasting, and action. This focus emphasizes the collective evaluation of the quality of results and the necessity of specific public actions. Achieving effectiveness through the collective knowledge of society, as exemplified by the New Public Service (NPS) model, can also contribute to efficiency by reducing costs through the elimination of unnecessary actions. This point will be explored further in the next section.

It is paramount to understand the impact of culture on the practical application of NPM. For example, some countries in Africa demands a high level of interaction between the different sectors of a public organization.

For them, the leader should be “humanized and effective” in achieving objectives in collaborative environments and with purpose, autonomy, mastery, initiative, mission and worldview, rather than extreme concentration and procedures and norms. On the other hand, the structure of governments that adopted the NPM, to date, has not allowed society’s demands to enter public sector agendas.

According to Kajimbwa (2013), the implementation of NPM in African nations appears promising, supported by a few modest cases that highlight its advantages. Literature shows that Ghana and Tanzania are amongst African countries that applied the NPM model and modestly benefited from the governance reforms. Noticeably, Ghana and Tanzania positively applied governance reforms that embraced a more participative, flexible and voluntarism approach (Kajimbwa, 2013).

2. FROM NEW PUBLIC MANAGEMENT (NPM) TO NEW PUBLIC SERVICE (NPS)

After the decline of both the bureaucratic and NPM models, public sectors in developed countries underwent several transformations, attempting to adapt to an increasingly uncertain, dynamic, and complex environment through new management models (De Angelis, 2015). Christensen and Laegreid (2007) observe that these new models are drawn from various traditions, sometimes mixing them, and can significantly influence the flow of knowledge available for decision-making.

The rise of governance models based on networks, such as network government (Goldsmith and Eggers, 2004), join-up government (Bogdanor, 2005), and digital-era government (Dunleavy et al., 2007), has fostered greater citizen participation through technologies

supporting the exchange of knowledge. While network collaboration has brought collective efficiency—through reduced transaction costs and faster innovation—these governance networks have also generated vast amounts of information, leading to new uncertainties and complexities. This surge in information often results in a loss of focus and a lack of satisfactory outcomes (Wart et al., 2012).

The transition from the NPM model to participatory models based on networks, such as the NPS, particularly after pandemics and wars, often occurs without integrating practices of Knowledge Management and Cultural Intelligence. In NPM, governments struggle to articulate strategy (what and why to do), planning (how to do it), and management (how to assess actions and improve government performance).

To avoid transitioning to the NPS, the NPM model contends with an overwhelming amount of information, the underestimation of human capital, the failure to utilize collective knowledge, and a lack of effective results. This often benefits politicians and public servants at the expense of society. These behaviors are closely tied to the lack of spiritual intelligence—particularly the collective, macro-level vision—which is hindered by a culture of exploitation that fosters win-lose relationships.

The creation of empowered communities, in this context, depends more on the organization and involvement of society itself rather than on the support of government or the private sector. However, this requires investment in education and a broader understanding of the political landscape, which ultimately depends on society's ability to avoid false interpretations of political scenarios and their key players.

The central idea of public administration reform lies in raising awareness among public organizations about the importance of collaboration—sharing knowledge and experiences as seen in the NPS model. This shift involves moving away from the competitive NPM model, which prioritizes profit over the public interest.

Comparison Between NPM and NPS

A comparison between the NPM and NPS models is provided in Table 1 below.

(Note: A table would typically follow, outlining the key differences between NPM and NPS. Key areas could include: focus on efficiency vs. collaboration, reliance on market-driven methods vs. public value creation, centralized vs. decentralized decision-making, and individual-focused accountability vs. collective social responsibility.)

Table 1. Differences between the NPM model and the NPS model (own creation).

NPM model	NPS model
Efficiency (focused on productivity and cost reduction)	Efectividad (enfocado en las personas y en el impacto sostenible del resultado)
Unitary vision of the State	Visión MACRO colaborativa
Business vision and competition	Co-production of the Public Good
Neoliberal Public Administration (client citizen)	Neo social Public Administration (collaborative citizen)
Economic-rational man control based on compliance with standards and procedures	Social – spiritual man knowledge, values, supremacy of public interest
Management (position policy)	Shared leadership

Transitioning from New Public Management (NPM) to New Public Service (NPS)

As shown in Table 1, the shift from the NPM model to the NPS model involves a significant transformation in the approach to public administration. This transformation includes moving from competition to collaboration, shifting from isolated management to shared leadership, and evolving from a short-term, unitary vision to a long-term, collective vision. Additionally, the focus moves from being centered on production to being centered on people and their contributions to achieving positive, sustainable outcomes.

Andion (2023) clarifies that shared governance, although important, is not a panacea that solves all the issues of democracy. It does not emerge from a process devoid of mutual trust or conflict, as many theorists might suggest. Moreover, governance does not arise merely from the state opening "windows of opportunities" for society to co-produce public policies or from the inherent connectivity and interface of networks as opposed to hierarchical structures. The desire to listen to the voice of the people typically arises when the government faces crises of governance (a lack of societal support) or crises of governability (a lack of support within the government itself).

It is important to note that the intent is not to replace the NPM model with the NPS model, but rather to complement it. The NPM's focus on private sector principles has left a legacy that must be addressed. It is not only possible but desirable to reconcile the competitive aspects of NPM with the collaborative principles of NPS, integrating efficiency (minimizing costs) with effectiveness (maximizing results with focus on the public target's point of view) and combining the economic-rational man with the social-spiritual man.

The New Public Service model (Denhardt and Denhardt, 2003) seeks to advance this understanding of public administration by bridging the gap between these competing models. According to Garson and Overman (1993), Public Administration is an interdisciplinary field that captures the tensions between rational, instrumental orientations (aimed at increasing effectiveness and efficiency) and political orientations (focused on values and promoting the public interest). The first part of this definition aligns with the goals of bureaucratic models and NPM, while the second half, which emphasizes values and the public interest, aligns with the NPS model.

According to Andion (2012), the NPS not only seeks to improve state performance in providing public services but also aims to create new patterns of relationship between the state and society, promoting the co-production of the public good. This contrasts with the state-centric and NPM approaches. Denhardt (2012) suggests that the rationalization of society under NPM led to a situation where human values like freedom, justice, and equality are no longer central to public action, being replaced by cost-benefit analyses and means-ends calculations. In contrast, NPS challenges the rational action approach of NPM by drawing on perspectives from phenomenology, critical social theory, and post-modernism.

Denhardt (2012) further argues that life in the post-modern world should highlight the interdependency between citizens and administrators, fostering a more productive public dialogue. This dialogue helps to establish the legitimacy of public bureaucracy, ensuring that public administration is responsive to the needs and concerns of society.

Denhardt and Denhardt (2007) assert that the NPS model overcomes the bureaucratic limitations of the traditional model by emphasizing the trust-based relationship between public administration (the technique) and government (the politics). The NPS demonstrates that collective knowledge, when properly collected and applied through knowledge management and cultural intelligence practices, leads to better outcomes. It places effectiveness as the cornerstone of democracy, respecting the public's opinion as the ultimate target of government actions.

As discussed, the NPS model aligns more closely with democratic systems where numerous actors influence state decisions. However, this does not negate the need for the efficiency and competitiveness elements brought by the NPM, especially in times of crisis. In the NPS model, both citizens and public servants prioritize the collective good over self-interest, adopting a broader and long-term perspective. This requires knowledge of public relations, a strong sense of community belonging, and a moral bond to the community, whose well-being is at stake.

If community foundations collaborate with the government to address global challenges—by connecting people to relevant causes, planning economic revitalization efforts, and fostering cultural change—the result could be the strengthening of democracy. Denhardt and Denhardt (2003) argue that two key themes underpin the NPS model: (1) promoting the dignity and value of public service, and (2) reaffirming the values of democracy, citizenship, and the public interest.

One of the practical applications of the NPS model is to pressure governments to open up space for the opinion of organized civil society, that is, with the capacity to contribute to greater effectiveness of public policies, particularly those that target society itself, such

as education, employment, housing, water and sanitation, public transport and health. A political implication of the NSP is that governments have greater difficulty in engaging in illicit business, particularly with the private sector or other governments, since participation and social control go hand in hand due to the need for ethics and morality for good relations between stakeholders. The most important economic implication is the analysis of results from the point of view of the citizen and not of the program's mentor or of a short-term cost-benefit approach.

Humanizing Public Service and the Role of Cultural Change

The shift towards public service based on shared governance and cultural change suggests that the attraction to public service should not be driven by financial incentives or job stability, but by the core values that underscore the human aspect of public service. These values—such as serving others, improving the world, ensuring safety, and upholding democracy—embody the true meaning of citizenship and public service. Public officials should be motivated by the sense of contributing to the common good, rather than by external rewards.

The process of changing national culture to embrace these values involves several steps:

1. **Studying Cultural Similarities and Differences:** Understanding the nuances of different cultures is key to promoting collaboration and reducing misunderstandings, both within a country and internationally.
2. **Managing and Directing Cultural Experiences:** This includes addressing the historical context of cultural differences, particularly the effects of colonization, and engaging in exchanges that expose individuals to new perspectives and practices.
3. **Synthesizing Cultural Insights:** By recognizing both positive and negative aspects of cultural differences, it becomes possible to create more inclusive and effective public policies.
4. **Coexisting Cultural Differences:** Encouraging the acceptance of diverse cultural practices and values within a single society allows for mutual respect and harmony despite significant differences.
5. **Applying Cross-Cultural Insights:** Individuals should be open to applying practices and values from other cultures that might improve their own societal context, based on the learning from different cultural experiences.
6. **Redefining Cultural Classifications:** Instead of viewing national cultures as merely a collection of subcultures, they should be seen as interconnected middle cultures, blending diverse perspectives into a cohesive whole.

Gerhart and Fang (2005) emphasize that cultural differences, when experienced and managed correctly, can lead to greater cultural similarities. As cultures interact and learn from each other, they develop shared experiences and environments that foster mutual understanding and cooperation. While this might seem idealistic, it is essential

to acknowledge that without a shift in values towards community well-being, societies—particularly in Latin America—may face increasingly severe and prolonged crises. Changing these values is crucial for addressing social issues such as violence and economic instability.

The Role of the Rule of Law and Citizen Participation in NPS

Investigating the Rule of Law is crucial in facilitating a more citizen-centric, social, democratic, and participatory public administration. The NPS model emphasizes the co-production of the public good, rooted in a collective understanding of the public interest and leadership that is value-based and oriented towards satisfying shared societal needs. Denhardt and Denhardt (2003) highlight that the NPS model enables collaboration through “instruments of collaboration” and a more transparent and inclusive model of the state. These instruments serve as vehicles for collective interests, fostering public participation. Mechanisms such as deliberative democracy and public policy networks help to create platforms for citizens to engage in policymaking.

However, the NPS model alone cannot address the challenge of effectively capturing and applying collective knowledge. While it provides mechanisms for popular participation, it must be coupled with integrated Knowledge Management (KM) and Organizational Intelligence (OI) practices. These practices—such as organizing, transferring, creating, analyzing, interpreting, and applying collective knowledge—are essential for the successful implementation of the NPS model. However, these practices will only be effective if preceded by a process of humanization through Shared Governance. This process ensures that public servants and citizens alike are guided by the integration of rational, cultural, emotional, and spiritual intelligences.

The success of the NPS model relies on this holistic approach, where the cognitive and emotional growth of individuals contributes to a deeper commitment to public service and the collective well-being of society.

However, the New Public Service (NPS) emphasizes social participation rather than social control. A possible explanation for this is the assumption that social participation naturally leads to social control. However, the Brazilian experience suggests otherwise.

In Brazil, social participation typically revolves around simple voting (agree/disagree) rather than meaningful discussions about key aspects such as indicators, objectives, goals, project timelines, and budget planning. This approach is especially problematic for initiatives that directly impact society, where measuring effectiveness (results from the target's perspective) is often more crucial than focusing solely on efficiency (cost-benefit analysis) or efficacy (results from the public action mentor's perspective).

As a result, social participation in Brazil appears to function more as a strategy to enhance governability—securing political and technical support for the government—rather than genuine governance driven by societal engagement. Citizens may believe they are participating meaningfully, but in reality, their involvement is limited and superficial.

Culture and Social participation in Brazil

Friendliness, to hide the lack of knowledge, was identified by Buarque de Holanda (1936) in the book *Roots of Brazil*, which was ratified by Gylberto Freire (2010 and 2015) and Caio Junior (1945). In Brazil, some critics have understood the impact of culture on

behavior. Freitas (1997), although recognizing the diverse and heterogeneous character of Brazilian culture, concluded that the national traits for an organizational analysis would be: hierarchy, personalism, cunning, sensuality and adventurous spirit. The profile of the typical Brazilian, outlined by Buarque de Holanda (1975) as a symmetrical opposition to the ascetic North American Protestant, has the following characteristics: personalistic individualism, pursuit of immediate pleasures, contempt for the community and long-term ideals. While this has changed somewhat in the last two decades, historically Brazil was not culturally or economically integrated with the other nations of the region. Many Brazilians would not even identify as Latin American. For over a century, Brazil vied for supremacy over South America. However, since the World Cup (2014) and the Olympic Games (2016) onwards, Brazil and Peru have become economic and social partners through a high level of corruption through the largest Brazilian company: the Odebrecht scandal in Brazil is one of the largest corporate corruption cases in history. The Mechanism is a Brazilian political drama television series created by José Padilha and Elena Soarez (2018), loosely inspired by true events, about a scandal erupts in Brazil during an investigation of alleged government corruption through oil and construction companies. José Padilha has to flee the country because it also revealed how the governor arms the favelas to prevent social cohesion against him. Neves Costa, Ferreira & Pontes de Campos (2024) explain that the “car wash” operation led by Judge Sergio Moro, the largest anti-corruption operation in Brazil that began in early 2014 and is due to expire in 2021, could only be compared to Italy’s “clean hands” operation, because the two cultures have many similarities (Bertonha, 2010). A vast and intricate web of corruption was gradually exposed, shaking the fragile democracy to its foundations (Neves Costa, Ferreira & Pontes de Campos, 2024). In 2021, the Supreme Court ruled that then-Judge Sérgio Moro acted biasedly in judging former President Lula, resulting in the annulment of evidence produced under his leadership in the Lava Jato case and the cessation of the operation.

Given the various meetings between the president and foreign minister with Russia, which Brazilians cannot understand since the OECD discovered that it is the country that believes most in fake news², the government decided to create a platform for social participation in order to change the mental model of Brazilian intellectuals, who despite not having access to knowledge, do not like this relationship with Russia, the two main mentors of BRICS+.

The platform <https://brasilparticipativa.presidencia.gov.br> presents four possibilities of social participation:

Public consultations, municipal meetings, conferences and intergovernmental processes.

In fact, it is a space for citizens to present their ideas, discuss and vote for proposals that they consider most relevant to improve Brazil.

However, data collection (participation) is done without the use of knowledge creation practices (knowledge management) and their application (organizational intelligence).

² https://www.oecd.org/en/publications/facts-not-fakes-tackling-disinformation-strengthening-information-integrity_d909ff7a-en.html

An example. By clicking on ”“plans” there is an option for participation³: The national culture plan in Brazil (beginning 17/10/2024 and closing 12/31/2024).

As we see, citizens can participate making suggestions on this plan.

In fact, the platform is structured by votes, such as the election of a ruler. This is precisely what happens in this tool of social participation built by the Brazilian Federal Government. As soon as the Internet user clicks on the word, this question appears, and there are only three options: I agree, disagree or skip the question:

The first is: indigenous and Afro-Brazilian cultures are essential to our diversity and should be prioritized in government investments. Etc.

However, in addition to there is no room to give their opinion and discuss ideas with other participants, there is no clear report on the purpose, goals, goals and indicators of this new culture plan and nor the Physical-Financial Planning Spreadsheet of this new National cultural plan⁴, making it difficult to participate in society.

A useful tool of knowledge management would be the Practice Communities – COPs because they organize the discussion by theme and avoid the avalanche of information we find on social networks. In that regarding organizational intelligence, the “Specialized Analysis” tool would be useful. This practice helps COPs in different ways. Firstly, the leader of each community is able to feed and facilitate debate because it dominates the theme and also focuses on synthesizing suggestions and criticism of the decision making. Suppose the discussion is about poverty. In the group there may be a homeless and doctor in poverty, one with more theoretical (explicit) knowledge and another with more practical, experiential (tacit) knowledge and this integration we saw in the previous section.

Sindermann (2024), when analyzing the Friday for Future Social Participation (FFF) movement, found that there is a positive relationship between the indication within a group and political participation.

Research seeks to know how people perceive themselves and their affiliation with the FFF group, considering social identity as a multidimensional concept.

However, according to Sinderman (2024) this identification is low. It should be noted that the FFF is organized through social networks where low confidence is common given the profiles created to persuade people without a real or very superficial connection, among them.

This can occur because the relationship of trust is very limited when there are no other projects. Trust arises through joint research, as they cause mutual growth among participants in social participation groups. This type of relationship further improves the process of sharing knowledge and experiences, as working on different topics facilitates

³ This option is available at https://brasilpartipativativa.presidencia.gov.br/processes?filter%5bwith_type%5d=3:

⁴ The Brazilian Government knows that that everybody has the conscience that the Brazilian's culture is very bad [identified by Buarque de Holanda (1936); Caio Junior (1945) and Gylberte Freire (2010, 2015),] and they need to change but they also know that nobody wants to do nothing for this change. By putting the topic in the social participation plataform they can easily manipulate the people who would like to clean their egocentric minds by giving suggestions to the government look after the minorities (black and indigenous).

communication and participation in government projects.

Fritsche et al. (2013) demonstrate that the social identity model for pro-environmental action (SIMPEA) is important because it describes how the social identity process impacts behaviors in response to an environmental crisis.

Sinderman (2024) also found that the association between different group identification components and various types of political participation through social networks is positive, but it is possible that the magnitude of these relationships is different between components and types, more specifically, if the profile The Internet user is simply in the group, or if it is following its discussions or if it has significant participation in the discussions and works of the group.

Given this, it is suggested that the Brazilian government contact the civil society organized by neighborhoods where you want to implement a public project for two reasons:

1. It is the target audience itself, the beneficiary of the project and, therefore, the only one capable of contributing effectively.
2. It is a group already organized and chosen by the community itself, and is already in tune through a previously built communication network, and mainly because they already solve other issues together.
3. They can monitor the progress of project execution as they live on site and thus continue to suggest improvements.

Nikitina (2021) found that toward the active development of the digital society after COVID-19 started in China-Italy, the issues of digitalization are gaining more and more popularity. The article analyzes the regulatory, financial, personnel, organizational and managerial aspects of effective social control in the public administration system based on sociological survey and experts' interviews/ In conclusion the author offers practical digital solutions to improve the effectiveness of social control.

The ease in the process of collecting collective knowledge does not directly imply the opening of space (agenda), let alone consider this knowledge in government action.

In fact, social control needs to be based on knowledge (English culture and its former colonies) and intelligence (German culture) within the projects that the government "calls society" to participate and not in data (Latin culture) and even Information (American culture). Given this, if the government chooses only programs without any agenda for its application¹, such as this above – New National Culture Plan – and still uses the vote methodology and not discussion and decision making, it is impossible to change something in the country, which Lives the crisis of deaths, arrests and impeachments of presidents.

Nikitina (2021), in her research applied in Russia, is more worried about Technological's skills when affirmed "To effectively involve citizens and rationalize their participation in the process of governing the state, digital social control skills are needed – digital civic

competencies that allow a person to participate in political life in the online space and orient him towards this”. However, as Brazil, Russia is not a democratic country and therefore the governments are not interested in the involvement of the civil society only the military society.

Alvarez (2004) suggests that Michel Foucault offers valuable insights into the current discussion on social control. While Foucault is often regarded as a key figure in studies on modern social control mechanisms, he does not explicitly use this term extensively. Instead, he adopts a more complex perspective, focusing on power practices—forms of power that go beyond mere instrumental and functional control—to shape behaviors, knowledge systems, and subjectivity (Lacombe, 1996). Foucault’s notion of disciplinary power centers on the “training” of individuals through mechanisms such as hierarchical observation, normalizing sanctions, and examinations. Hierarchical surveillance, in particular, exerts power by making individuals feel perpetually watched (Alvarez, 2004).

In collectivist cultures, this form of control is amplified, as conformity is driven by fear and a lack of understanding of how to act independently. Divergent behavior is quickly identified and suppressed to prevent challenges to the government-defined cultural norms. In some regions, particularly in Latin countries or those lacking cultural intelligence, like Ukraine, political opposition often appears artificial—staged by governments themselves as a facade to attract international funding or control public perception.

Gilles Deleuze (1992) expands on Foucault’s ideas, arguing that contemporary societies have moved beyond being strictly “disciplinary societies” to become “control societies.” In these modern contexts, traditional mechanisms of confinement are increasingly replaced by electronic and informational technologies for monitoring and regulating populations. This shift can be observed in the transition from pandemic-era restrictions to commercial-military conflicts, reflecting broader changes from capitalist to authoritarian or communistic control frameworks.

3. METHODOLOGY

A systematic literature review was used as an exploratory and analytical technique to collect relevant knowledge.

Using a comparative technique, the references were interpreted and synthesized, which allowed establishing the necessary steps that allowed the creation of the proposed Literature Review methodology.

The Culture-Knowledge-Intelligence Model

The Culture-Knowledge-Intelligence (CKI) framework, as described, emphasizes the intricate relationship between culture, knowledge, and intelligence within an organization. According to Choo (1996), an organization possesses three types of knowledge:

1. Tacit Knowledge: This is embedded in the expertise and experience of individuals and groups. It is often difficult to codify and typically resides in people’s minds, shaping their behaviors and decisions.

2. Explicit Knowledge: This is rule-based knowledge that is codified in organizational rules, routines, and procedures. It is easily communicated and documented,

typically through manuals, reports, and databases.

3. Cultural Knowledge: This knowledge is expressed through the assumptions, beliefs, and norms that members of the organization use to assign value and significance to new information or knowledge. It reflects the underlying cultural values that shape the way people interpret and process information.

Knowledge Conversion and Organizational Innovation:

As Nonaka and Takeuchi (1995) point out, new knowledge is created through a process of knowledge conversion. This process is crucial because it bridges the gap between tacit and explicit knowledge, enabling the organization to innovate and evolve. The organization continuously generates new knowledge by converting the personal, tacit knowledge of individuals—who develop creative insights—into shared, explicit knowledge that can be applied collectively to develop new products, services, or innovations.

The Culture-Knowledge-Intelligence (CKI) Framework:

The CKI framework helps to understand the impact of culture on knowledge and the reciprocal influence of knowledge on intelligence. Culture shapes how knowledge is created, shared, and utilized, influencing how people perceive and act on information. In turn, the collective intelligence of the organization is shaped by the knowledge available and how it is processed and applied within the cultural context.

Empirical Testing of Hypotheses:

The research empirically tests three hypotheses (as outlined in Table II). These hypotheses aim to explore the relationships between the three dimensions of CKI and their impact on organizational performance, innovation, and decision-making.

Table 2. Hypotheses in CKI model.

HYPOTHESES	SOURCES	RESULTS AND GAPS TO BE FILLED
H1. Culture influences Knowledge	De Vita (2001), Kennedy (2002) and Tweed and Ledman (2002) suggested that by influencing the way individuals perceive, organize and process information, the way they communicate with others and the way they understand, organize and generate knowledge and solve problems, culture is inextricably limited to learning approaches and preferences.	SUPPORTED
H2. Culture influences Intelligence	The relationships between different aspects of intelligence can vary across cultures, with correlations that are positive in one setting proving to be negative in another. Can research provide an understanding of intelligence that is not so culturally constrained? (Sternberg & Grigorenko, 2004).	SUPPORTED
H3. Knowledge influences Intelligence	Intelligence is knowledge in action and its three pillars are prediction, strategy and action (Rothberg and Erickson, 2004).	SUPPORTED

Culture impacts not only knowledge and intelligence. For example, organizational culture also has a strong impact on organizational performance.

Organizational Culture influences the behaviour of people and, thus, influences employees' performance (Ibrahim, Boerhannoeddin, & Kayode, 2017).

There are some authors who think that the transition from knowledge to intelligence is automatic, which is not true given that some countries have a large amount of knowledge and difficulty in applying it due to low levels of cultural intelligence due to historical and geographical reasons.

Bolyard (2020) found that training, immersive experiences, and exposure to other cultures can enhance cultural intelligence (CQ)⁵. Laurie Paarlberg and James Perry, in their article review "Values Management: Aligning Employee Values and the Goals of the Organization" published in *American Public Administration*, emphasize: "Employees are motivated by broad social and cultural values and respond to organizational values and management efforts, such as expectation and incentive systems, when these align with their existing values" (Paarlberg & Perry, 2007). This suggests that fostering alignment requires more than just top-down communication of organizational values. While learning through doing or reading is common, an equally powerful approach involves learning through comparison. Understanding different values, beliefs, assumptions, and limitations can help identify cultural weaknesses and inspire positive change.

Metacognition, cognition, motivation, and behavior are the four components that make up Cultural Intelligence (Ang & Van Dyne, 2008). Metacognitive CQ, reflects the level of conscious cultural awareness of an individual during cross-cultural interactions (Verwoerd, 2024).

Cultural intelligence can enhance employees' work performance by helping them navigate the challenges of diverse cultural and competitive working environments. To attract more foreign business and investments, many private and public sector organizations worldwide have recognized the need for a cross-culturally competent workforce.

According to Hartini and Fakhrorazi (2019) as a result of the application of Cultural Intelligence the employees are better connected and they adapt effectively in global business settings. This can be achieved through proper guidance, training, and development programs.

It is important to note that cultural intelligence can help former British colonies become less dependent on neighboring countries, as seen in relationships such as the United States-Canada, Australia-New Zealand, and Nigeria-Cameroon. These examples demonstrate that knowledge alone does not equate to intelligence without practical experience with other cultures. In fact, the absence of direct cultural engagement often leads to isolation, which can result in high societal rigidity, as observed in Japan⁶.

⁵ <https://publicaffairs.ucdenver.edu/news-and-events/news-article/faculty-opeds/missing-the-mark-the-urgent-need-for-cultural-intelligence-in-united-states-public-administration>

⁶ <https://ajrc.crawford.anu.edu.au/department-news/10416/empire-suicide-how-can-we-reduce-tragedy-thinking-through-economic-incentives>

According to Choo (2001) shared meanings and purposes, as well as new knowledge and capabilities converge on decision making as the activity leading to the selection and initiation of action. However, it is important to note that knowledge is socially constructed with collaborative activities, but access to that knowledge does not mean success in decision-making (Rothberg and Erickson, 2004). Intelligence is knowledge in action and its three pillars are prediction, strategy and action ((Rothberg and Erickson, 2004).

RESULTS AND DISCUSSION

5. CULTURAL INTELLIGENCE AND KNOWLEDGE MANAGEMENT FOR A POPULAR PARTICIPATION (NPS MODEL)

The transition from the New Public Management (NPM) model to the New Public Service (NPS) model indeed hinges on a significant cultural change, one that emphasizes the importance of collective knowledge and collaborative governance. This process involves a transformation in how both the public sector and society view and engage in the process of public administration.

Culture's Impact on Knowledge and Intelligence

Culture plays a critical role in shaping how individuals and organizations process, manage, and utilize knowledge. Martin (2002) emphasizes that culture is the shared assumptions, beliefs, values, and traditions within a specific geographic region or community. This shared culture influences how people interact, solve problems, and contribute to collective decision-making processes.

In the context of public administration, cultural change is essential because it shapes the approach to governance, collaboration, and collective action. When the culture evolves toward valuing shared knowledge and participatory governance, it encourages more effective and sustainable public service delivery.

Intelligence in Cultural Context

Intelligence, as defined by Sternberg & Grigorenko (2004), is the ability to use cognitive abilities to improve well-being within one's cultural context. This means that intelligence is not a one-size-fits-all concept; rather, it is deeply influenced by the values, norms, and practices of a given culture.

- Cultural Intelligence (CQ) is an individual's ability to function effectively in culturally diverse settings. According to Ang et al. (2007), cultural intelligence is crucial because it enables people to navigate the complexities of different cultural environments by being aware of and respecting differences.

This concept is especially relevant in the context of public administration, where governments and public service workers must engage with diverse populations. High CQ allows public servants to understand and bridge cultural divides, which enhances the effectiveness of policies and services.

Alifuddin and Widodo (2022) states that teachers who have knowledge about cultures,

such as what culture is, how cultures are different, and how culture influences behavior and skills, will tend to be open and empathic and uphold equality principles in fostering communication with other people (including students) from various cultural backgrounds.

Cultural Intelligence's Impact on Public Service

Grosch, Boonen, and Hoefnagels (2023) highlight that individuals with high Cultural Intelligence are more attuned to their own and others' values. They understand the relationships between values, behaviors, and cultural backgrounds, which helps them develop healthier relationships and achieve better results in their interactions with others. These traits are vital for public servants who need to engage citizens from diverse cultural backgrounds and ensure that public policies are inclusive and effective.

Additionally, recent studies have shown the positive effects of cultural intelligence on various aspects of organizational behavior:

- Employee skills (Morin & Talbot, 2023)
- Leadership effectiveness (Yalçınıyğit & Aktaş, 2023)
- Workers' health and fulfillment (Min et al., 2023)

Cultural Intelligence and Quality Social Participation

For public programs and projects to be more effective, society's participation is key. However, this participation must be based on a strong citizenship background—a real commitment to the community rather than seeking individual advantage. Cultural intelligence plays a vital role in fostering this sense of collective responsibility, as it enables people to understand different cultural practices, values, and behaviors, and to act in ways that support the public good.

Knowledge Management practices, such as knowledge creation, are crucial for facilitating effective participation and collaboration. The PGCN (Popular Participation and Cultural Change Model), illustrated in Figure 2, would provide a framework for applying the NPS in public administration. This model emphasizes the need for:

1. Cultural change within government and society to encourage shared knowledge and collaboration.
2. Participation from citizens with a true commitment to the public interest, not individual benefits.
3. The use of Cultural Intelligence and Knowledge Management practices to improve the effectiveness and sustainability of public policies and services.

The Role of Knowledge Management in NPS

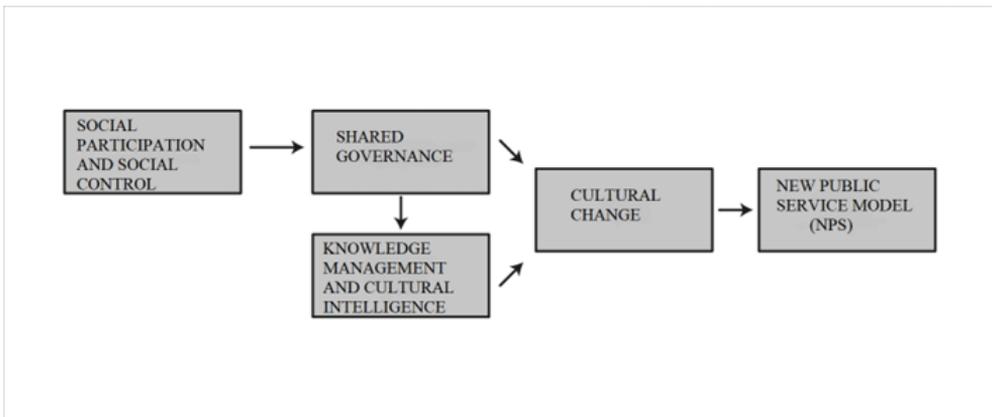
The New Public Service (NPS) model requires a systemic shift towards greater collaboration and shared leadership. By integrating Knowledge Management practices (e.g., knowledge creation, transfer, and application), it ensures that the collective knowledge of society is harnessed to address public challenges more effectively. However, for such practices to succeed, they must be coupled with a shift in cultural mindset within public organizations and the population at large.

In conclusion, cultural intelligence and participation are crucial for the successful

application of the NPS model. By fostering cultural change and encouraging the development of both individual and collective intelligence, public administrations can become more responsive, inclusive, and effective in serving society.

The PGCN model demonstrates that a more holistic governmental view of the world, based on internal and external collaboration, generates a new awareness regarding the supremacy of the public interest. The PGCN model is a propagator of change based on corporate social responsibility, on changing knowledge and experience, which is potentially intelligence. Figure 2 presents the Popular Participation and Cultural Change model for applying the NPS in Public Administration – PGCN.

Figure 2. The PGCN model.



Source: Own elaboration.

As can be seen in figure 2, participation and social control impact shared governance, as it is formed precisely by the integration of collective knowledge with government action. Shared governance, in turn, requires knowledge management practices and cultural intelligence practices. This creation and application of new knowledge provides the cultural change necessary to move from the NPM model to the NPS model, as a Public Administration model focused on the public interest.

A practical application of the PGCN model in Public Administration would likely only be feasible in a truly democratic country—something not yet documented in academic literature.

Even if a government were genuinely committed to democracy and launched campaigns to engage the population in its projects and programs to harness collective knowledge, it would face significant internal challenges. Convincing public employees to adopt a culture of knowledge sharing and application is difficult, as they may perceive it as a threat to their positions or power. The PGCN model, therefore, places cultural change as the fifth step, beginning instead with the population’s demand for social participation and control. However, this is unlikely to happen, as the public is often preoccupied with sharing information on American social networks. This influence has even spread to traditionally

knowledge-driven nations such as England and its former colonies, Japan, and intelligence-driven countries like Germany, due to complex socio-historical, geographical, and cultural factors.

CONCLUSIONS

The ex-president of Brazil, Dilma Rousseff, had an excellent idea of creating the Dialoga Brasil and Dialogos Federativos Programs. However, due to the non-use of Knowledge Management and Cultural Intelligence practices, it ended up generating an avalanche of information that is part of the United 'States' national cultural model due to the American Giants (Microsoft, Google, X, Facebook, Instagram mainly). Given the lack of access to and desire for knowledge in South America, Russia and China are making a party in the Continent and controlling all presidents, without any exception.

However, a new model of Public Administration can make the plans of these new communist governments more difficult, in particular the fight between Venezuela and English Guiana and the fake fight between Venezuela and Colombia, since it will necessitate the participation of organized civil society in their public projects and allow part of the population to understand the game of the new system.

Obviously, the current public administration model, NPM, hinders participation and social control initiatives as it is based on the competitiveness of the private sector and the isolation of knowledge at the top of the government.

Therefore, it is essential to change to the NPS collaborative model in order to change the behavior of public agents, particularly in the treatment of citizens.

The State does not have sufficient knowledge and resources to solve contemporary problems and that is why it needs to rely on the intelligence of the already industrialized countries of the old world.

As a suggestion for future studies, it would be very important to analyze how KM and IC practices collect and apply society's knowledge, especially in public projects whose target audience is society itself. Future studies could benefit from interviewing multinational company employees and embassy representatives to better understand the impact of cultural intelligence on their projects. A comparative analysis between England, which possesses extensive knowledge due to its history of colonial domination, and Germany, which demonstrates greater intelligence due to its post-war image rehabilitation efforts, would be insightful. This comparison could shed light on the influence of cultural intelligence on spiritual intelligence—characteristics such as ego control, humility, and sensitivity—which become particularly critical during times of war (strong cultures dominating weak cultures).

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Ecoinnovación y tecnología como herramientas de competitividad en Micro y Pequeñas Empresas de Torreón, Coahuila

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ABSTRACT

Innovation is a very important quality in human society and fundamental to the success and growth of companies, even on a global level, as this factor is a determinant of competitiveness. On the other hand, sustainability has impacted the perception of companies, as society in general is more concerned about the environment, and economic entities are able to add value to their products and services, improving their positioning. Integrating the sustainable development goals into innovation is essential, as sustainability challenges present great potential for innovation or the creation of new businesses. Eco-innovation, defined as the creation of products and processes that promote sustainable development and the responsible use of natural resources, is empowered by technology, as it not only optimizes operational efficiency and reduces costs, but also opens new markets and enhances a company's reputation. The objective of this research is to explore how eco-innovation and technology are essential tools for improving the competitiveness of micro and medium-sized enterprises (MSMEs). Some of the research findings are that, despite limited financing, more and more companies are convinced of the benefits of being sustainable and are investing, seeing advantages in cost reduction and the impact on competitiveness.

Keywords: Ecoinnovation, Competitiveness, Technology, Torreón.



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Declaración de confidencialidad y privacidad

La información utilizada en este estudio no está sujeta a ninguna obligación de confidencialidad ni está protegida por secretos comerciales, ya que es información de dominio público, ha sido desarrollada de forma independiente por los investigadores, o los datos son agregados y anónimos.

Declaración de conflicto de interés

Los autores declaran no tener ningún tipo conflicto de interés con alguna entidad o institución, con respecto a este trabajo de investigación.

1. INTRODUCCIÓN

Actualmente las MIPES tienen que abordar los problemas desde una perspectiva diferente, en donde tienen que adaptarse a los cambios e innovar y ser más sustentables y entrar a la transformación digital. El siglo XXI se caracteriza por desafíos ambientales importantes, como el calentamiento global, que obligan a las empresas a adoptar métodos de fabricación y prácticas más sostenibles (Baeshen, Soomro y Bhutto, 2021).

Al mismo tiempo, se observa un cambio de paradigma económico global, cambiando de un “crecimiento con altas emisiones de carbono” hacia un “desarrollo verde” y de un enfoque en la “recuperación de cantidad” a una “recuperación de calidad”, siendo la digitalización la principal fuerza impulsora de esta transición (Fu y Xu, 2024).

La reciente pandemia de COVID-19 aceleró significativamente el proceso de transformación digital en todas las industrias, principalmente por la necesidad de sobrevivir y adaptarse a las circunstancias y reforzando la importancia estratégica de las innovaciones verdes y digitales (Martínez, Sánchez, Marco y Akram, 2024). La coincidencia de las crisis ambientales posiciona a la sostenibilidad y a la tecnología como pilares fundamentales para la supervivencia y el crecimiento de las MIPES.

Las MIPYMES son la base de las economías globales, en la región de la Asociación de Naciones del Sudeste Asiático (ASEAN), por ejemplo, constituyen más del 99% de todas las empresas, desempeñando un papel fundamental en la generación de empleo y fomentando un crecimiento económico inclusivo (ERIA y OECD, 2024). A nivel mundial, estas empresas representan aproximadamente el 90% de los negocios y contribuyen significativamente al ingreso nacional (hasta el 40% en economías emergentes) y al empleo (más del 50% en todo el mundo) (Kanan y Gambeta, 2025).

La ecoinnovación se define, de manera general, como la creación, producción y desarrollo de productos y procesos que no solo estimulan el crecimiento económico, sino que también promueven activamente el desarrollo sostenible y optimizan el uso de los recursos naturales, es decir, implica que el desarrollo de productos y los procesos utilizados disminuyan el deterioro ambiental. (OECD Eurostat, 2018) La ecoinnovación, también llamada innovación verde, representa un enfoque transformador que prioriza la sostenibilidad ambiental junto con los objetivos económicos y sociales tradicionales (Tegethoff, Santa, Bucheli, Cabrera y Scavarda, 2025).

El creciente avance y accesibilidad de las tecnologías digitales facilitan significativamente el diseño y la implementación de las ecoinnovaciones, permitiendo a las MIPES abordar de manera más efectiva las presiones de protección ambiental. (Barragán, 2022) La ecoinnovación, sobre todo cuando se integra con la tecnología digital, crean sinergia y se convierte en un enfoque empresarial estratégico que vincula la viabilidad económica con beneficios ambientales y sociales, haciéndolos más competitivos.

A pesar de los beneficios evidentes, las MIPES enfrentan barreras significativas, dentro de las que se encuentran las limitaciones financieras, brechas de conocimiento y habilidades, resistencia cultural y complejidades regulatorias, sin embargo, la creciente demanda de productos y servicios sostenibles, así como algunos apoyos gubernamentales y fiscales, representan oportunidades estratégicas (Tegethoff, Santa, Bucheli, Cabrera y Scavarda, 2025).

Esta investigación tiene como objetivo analizar de manera integral cómo la ecoinnovación y la tecnología sirven como herramientas fundamentales para mejorar la competitividad dentro de las micro y pequeñas empresas (MIPES), identificando los beneficios, los desafíos que enfrentan y las implicaciones políticas necesarias para fomentar su implementación.

2. REVISIÓN DE LITERATURA

Para comprender la dinámica de la ecoinnovación y la tecnología en la impulsión de la competitividad de MIPES, es necesario tener un marco teórico en donde se explore las diferentes definiciones de ecoinnovación, el papel que juega la tecnología digital y los fundamentos teóricos que sustentan su impacto en la competitividad sostenible.

- **Comisión Europea (2007):** La Comisión Europea en su “Programa marco para la competitividad y la innovación” del 2007, definió a la ecoinnovación como “cualquier forma de innovación que represente un progreso significativo y demostrable hacia el objetivo del desarrollo sostenible, mediante la reducción de los impactos ambientales o el logro de un uso más eficiente y responsable de los recursos naturales, incluida la energía” (Tegethoff, Santa, Bucheli, Cabrera y Scavarda, 2025), este concepto complementa la definición general de innovación con el enfoque específico de la reducción del impacto ambiental basado en la agenda política del desarrollo sostenible.

- **Organización para la cooperación y el Desarrollo Económico (OCDE):** La OCDE afirma que la característica principal de la ecoinnovación es su eficacia en la reducción del impacto ambiental, implica la creación o implementación de productos (bienes y servicios), procesos, estrategias de marketing, estructuras organizativas y arreglos institucionales nuevos o significativamente mejorados que puedan ser medibles en la sostenibilidad ambiental en comparación con las alternativas existentes. Una implicación crucial de la definición de la OCDE es que la motivación para ecoinnovar puede ir más allá de las preocupaciones puramente ambientales, ya que se pueden considerar otras cuestiones como la reducción de costos asociados con la gestión de residuos. Además, la OCDE enfatiza que la ecoinnovación puede ser tanto tecnológica como no tecnológica, abarcando cambios en la estructura organizativa o la estrategia de marketing, lo cual es importante y accesible para las MIPES (Tegethoff, Santa, Bucheli, Cabrera y Scavarda, 2025).

Es importante destacar que el beneficio ambiental puede ser tanto el objetivo principal de la innovación como el efecto secundario no intencionado. De acuerdo con Grazzi, Sasso y Kemp (2019), las innovaciones verdes pueden categorizarse en:

- **Innovación verde de producto:** que son bienes o servicios nuevos o renovados con mejoras ambientales

- **Innovación verde de proceso de negocio:** que son procesos utilizados dentro de la empresa nuevos o renovados con mejoras ambientales, incluyendo las innovaciones organizacionales y de marketing.

Las MIPES, que a menudo tienen presupuestos limitados para la investigación y desarrollo, pueden perseguir ecoinnovaciones no tecnológicas, como la optimización de procesos internos para reducir residuos o la implementación de estrategias de marketing verde, para lograr objetivos de sostenibilidad y obtener ventajas competitivas, así, con estas opciones, se hace que la ecoinnovación sea accesible y adaptable para el sector de las MIPES.

2.1 El papel transformador de la tecnología digital

Una de las fuerzas principales de la innovación verde es la digitalización, ya que puede lograr un desarrollo de alta calidad para las empresas en el entorno global actual (Fu y Xu, 2024).

La tecnología digital mejora la capacidad de las empresas para realizar innovaciones verdes, dándole más importancia a la “calidad” que a la “cantidad” de las mismas, además, ayuda eficazmente a mitigar las limitaciones de financiamiento e información que a menudo obstaculizan a las MIPES. El efecto observado de “calidad sobre cantidad” de la tecnología digital en la innovación verde significa una evolución estratégica (Fu y Xu, 2024). Esta mejora es particularmente ventajosa para las MIPES que buscan una diferenciación genuina y la creación de valor a largo plazo. La mejora de la calidad de la innovación verde es crucial porque permite a las MIPES ir más allá del cumplimiento básico o la “ecopostura” hacia soluciones verdaderamente efectivas de problemas ambientales y sociales, además, es vital para construir una marca sólida, mejorar la reputación y crear ventajas competitivas difíciles de imitar por los rivales (Wu, Cheng y Yang, 2024).

Por otra parte, la competitividad sostenible es un concepto holístico que integra los factores que determinan las ventajas competitivas tradicionales con estrategias de gestión diseñadas para asegurar tanto la eficiencia económica como la ambiental frente a los requisitos globales modernos. (Mick, Kovaleski y Chirolì, 2024) Las innovaciones tecnológicas son determinantes claves de la competitividad sostenible, ya que las entidades logran adaptarse a cambios adversos, desafíos y amenazas, contribuyendo así a la competitividad a largo plazo (Hamdouna, y Khmelyarchuk, 2025).

La competitividad sostenible para las MIPES no se trata únicamente de la supervivencia en una perspectiva competitiva, sino de prosperar activamente integrando lo económico, ambiental y social, transformando así los desafíos ambientales y sociales en oportunidades estratégicas. La definición de competitividad sostenible vincula a la ventaja competitiva con la eficiencia económica y ambiental. (Siegel, Antony, Govindan, Garza-Reyes,

Lameijer, Samadhiya, 2022) Para las PIMES, esto implica pasar de una postura reactiva a una proactiva, adaptándose a los cambios futuros regulatorios, escasez de recursos y cambios en las preferencias del cliente.

2.2 Pilares del desarrollo sostenible y su aplicación en el contexto empresarial mexicano

El desarrollo sostenible es un concepto fundamental en la búsqueda de un equilibrio entre el progreso socioeconómico y la protección del medio ambiente. Su definición es acuñada en 1987 por la Comisión Mundial sobre el Medio Ambiente y el Desarrollo (conocida también como Comisión Brundtland), lo describe como aquel que “satisface las necesidades de la generación presente sin comprometer la capacidad de las generaciones futuras para satisfacer sus propias necesidades”, así mismo, esta visión tiene tres pilares interdependientes: el económico, el social y el medioambiental (Cámara de diputados, 2023).

De acuerdo con el documento “Desarrollo sustentable y sostenible” elaborado por la Cámara de diputados (2023), esta interconexión da lugar a una perspectiva holística, donde cada dimensión es indispensable para el logro de un desarrollo genuino y duradero como se ve a continuación:

a. La dimensión económica, también conocida como economía sostenible, se centra en fomentar un crecimiento inclusivo y equitativo, su objetivo es aumentar el bienestar social mediante la promoción de un consumo responsable y el fomento de empresas que demuestren un compromiso con el medio ambiente y la sociedad. El propósito primordial de esta dimensión es reducir la pobreza y asegurar un desarrollo de calidad para las generaciones actuales y futuras, sin comprometer la disponibilidad de los recursos del planeta.

b. La dimensión social busca promover una sociedad con igualdad de oportunidades en áreas fundamentales como la educación, la salud y el empleo, implica fomentar la colaboración comunitaria y garantizar así una calidad de vida satisfactoria para todos los ciudadanos.

c. La dimensión ambiental enfatiza el uso adecuado de los recursos naturales, la protección del medio ambiente y la preservación del equilibrio ecológico, esto se traduce en la minimización de residuos, la reducción de emisiones contaminantes y la garantía de que los recursos naturales se utilicen de manera consciente y responsable.

El en contexto mexicano, la integración de estos pilares se ha materializado a través de diversos instrumentos, uno de esos instrumentos son las Normas de Información de Sostenibilidad (NIS), elaboradas por el Consejo Mexicano de Normas de Información Financiera (CINIF) en el 2024 y cuya vigencia comenzó en enero 2025, dentro de estas Normas encontramos la NIS A-1 que proporciona un marco conceptual para la preparación y divulgación de información sobre la sostenibilidad, aplicable incluso a empresas no públicas. Este marco incluye 30 indicadores de sostenibilidad (IBSO), de los cuales 21 son cuantitativos y 9 cualitativos, organizados en las áreas ambiental, social y de gobernanza (ESG). La implementación de estas normas permite a las empresas identificar y evaluar eficazmente los riesgos y oportunidades relacionados con la sostenibilidad, lo que, a su vez, contribuye a mejorar su reputación y asegurar el cumplimiento de las regulaciones vigentes (CINIF, 2024).

La formalización de los informes de sostenibilidad a través de marcos como las NIS representa una maduración significativa de la agenda de sostenibilidad en México, marcando una transición de iniciativas voluntarias hacia una responsabilidad corporativa más estructurada, medible y transparente.

Esta evolución se observa en cómo el concepto del desarrollo sostenible ha pasado de una definición teórica global a su incorporación en el marco jurídico y normativo mexicano (Cámara de diputados, 2023). La importancia de las NIS A-1 radica en que proporcionan estándares específicos y medibles para la divulgación de información ESG, incluso para empresas no públicas, esto implica que las empresas no solo son incentivadas, sino que se les proporciona una metodología estructurada para rastrear y reportar su desempeño en sostenibilidad. Este cambio de intenciones generales a informes concretos y verificables es un avance sustancial en la rendición de cuentas corporativas, permitiendo una mejor identificación de riesgos y oportunidades, mejorando la reputación de las empresas y facilitando el cumplimiento normativo, impulsando así a las PYMES hacia un enfoque más integrado y estratégico de la sostenibilidad (CINIF, 2024).

2.3 La economía circular como paradigma de ecoinnovación

El modelo económico lineal tradicional, caracterizado por el ciclo de “tomar, fabricar y desechar”, ha conducido a una explotación indiscriminada de los recursos naturales y a la generación de volúmenes significativos de residuos y contaminación, este enfoque ha demostrado ser insostenible a largo plazo, generando desequilibrios ambientales y sociales (Reséndiz, 2024).

La ecoinnovación, bajo el paradigma de la economía circular, adquiere un enfoque de rentabilidad económica buscando en todo momento, reincorporar o reaprovechar los recursos con una visión inteligente sostenible e integradora. La implementación de la economía circular exige un replanteamiento de cómo se producen, consumen y desechan los productos y servicios. Los beneficios de adoptar este enfoque incluyen el aumento de márgenes de ganancia, la rentabilidad a mediano y largo plazo, la optimización de la eficiencia y la creación de nuevas oportunidades de negocio (Agencia verde, 2024).

El énfasis en los principios de la economía circular representa un cambio estratégico significativo, pasando de un control de la contaminación a un rediseño sistémico dentro de las MIPES mexicanas, ya que esta perspectiva, posiciona a los residuos como un recurso valioso y fomenta la generación continua de valor. El modelo tradicional de gestión ambiental casi siempre se centra en mitigar la contaminación una vez que ya ha sido generada, por el contrario, la economía circular busca fundamentalmente “optimizar el uso de los recursos” y “minimizar el uso de insumos y recursos, así como reducir la generación de desechos y contaminación” a través de prácticas integradas en todo el ciclo de vida del producto, desde el diseño hasta la recuperación. Este cambio representa un giro único, en donde los residuos ya no se consideran un problema a eliminar, sino un “capital secundario útil” (Molina, palos y Morales, 2024).

Esta gestión proactiva de las empresas, conecta la sostenibilidad con el centro de las operaciones empresariales, lo que no solo genera beneficios ambientales, sino también una mayor rentabilidad económica y nuevas oportunidades de negocio, transformando así

la percepción de los residuos de un pasivo a un activo (Agencia verde, 2024).

La ecoinnovación conduce al desarrollo de procesos operativos mejorados y más eficientes, lo que a su vez se traduce en una reducción de la contaminación y una mayor eficiencia de los recursos en toda la empresa. La minimización de recursos materiales y la optimización de la utilización de los recursos naturales son aspectos fundamentales que producen tanto beneficios ambientales importantes como ventajas económicas tangibles para las empresas (Tegethoff, Santa, Bucheli, Cabrera y Scavarda, 2025).

Como ya se había mencionado anteriormente, las tecnologías digitales como la IA y la IoT desempeñan un papel crucial en la optimización de procesos internos, la mejora de la gestión de los recursos de la empresa y la reducción de la generación de residuos, (Fu y Xu, 2024) por lo que la aplicación de la ecoinnovación junto con la tecnología digital, facilita el cambio radical en sus modelos de producción, lo que conduce a reducciones de costos, facilidad de adaptarse a situaciones adversas y en general ser más sostenibles.

La ecoinnovación mejora directamente el prestigio de la marca, fomenta mayor lealtad del cliente y genera una mayor confianza de las partes interesadas, lo que en conjunto se traduce en una ventaja competitiva sostenida en el mercado (Barriga, Guevara, Campoverde y Paredes, 2022).

Así mismo, la obtención de certificaciones ambientales (por ejemplo, ISO 14000) se reconoce como una ventaja competitiva tangible, que significa una formalización interna de los compromisos ambientales, además de las estrategias de marketing digital y la creación de experiencias de compra en línea mejoradas, que pueden llegar a lograr lazos más estrechos y el compromiso con los clientes, reforzando aún más la presencia en el mercado (Barragán, 2022).

Más allá de los beneficios económicos inmediatos, la ecoinnovación y la tecnología permiten a las MIPES cultivar activos intangibles invaluable, como la reputación o prestigio de empresa (llamada contablemente Crédito Mercantil), la confianza y la lealtad a la marca. Estos activos son muy difíciles de imitar para los competidores, estableciendo así una ventaja competitiva duradera en un mercado cada vez más consciente del medio ambiente y la sociedad. Si bien las ganancias financieras son mensurables, las fuentes de información también, puesto que enfatizan la importancia de la “reputación”, la “confianza” y la “lealtad a la marca”, (Tegethoff, Santa, Bucheli, Cabrera y Scavarda, 2025) y en un mercado en donde los consumidores priorizan cada vez más las opciones sostenibles, las MIPES que adoptan genuinamente la ecoinnovación y comunican de manera eficaz sus esfuerzos por canales digitales, obtienen una ventaja estratégica que no puede ser usada fácilmente solo por la competencia de precios, así, esto construye relaciones duraderas con los clientes y una posición sólida en el mercado (Adbullah, Mohd, Halim, Omar, Rosli y Harun, 2024).

2.4 Fomento de la resiliencia empresarial y adaptabilidad

Las innovaciones tecnológicas son fundamentales para aumentar la resiliencia de las entidades económicas ante diversos desafíos y amenazas, las prácticas sostenibles preparan a las MIPES para adaptarse eficazmente a regulaciones ambientales más estrictas y responder a las cambiantes preferencias de los consumidores (Hamdouna y Khmelyarchuk, 2025). La implementación de una “estrategia de resiliencia sostenible” se destaca como un enfoque que ayuda a las MIPES a superar los desafíos, maximizar

sus recursos que casi siempre son limitados y lograr beneficios ambientales a largo plazo. (Sudirman, Astuty y Aryanto, 2025) La transformación digital exitosa requiere que las empresas demuestren ser flexibles, que tomen decisiones estratégicas y adapten continuamente sus procesos operativos a las circunstancias cambiantes, (Mick, Kovalski y Chiroli, 2024) por lo que todas estas acciones llevan a un cambio en la rentabilidad de las MIPES a corto plazo, lo anterior es crucial para este tipo de empresas que a menudo son las más vulnerables a situaciones externas debido a su tamaño y recursos limitados. La ecoinnovación y las tecnologías digitales juntas, forman una herramienta que permiten que las MIPES sean más ágiles y convierten posibles amenazas en oportunidades para una adaptación proactiva y una ventaja competitiva sostenida (Sudirman, Astuty y Aryanto, 2025).

2.5 Generación de valor social y ambiental

La ecoinnovación fomenta activamente resultados sociales positivos al abordar problemas que afectan directamente a la sociedad en general, lo que lleva a la creación de empleos verdes y promueve tanto la inclusión social como el control sobre sus propios recursos financieros, desempeñando un papel fundamental en el avance de los objetivos de Responsabilidad Social Corporativa (RSC) (Tegethoff, Santa, Bucheli, Cabrera y Scavarda, 2025). Las MIPES ambientalmente innovadoras contribuyen al desarrollo de una economía circular al diseñar productos y servicios que minimizan los residuos y fomentan activamente la reutilización, la reparación y el reciclaje, reduciendo así la dependencia de recursos finitos, además hace que los beneficios ambientales sean profundos y multifacéticos, incluyendo entre éstos, una huella ecológica reducida, un consumo de recursos mínimo y una mitigación de la contaminación (Sudirman, Astuty y Aryanto, 2025).

Al adoptar la ecoinnovación, las MIPES no sólo mejoran sus resultados económicos, sino que se convierten en contribuyentes activos y legítimos al bienestar comunitario y la gestión ambiental, esta alineación estratégica, fortalece su licencia para operar y atrae talento y clientes socialmente conscientes.

Los pilares social y ambiental del marco Triple Resultado o TBL por sus siglas en inglés (Triple Bottom Line) están directamente abordados y respaldados demostrando que los beneficios de la ecoinnovación se extienden más allá del rendimiento financiero, ya que también abarca la creación de valor social y ambiental fomentando así un fuerte apoyo local, atrae y retiene empleados talentosos interesados en la sostenibilidad y las diferencian, de manera que las corporaciones que son más grandes puedan tener dificultad para replicar esa autenticidad (Tegethoff, Santa, Bucheli, Cabrera y Scavarda, 2025).

2.6 Desafíos y oportunidades para la adopción en MIPES

A pesar de los claros beneficios de la ecoinnovación y la tecnología, las MIPES enfrentan una serie de obstáculos que pueden impedir su adopción, sin embargo, también existen impulsores y oportunidades que pueden facilitar su implementación exitosa.

2.6.1 Barreras clave

a. Financieras: Las MIPES con frecuencia enfrentan limitaciones de capital financiero, lo que obstaculiza su capacidad para invertir en tecnologías verdes avanzadas o para contratar a profesionales especializados en sostenibilidad, (Tegethoff, Santa,

Bucheli, Cabrera y Scavarda, 2025) los altos costo de inversión inicial asociados con las transformaciones sostenibles, como la instalación de paneles solares o flotillas de autos eléctricos, a menudo representan una barrera de manera sustancial (Smith, 2025).

b. Conocimiento y habilidades: Un desafío que es constante, es la base de conocimiento débil, la falta de capacitación adecuada y la ausencia de las habilidades y competencias digitales y verdes necesarias entre los empleados y la gerencia. Hablando específicamente de la falta de habilidades digitales, se abarca tanto la experiencia técnica como la mentalidad digital requerida para la transformación, esto es un impedimento importante para las MIPES. (Kahveci, 2025) Además, los estudios indican que la edad creciente de los propietarios de las empresas puede correlacionarse de manera negativa con la probabilidad de adoptar soluciones digitales (Velázquez, 2025).

c. Culturales y organizacionales: Muchas MIPES exhiben un miedo a la digitalización y una resistencia general al cambio, particularmente si los beneficios inmediatos no son evidentes o interrumpen las prácticas tradicionales. (Tegethoff, Santa, Bucheli, Cabrera y Scavarda, 2025) La toma de decisiones puede verse obstaculizada por información incompleta y la complejidad percibida de las nuevas herramientas digitales. (Velázquez, 2025) En particular, las MIPES a veces se caracterizan por tener resistencia al cambio tecnológico, a pesar de ser adaptables a los cambios del mercado (Baeshen, Soomro y Bhutto, 2021).

d. Regulatorias y de cadena de suministro: Navegar por la complicada y cambiante red de regulaciones ambientales locales, nacionales e internacionales puede ser costoso y consumir mucho tiempo para las MIPES, agravado por la falta de marcos regulatorios unificados. (Tegethoff, Santa, Bucheli, Cabrera y Scavarda, 2025) Dentro de las cadenas de suministro, un desafío importante radica en lograr la transparencia, como lo es en el rastreo de materias primas y asegurar el cumplimiento, sobre todo si se trata con proveedores más grandes que no pueden priorizar las demandas de las empresas más pequeñas (Smith, 2025).

2.7 Implicaciones para políticas y prácticas

Para fomentar la adopción generalizada de la ecoinnovación y la tecnología en las MIPES, se requieren estrategias coordinadas tanto a nivel gubernamental como a nivel empresarial.

2.7.1 Estrategias gubernamentales y mecanismos de financiamiento

Los gobiernos deben promover activamente la colaboración entre organizaciones y centros de investigación, difundir políticas industriales y desarrollar sistemas integrales de gestión del conocimiento para apoyar a las MIPES (Baeshen, Soomro y Bhutto, 2021). las políticas deben centrarse en fortalecer la infraestructura y los servicios tecnológicos, lo que incluye reducir barreras de información que a menudo impiden el acceso de las MIPES al crédito en las economías emergentes (Velázquez, 2025). Es esencial facilitar el acceso a opciones de financiamiento preferenciales y sostenibles para las MIPES y considerar la reducción de las garantías financieras requeridas para la participación en licitaciones y contratos públicos (López, Gascón y Öko-Institut e.V., 2024).

La intervención gubernamental debe evolucionar de proporcionar un apoyo económico amplio a implementar políticas integradas y dirigidas que aborden tanto las brechas financieras como las de información y conocimiento que aplique a las MIPES.

Esto implica aprovechar las herramientas digitales para agilizar el acceso al financiamiento verde y a los programas de apoyo, haciéndolos más accesibles y eficaces. Las investigaciones indican que la tecnología digital puede disminuir las limitaciones financieras para las MIPYMES, sin embargo, los programas gubernamentales existentes están disponibles pero son difíciles de acceder para este tipo de empresas, por lo que la implicación más profunda es que las políticas no sólo deben asignar fondos, sino también diseñar plataformas digitales y procesos simplificados para difundir información, facilitar las solicitudes (menos burocracia) y conectar a las MIPYMES con los recursos financieros y de conocimiento relevantes, esto aborda directamente las “limitaciones de información” identificadas como una barrera (Fu y Xu, 2024).

2.7.2 Programas de capacitación y desarrollo de habilidades digitales y verdes

Superar las barreras relacionadas con el conocimiento y la capacitación es primordial para adoptar de manera exitosa la tecnología y la mejora de la competitividad dentro de las MIPES. (Velázquez, 2025) Las iniciativas educativas y de capacitación deben diseñarse para preparar a la fuerza laboral futura con las habilidades necesarias para una economía circular y sostenible (Saint-Gobain México, 2021).

Los formuladores de políticas deben invertir activamente en el desarrollo de habilidades verdes y digitales, aumentar la conciencia sobre su importancia y promover las mejores prácticas a través de varios canales, además deben desarrollarse programas de capacitación para mejorar la capacidad de las MIPES y así poder participar y tener éxito en los procesos de contratación pública, sobre todo en aquellos con criterios de sostenibilidad (López, Gascón y Öko-Institut e.V., 2024).

2.7.3 Fomento de ecosistemas colaborativos y redes de innovación

Las iniciativas de cooperación compuestas por actores públicos y privados son esenciales para mejorar la eficiencia y fomentar la innovación dentro del sector de las MIPES, sin embargo, deben establecerse mecanismos de apoyo para brindar ayuda a las empresas, principalmente en las economías emergentes, a fomentar el crecimiento de la ecoinnovación (Saint-Gobain México, 2021). La colaboración con socios externos es crucial para la innovación, especialmente durante las fases de ingeniería y fabricación de nuevos productos o procesos (Barragán, 2022).

Las estrategias que fomentan la agrupación de MIPES pueden permitirles consolidar sus capacidades individuales y cumplir de manera colectiva con requisitos complejos, como las de licitaciones públicas. (López, Gascón y Öko-Institut e.V., 2024) La promoción de innovación abierta y el fomento de redes colaborativas mejoran significativamente la capacidad de innovación general de las MIPES (Hamdouna y Khmelyarchuk, 2025).

2.8 Recomendaciones estratégicas para las MIPES

• **Desarrollo de conciencia digital y estrategia:** Las MIPES deben desarrollar una “conciencia digital”, lo que implica comprender las tecnologías disponibles (por ejemplo, computación en la nube, IA, automatización, banca digital, etc.) y reconocer su impacto potencial en las operaciones comerciales, (Kahveci, 2025) este conocimiento debe convertirse en estrategias digitales accionables, integrando a la tecnología como parte integral de su estrategia corporativa general (Mick, Kovalski y Chirolí, 2024).

- **Inversión en capital humano con habilidades en Tecnologías de la Información (TI):** Es esencial que las MIPES incorporen perfiles con sólidas habilidades de TI, principalmente en los roles de liderazgo, ya que esto ha sido identificado como una práctica altamente exitosa para la madurez digital (Kahveci, 2025). Además, fomentar un entorno de aprendizaje y colaboración dentro de la organización es primordial para mejorar las capacidades de adquisición y aplicación de conocimientos de los empleados para productos y procesos respetuosos con el medio ambiente (Baeshen, Soomro y Bhutto, 2021).

- **Enfoque en la sostenibilidad como motor de negocio:** Las MIPES deben priorizar las iniciativas que prometen el mayor impacto ambiental y social positivos, (Smith, 2025) esto implica integrar la sostenibilidad en su estrategia comercial, considerando los impactos económicos, sociales y ambientales de manera holística. (Fu y Xu, 2024)

- **Adopción de estrategias de resiliencia sostenible:** La adopción proactiva de tecnología y la implementación de estrategias de adaptación sostenible son importantes, por lo que se deben incluir la realización de evaluaciones de riesgos, el desarrollo de planes de contingencia y la optimización de recursos para minimizar los peligros y garantizar los beneficios ambientales a largo plazo (Sudirman, Astuty y Aryanto, 2025).

Para las MIPES, un enfoque estratégico y centrado en el ser humano que priorice la conciencia digital, el liderazgo y la sostenibilidad en el modelo de negocio, es más efectivo que uno puramente tecnológico. El conocimiento digital y la innovación exitosa no dependen solo de la infraestructura tecnológica, sino en gran medida de factores humanos y estratégicos, recomendaciones como crear “conciencia digital”, incorporar “habilidades de TI en el liderazgo” (Kahveci, 2025) y adoptar una “estrategia de resiliencia sostenible” recalcan que la adopción exitosa comienza con las personas y la visión estratégica, (Sudirman, Astuty y Aryanto, 2025) lo que sería ideal para la MIPES con presupuestos limitados, guiándolas a invertir sabiamente en capacidades internas y una mentalidad proactiva para maximizar su ventaja competitiva.

3. MÉTODOS DE INVESTIGACIÓN

El presente estudio tiene un enfoque mixto. Se realizaron encuestas a los gerentes de las microempresas. La muestra es no probabilística a conveniencia de una población tomando como criterio de selección la accesibilidad a las mismas. Se realizó trabajo de campo. Se tomó como base el padrón del SIEM (2023), se realizó un muestreo no probabilístico a conveniencia tomando como criterio de selección, las micro y pequeñas empresas más representativas de ese sector dentro de la Ciudad de Torreón. Se realizaron las entrevistas a 50 empresas, se procesaron los datos y se obtuvieron resultados claros acerca de la situación que prevalecía dentro de las empresas con respecto a la ecoinnovación y sobre todo la forma en que la tecnología impacta en su competitividad.

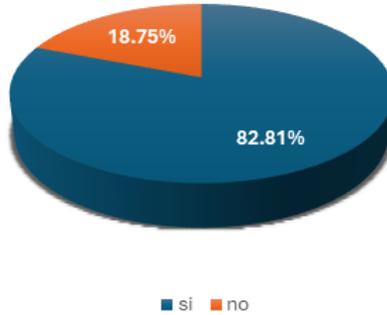
4. RESULTADOS Y ANÁLISIS

4.1 Resultados

Al procesar las encuestas aplicadas a las micro y pequeñas empresas, se obtuvieron los siguientes resultados:

Figura 1. Uso de las TIC'S.

Uso de las TIC'S



Source: Own elaboration.

Como se puede observar más del 82% de las empresas encuestadas usan de alguna manera las TIC'S, sobre todo durante la pandemia y después de ésta, las empresas en general, pero sobre todo las MIPYMES, tuvieron que analizar la situación e innovar para mantenerse a flote durante esta crisis y no cerrar sus puertas de manera definitiva, aunque se superó (de cierta manera) la pandemia, las TIC'S llegaron para quedarse en éstas empresas.

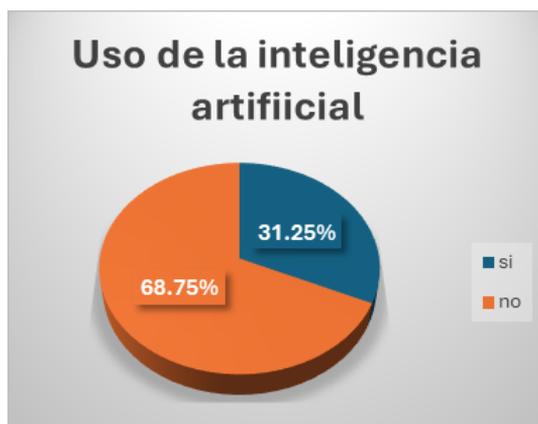
Figura 2. Capacitación en TIC'S.



Source: Own elaboration.

Al ver que la mayoría de las empresas utilizan algunas TIC'S como herramientas, se preguntó si se les capacita al personal para poder utilizar este tipo de herramientas, y casi el 86% de la empresas capacita a su personal para poder utilizar estas TIC'S, haciendo así, más eficientes sus labores diarias, además de hacer sinergia con la sustentabilidad para cuidar los recursos naturales que nos quedan.

Figura 3. Uso de la inteligencia artificial.



Source: Own elaboration.

Aunque ya hace tiempo se utilizaba la inteligencia artificial, en la actualidad existe un auge en el uso de esta herramienta, al preguntar a las entidades encuestadas si utilizaban la inteligencia artificial para algún proceso (ya sea operativo o administrativo) en la empresa el 68.75% contestó que sí, esta información nos revela que las MIPES se adaptan y usan la tecnología no sólo para mantenerse, también la usan para lograr ser sustentables y así ser competitivos además de cumplir con las exigencias de clientes que cada vez más, se preocupan por el medio ambiente y nuestro planeta.

Figura 4. Uso de las redes sociales.



Source: Own elaboration.

Como se observa, al preguntar si utilizan las redes sociales dentro de su empresa, casi el 80% dijo que sí, como ya se mencionó, casi todas las empresas tuvieron que adaptarse y empezar a innovar utilizando otros medios para realizar sus actividades, y vieron en las TIC'S como una herramienta muy eficaz y sustentable para mantenerse en el mercado.

4.2 Análisis de resultados

En base a los resultados de la aplicación de las encuestas se observa una gran iniciativa por

parte de los empresarios para trasitar de un modelo lineal a uno circular, donde las acciones de ecoinnovación marcan el inicio de una nueva cultura en la empresa que, de inicio, tiene beneficio en costos, lo que les permite ser más competitivas, y en consecuencia, estos cambios tienen un impacto directo en el cliente que percibe los cambios de manera positiva.

Actualmente existen más empresas convencidas de los beneficios de ser sustentable, y además se dieron cuenta que no requieren tanta inversión para realizar cambios significativos los clientes están concientizados acerca de la situación actual del planeta por lo que acciones como las mencionadas en materia de energía, de agua, y en general de recursos naturales que posicionan a la empresa en un mejor lugar en cuanto a competitividad se refiere.

5. CONCLUSIONES

Si bien es cierto la innovación se ha convertido en una herramienta muy importante para la competitividad de una organización. El hacerlo con un objetivo sustentable que tenga un impacto económico, social y ambiental genera mayores beneficios.

El análisis presentado en esta investigación reafirma que la ecoinnovación y la tecnología no son meramente beneficiosas, sino herramientas indispensables para que las micro y pequeñas empresas (MIPES) logren y mantengan la competitividad en el complejo panorama global actual.

La integración de la ecoinnovación y la tecnología también fortalece la resiliencia empresarial, permitiendo a las MIPES adaptarse de manera flexible a los cambios regulatorios, las fluctuaciones de recursos y las cambiantes preferencias del consumidor.

Las MIPES enfrentan desafíos persistentes, como limitaciones financieras, brechas de conocimiento y habilidades, así como resistencia cultural. Sin embargo, se destaca que estos obstáculos pueden mitigarse mediante un enfoque estratégico que priorice el desarrollo del capital humano y la integración de la sostenibilidad en el modelo de negocio central.

Después de analizar los resultados obtenidos, en esta primera etapa se concluye que la ecoinnovación a través de la tecnología, genera ventaja competitiva en las microempresas, alcanzando mejores resultados en las ventas, organización de trabajo, disminución de costos y un mejor posicionamiento derivado del uso de redes sociales y de capacitación del personal en TIC'S, las empresas están convencidas que es la única forma de permanecer y poder escalar, aunque anteriormente se pensaba que las micro no podían innovar se han dado cuenta que no se requiere mucha inversión y sobre todo generará muchos beneficios derivados de su implementación el contar con un nuevo modelo de negocios tendiente a una economía circular garantiza mejores condiciones de vida para la sociedad en general. En última instancia, al abrazar estas transiciones, las MIPES no solo aseguran su propia viabilidad y crecimiento, sino que también se convierten en agentes activos de un desarrollo sostenible más amplio.

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Barriers to alignment of entrepreneurship curriculum towards the development of graduate entrepreneurs in South Africa's higher education

Keywords: Entrepreneurship curriculum, Graduates, Alignment, Curriculum framework, Entrepreneurship education.

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ABSTRACT

Every discipline's curriculum is designed to direct a learning outcome which mostly aims to equip the students with the desired skills and knowledge for the specific discipline. Thus, a curriculum designed for entrepreneurship education is no different. It should serve as a key learning tool that inspires the uptake of entrepreneurship upon graduation. However, several factors have been identified as hindering the effectiveness of the curriculum in developing graduate entrepreneurs who can address the challenges of unemployment in South Africa. Hence, the study examines the barriers that affect the alignment of entrepreneurship curriculum with the goal to develop graduate entrepreneurs in South Africa HE. The primary objective is to identify structural challenges that prevent the development of an effective curriculum aimed at fostering entrepreneurial competencies among graduates. A qualitative approach was adopted to collect data from 60 university students through focus group interviews. Ethical approval for the study was obtained from the University of the Western Cape's Research Ethics Committee. The identified key findings revealed barriers to curriculum alignment, including lack of a curriculum framework, low learning engagement, the need for dynamic and practical integration, and limited opportunity-driven learning. The study recommends addressing these barriers to facilitate learning that will result in the development of graduate entrepreneurs.

Keywords: Entrepreneurship curriculum, Graduates, Alignment, Curriculum framework, Entrepreneurship education.



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INTRODUCTION

For entrepreneurship education to be impactful and foster learning that equips graduates with entrepreneurial skills and knowledge, a well-structured curriculum is needed. A well-structured entrepreneurship education curriculum therefore extends entrepreneurial learning that empowers graduates with practical skills and innovative thinking, thereby shifting their mindset from job-seekers to job-creators (Tiberius et al., 2023; Lee, 2020). The achievement of the mindset change agenda through entrepreneurship relies on a pedagogical framing that enables educators to impart entrepreneurial skills and knowledge, which are linked to venture and job creation (Galvão, Ferreira & Marques, 2018). Essentially, a focused entrepreneurship education program motivates graduates to pursue self-employment, creating jobs and thereby contributing to reducing the high rate of unemployment (Xie, 2024; Mahmood et al., 2021; Shambare & Dong, 2019; Lackéus, 2020; Turcan & Fraser, 2018). Consequently, the development of a well-structured entrepreneurship curriculum plays a vital role in producing graduate entrepreneurs who will make meaningful contributions to national and global development plans, including the South African NDP, the African Union's Agenda 2063, and the United Nations (UN)'s sustainable development goals (SDGs).

Making a case for a structured entrepreneurship education curriculum

As entrepreneurship education in South Africa gains awareness, several factors have been identified to affect the curriculum's capacity to develop successful entrepreneurs (Iwu et al., 2018; Echezona, 2015). Many scholars have explained that these obstacles hinder effective entrepreneurial learning, which stimulates entrepreneurship pursuits among graduates (Chimucheka, 2014; Shambare & Donga, 2019; Iwu et al., 2021; Greenwood, 2021).

Primarily, Rankhumise et al. (2020) and Iwu and Opute (2021) observed that entrepreneurship curriculum is not formally established as a distinct field of study at most universities in South Africa, with only a few instances integrated into non-business programs. Bala (2020), alongside Iwu (2022), contend that to achieve the desired outcome of entrepreneurship education, the curriculum should be structured as a standalone module. Furthermore, Qwabe, Ngibe, and Bingwa (2025) support this view by suggesting that structuring entrepreneurship education as a module in other disciplines will not realistically achieve the aim of developing graduate entrepreneurs. In examining the factors that influence the effectiveness of entrepreneurship curriculum, Omotosho et al. (2021) identify the inadequate acquisition of practical skills and knowledge within the higher education (HE) ecosystem as a significant barrier to producing competent graduate entrepreneurs. Greenwood (2021) and Iwu (2022) reinforce this view, emphasising a persistent disconnect between the curriculum content and the pedagogical strategies in the classroom that hinder the cultivation of an entrepreneurial mindset, as well as the development of essential competencies among graduates. After all, the effectiveness of entrepreneurship education should be measured by its ability to instil entrepreneurial competencies and foster the development of venture-creating graduates (Matlay, 2019).

The need to structure entrepreneurship curriculum continues to attract research attention. The reasons advanced by extant literature include the rising levels of graduate unemployment/unemployability (Iwu et al., 2024), the confusing pattern of pedagogies (Du Toit & Gaotlhobogwe, 2018), and the obvious dearth of trained entrepreneurship educators (Cui, Sun, & Bell, 2021). Fingers have also been pointed at dilapidated

infrastructure (Iwara & Kilonzo, 2022), the lack of association with industry to augment students' practical experience (Jones, 2019), and the non-promising economic standards of countries in the global South as reasons why a structured entrepreneurship education curriculum is crucial. Considering the foregoing, we set out to investigate the barriers that hinder the alignment of entrepreneurship curriculum towards the development of graduate entrepreneurs in South African HE institutions.

LITERATURE REVIEW

The curriculum has long been recognised as a foundational element in shaping educational outcomes, particularly within higher education (HE), as it defines learning objectives, guides instructional delivery, and advances transformative learning experiences (Japee & Oza, 2021; Hutahaeen et al., 2024). As Vreuls et al. (2023) note, curriculum forms the backbone of the educational ecosystem, influencing both policy and practice.

Historically, the concept of curriculum has evolved through the contributions of influential thinkers, including Plato, Aristotle, Comenius, Bobbit, and Froebel, each offering distinct perspectives on its purpose and structure (Wallace, 2019; Mulenga, 2015). A well-designed curriculum not only supports academic development but also enables educators to select appropriate teaching methods that promote equitable access to quality education (Shahjahan et al., 2022; Wilson et al., 2022).

In entrepreneurship education, curriculum outlines intended learning outcomes, and the absence of a well-structured entrepreneurship curriculum is one of the primary reasons for the lack of effective entrepreneurial learning in South Africa (Qwabe et al., 2025). Promoting entrepreneurship curriculum remains fundamental to enhancing future graduates' ability to engage in entrepreneurial learning (Iwu et al., 2020). By enhancing graduates' ability to engage in entrepreneurial learning, this approach equips them with entrepreneurial competencies and knowledge to contribute meaningfully to the nation's development through job creation (Hasmawaty et al., 2020). Nchu (2015) argues that, as South African unemployment experiences exponential growth, entrepreneurship education acts as a strategic intervention to address its economic challenges. Thus, a well-structured curriculum is instrumental in shaping graduates' potential to initiate ventures and engage in entrepreneurial activities.

Barriers to entrepreneurship curriculum effectiveness

The entrepreneurship curriculum has been characterised as a multifaceted paradigm, whose pivotal role centred on advancing entrepreneurial learning. The core aim, as maintained by Tiberius et al. (2023), is to equip graduates with relevant skills and knowledge while emphasising a mindset shift from seeking white-collar jobs to becoming venture creators. The foundation of an entrepreneurship curriculum is to develop innovative ideas, knowledge, and skills; however, Du Toit & Kempen (2018) argue that it also includes information on how students can recognise business opportunities, develop operational procedure plans, create and grow new businesses. Equally, Bridge (2017) and Lahn and Erikson (2016) highlighted that an entrepreneurship curriculum is content-driven, as it facilitates learning that empowers an entrepreneurial attitude, intentions, and mindset. However, the effectiveness of entrepreneurship education is driven by several factors, such

as curriculum design, pedagogical approach, institutional support, and alignment with industry needs, which hinder the production of graduate entrepreneurs (Munyanyiwa & Mutsau, 2015). The principles used in this study demonstrate how the absence of a well-structured curriculum impedes the development of graduates' outcomes.

The entrepreneurship curriculum in South Africa faces several challenges that affect its effectiveness. According to Mulenga (2018), one major factor is the lack of a structured and standalone approach to entrepreneurship education. Often, as echoed by Iwu et al. (2021), the curriculum is integrated into other departments' programs as a supplementary module instead of being treated as a distinct and comprehensive program. Omotosho et al. (2021) highlighted that this fragmented approach has affected the development of students who intentionally enrol in an entrepreneurship program with the objective of becoming entrepreneurs. As a result, the curriculum may fail to provide students with in-depth knowledge and skills, practical exposure, and mentorship necessary for cultivating entrepreneurial competencies and mindset (Leibowitz, 2017).

According to Munyanyiwa and Mutsau (2015), entrepreneurship courses are designed to prepare students with the necessary skills to start, create, and launch new businesses, while also nurturing their abilities as managers, inventors, and entrepreneurs. However, the effectiveness of these learning approaches is limited due to lack of an appropriate pedagogical approach adopted (Pesotsky et al., 2021; Mahadea & Kabange, 2024). In many cases, entrepreneurship education remains predominantly theoretical, with inadequate integration of practical learning methods that are essential for exposing graduates to real-world entrepreneurial competencies (Iwu et al., 2021). Furthermore, the issue of who teaches entrepreneurship remains a significant barrier to the effective delivery of an entrepreneurship curriculum. Ideally, entrepreneurship should be taught by trained lecturers and professors with specialised knowledge in entrepreneurship, as well as experienced mentors and successful businesspeople who can offer practical advice and guidance (Quew-Jones & Rowe, 2022; Ratten & Usmanij, 2020). However, in many cases, institutions assigned this subject to educators without relevant entrepreneurial experience or pedagogical training, which impedes the practicability of the curriculum. Hence, effective entrepreneurship learning requires facilitators who can understand the significance of integrating both theoretical and practical frameworks to offer holistic learning that inspires and equips students with entrepreneurial competencies and mindset.

While Seitz (2017) highlights that the institutional void has contributed to the barrier of effective entrepreneurship curriculum in South Africa, which hinders the development of graduate entrepreneurs. Dzomonda and Fatoki (2019) argue that the lack of prioritisation of entrepreneurship education across various South African universities has led to inadequate strategic planning for its integration into core academic programs. Furthermore, Iwu (2022) identified that some disadvantaged universities in South Africa lack the infrastructure needed to support effective entrepreneurial learning, such as innovative hubs and business labs. Additionally, Shambare & Donga (2019) emphasised the institutional bureaucracy that hinders the implementation of innovative entrepreneurship initiatives as a result of low approval for curriculum amendments.

Furthermore, lack of alignment with industry needs is another barrier that hinders the effectiveness of an entrepreneurship curriculum (Munyanyiwa & Mutsau, 2015). As noted by Lee (2020), the absence of meaningful collaboration among universities, industry, and the government impedes the practicality of entrepreneurship. Without real-world exposure

and active partnership with these stakeholders, students are deprived of experiential learning opportunities that offer a chance for skills and knowledge development. Thus, this study examines how a well-structured entrepreneurship curriculum can effectively bridge the gap and support the development of graduate entrepreneurs.

The significance of a well-structured entrepreneurship curriculum

The importance of a well-structured entrepreneurship curriculum cannot be overstated, as it provides students with an effective entrepreneurial learning experience that equips them with the knowledge, skills, competencies, and mindsets necessary to succeed. Ratten & Usmanij (2020) noted that an effective entrepreneurship curriculum should be offered as a distinct academic discipline, enabling institutions to produce graduates who intentionally aspire to become venture creators. Similarly, Mahmood et al. (2021) highlighted that, given entrepreneurship is fundamentally linked to job creation, a well-designed curriculum facilitates learning that enables students to identify and seize opportunities that contribute to reducing unemployment.

Consequently, Harrington and Maysami (2015) argue that a well-structured entrepreneurship curriculum must carefully consider the adoption of pedagogical approaches. Paek, Guler, and Rogan (2021) similarly highlighted that integrating both theoretical and practical methods of teaching into the entrepreneurship curriculum empowers students with a holistic entrepreneurial learning experience, one that contributes meaningfully to address societal challenges such as low economic growth, unemployment, and poverty alleviation. Furthermore, Ajani (2024) stated that the entrepreneurship curriculum should be delivered by professionals and experts who possess a comprehensive understanding of entrepreneurship and are capable of mentoring students effectively, particularly in areas such as risk management and overcoming the fear of failure. Additionally, Omotosho et al. (2021) and Paek et al. (2021) advocate for an interactive teaching method that includes case studies, a mentorship model and experiential learning, all of which are vital as they boost students' confidence.

While institutional support is essential for providing prioritised resources to build innovation hubs, labs, and incubators, Galvão, Ferreira, & Marques (2018) highlighted that it helps students to prototype, test, and launch ventures. Similarly, Ajani, Khumatake, & Gamede (2023) assert that institutional support will bring curriculum development and flexibility, ensuring the curriculum remains dynamic and offers practical learning that aligns with real-world entrepreneurial challenges. Furthermore, Ajani (2024) noted that the support of the institution reduces the fear of failure when venturing into entrepreneurship as a career and encourages experimentation among students, which propels them to shift from a job mentality to a job creation mentality.

While Lackéus (2020) and Ajani (2024) highlighted that networking with the industry ecosystem enables students to be mentored, gain work-related experience, and secure government funding opportunities, which are crucial for setting up a business, as funding is required. Notably, aligning with the needs will ensure that the course content aligns with market demand, empowers students' employability, and supports the success of start-up businesses (Quew-Jones & Rowe, 2022; Hägg & Gabrielsson, 2020). Consequently, Iwu et al. (2020) emphasise that collaborating with industry can provide students with

opportunities to interact with experts, which can lead to partnerships, investments, and business prospects.

METHODOLOGY

The qualitative approach was employed for data collection, involving two universities in the Western Cape, South Africa. Semi-structured interviews guided the study, utilising a focus group technique to collect data from 60 graduate participants, organised into 12 distinct groups, each comprising five students in a team. All data collected were transcribed and analysed using Atlas.ti software. The participants' academic learning schedules were taken into consideration to avoid conflict prior to participating in the interactive interview. The use of an inductive paradigm and interpretivist method formed the basis of data derived from the interviews (Khatri, 2020). Consequently, due to the employed qualitative method, the exploratory study was designed and followed, which assisted in identifying emerging data on the nature of entrepreneurship curriculum for alignment. Furthermore, the application of a qualitative approach resulted in the initiation of case study strategies.

Sampling

The current study's sample consisted of 60 participants, who were students from selected universities in Cape Town, Western Cape Province, South Africa. Several considerations guided the sample selection. Firstly, the participants were students who had been exposed to entrepreneurship learning and those who had not. Secondly, the participants were students in their third and fourth years of academic study. Lastly, the sample size adopted provides rich insight into the barriers that hinder curriculum effectiveness. Hence, the total sample was organised into twelve groups, and each team comprised five graduates (Table 1).

Table 1. Study samples profile.

Pseudonym	Academic year	Business student and non-business student	Age range (20-24)	Gender
Group 1	4 th	Business	Yes	Male/Female
Group 2	3 rd and 4 th	Business	Yes	Male/Female
Group 3	3 rd and 4 th	Business	Yes	Male/Female
Group 4	4 th	Business	Yes	Male/Female
Group 5	3 rd and 4 th	Business	Yes	Male/Female
Group 6	3 rd and 4 th	Business	Yes	Male/Female
Group 7	3 rd and 4 th	Business	Yes	Male/Female
Group 8	3 rd and 4 th	Business	Yes	Male/Female
Group 9	3 rd and 4 th	Non-business	Yes	Male/Female
Group 10	3 rd and 4 th	Non-business	Yes	Male/Female
Group 11	3 rd and 4 th	Non-business	Yes	Male/Female
Group 12	3 rd	Non-business	Yes	Male/Female

Approval of the study

The study approval was sought and granted by the University of the Western Cape (UWC) Research Ethics Committee. Ethics is a memorandum of understanding that guides the relationship between the researcher and the participants during research, ensuring the

safety of all participants, their right to privacy, anonymity, confidentiality, informed consent, and the avoidance of deception, as well as justice and voluntary participation. In accordance with the ethical agreement, the study ensures that the participants signed the consent letter.

RESULT AND DISCUSSION

The study focused on evaluating the nature of the entrepreneurship curriculum in South Africa for alignment. Below presents the analysis of the transcribed interviews.

Identification codes

To ensure clarity and consistency in referencing, each of the twelve focus groups was assigned a unique identification code. In order to distinguish participants from business and non-business programs, the code system was designed. To illustrate the codes for easy identification, **CODEG1–8BST** represents business students, while **CODEG9–12NST** denotes non-business students.

This segmentation facilitates systematic analysis and is presented in Table 4.2 below.

Table 4.2. Identification codes.

Groups	Academic Program	Codes
Focus group 1	CODEG1BST	Business students
Focus group 2	CODEG2BST	Business students
Focus group 3	CODEG3BST	Business students
Focus group 4	CODEG4BST	Business students
Focus group 5	CODEG5BST	Business students
Focus group 6	CODEG6BST	Business students
Focus group 7	CODEG7BST	Business students
Focus group 8	CODEG8BST	Business students
Focus group 9	CODEG9NBST	Non-business student
Focus group 10	CODEG10NBST	Non-business student
Focus group 11	CODEG11NBST	Non-business student
Focus group 12	CODEG12NBST	Non-business student

THE RESULTS

As highlighted in Figure 4.1 below, the question regarding the curriculum framework in the structure of entrepreneurship education across the selected universities for impactful learning was posed. Out of 12 focus groups that participated (100%), seven (58.3%) indicated that the entrepreneurship curriculum is a module-based approach and a non-disciplinary module. Four groups (33.3%) revealed that entrepreneurship is not offered as a distinct field of study. Besides, one group (8.3%), from a non-business faculty, stated that

knowledge of the entrepreneurship curriculum is unfamiliar to students in their faculty. The participants' responses will be presented using the code in Table 2.

CODEG1BST: *At this institution, students enrolled in business programmes receive entrepreneurship education through a module-based structure, specifically designed and embedded within the business curriculum.*

CODEG3BST: *As graduates of the business programme, we observed that entrepreneurship education is not integrated into our module curriculum*

CODEG11NBST: *As graduates from non-business programmes, we observed that entrepreneurship education was not integrated into our departmental or faculty curriculum.*

Research findings suggest that a lack of structuring entrepreneurship curriculum as a distinct field and cross-faculty module, especially in non-business fields, may hamper graduate entrepreneurship. Based on the participants' viewpoints, it was evident that the entrepreneurship education curriculum framework lacked the integration of the curriculum as a field of study and a shared curriculum across other fields of study.

In consideration of the question on curriculum activities, which centres on the essential characteristics of the entrepreneurship curriculum for effectiveness. The entire group of participants (100%) emphatically highlighted the lack of curriculum activities that provide practical learning and meaningful experiences, such as brainstorming of business ideas, identifying opportunities, developing business plans, participating in simulations, and engaging in real-world business settings. For instance, an examination of graduates who participated in entrepreneurship education revealed that these students demonstrated active engagement in learning; however, there was clearly a shortfall in curriculum activities to equip them with sufficient entrepreneurial skills, knowledge, and an innovative mindset, enabling them to thrive as graduate entrepreneurs.

CODEG5BST: *We recognise that the foundation of every learning depends on the quality and effectiveness of the curriculum. However, within the context of entrepreneurship curriculum, we often encounter challenges, particularly the inability to face real-life problem-solving scenarios due to a teaching approach rooted in theoretical activities, which hinders the innovative concepts and practices of entrepreneurship learning.*

CODEG9NBST: *Undoubtedly, the curriculum is the seedbed of every learning; however, the current curriculum does not effectively enhance the learning experience necessary for graduates to thrive as entrepreneurs. The entrepreneurship curriculum tends to focus on foundational concepts of entrepreneurship, which offer an overview that lacks depth and practical application. As a result, students often leave without a comprehensive understanding of what it takes to start-up and manage a business.*

Despite their engagement, a significant gap remained between the educational content offered and the competencies acquired for entrepreneurial success. Based on the participants' perspectives, the significant gap identified in curriculum activities was the explicit absence of creative learning opportunities, such as mentorship, work-integrated programs, and case and project activities that empowered graduates to thrive as entrepreneurs.

While the question regarding how dynamic and practical-oriented the entrepreneurship curriculum is, 75% of respondents indicated that the entrepreneurship education curriculum lacked adaptability and is marked by real-world inadequacies. According to their views, adaptability and integration of real-world applications are integral aspects of every effective curriculum that aims to develop graduate entrepreneurs. While 25% indicated that the entrepreneurship curriculum lacks practical learning. However, the absence of these elements limited the development of an entrepreneurial mindset among the graduates.

CODEG2BST: *Frankly speaking, the entrepreneurship education we were exposed to was predominantly grounded in textbook-based knowledge, often disconnected from the hands-on learning essential for developing entrepreneurial intentions. This overreliance on theoretical concepts significantly hampers our ability to cultivate an entrepreneurial mindset.*

CODEG8NBST: *One of the participants critically remarked that the entrepreneurship education taught was only theoretical, which deprived them of gaining real-world experience. She rhetorically questioned, “How can you expect us to thrive in business when there is a huge disconnection between academic content and practical learning?”*

In evaluating the entrepreneurship education curriculum activities in which graduates participated, it is imperative to note, with evidence, that the learning activities were predominantly traditional-oriented and did not adequately focus on promoting entrepreneurial capabilities. The inadequacy of the current curriculum in offering dynamic and practical-oriented learning hinders the effectiveness of the curriculum for graduates seeking to acquire 21st-century competencies, including problem-solving skills and analytical thinking. The above responses suggest that the entrepreneurship curriculum remains heavily centred on academic knowledge rather than the development of practical skills and knowledge.

Furthermore, a question on how the structure of the curriculum provides opportunity-driven learning. Notably, 83.3% of respondents indicated that the curriculum to which they were exposed did not effectively promote the ability to recognise and pursue entrepreneurial opportunities. Note that the defining of an effective entrepreneurship curriculum is the ability to equip graduates with entrepreneurial skills that identify and capitalise on business opportunities. While 16.7% indicated that the entrepreneurship curriculum is fundamentally designed to empower graduates to recognise and utilise emerging opportunities, however, graduates find themselves entrenched in a mindset that prioritises conventional, traditional job-seeking pathways rather than embracing entrepreneurial ventures and innovation practices.

CODEG2BST: *Within this group, one participant acknowledged the potential for promising opportunities within the module yet admitted to not having personally experienced such learning. Interestingly, graduates who participated in these opportunity-driven learning experiences were still seeking paid employment, which raises critical questions regarding the effectiveness and practical impact of the opportunities offered through the module.*

DISCUSSION

The nature of the curriculum determines the aspect of developing graduate entrepreneurs, as this learning is significant and links to job creation (Lee, 2020). In this study, the feedback from the majority of participants highlights that the current curriculum framework lacks structural coherence as a distinct field of study and remains excluded primarily from non-business programmes. This identified factor has hindered effective entrepreneurial learning that motivates graduates to pursue entrepreneurship as a career. This study aligns with Iwu et al. (2021) and Greenwood (2021), who similarly argue that the absence of a dedicated and integrated curriculum framework significantly impedes the delivery of a comprehensive and effective entrepreneurial learning experience, which is crucial in producing graduate entrepreneurs. Bala (2020) and Iwu (2022) emphasised that a well-structured curriculum that structures entrepreneurship as a field of study and integrates it into non-business programs, yields positive learning outcomes, developing skilled and knowledgeable graduates who will become job creators.

In evaluating the nature of entrepreneurship curriculum, the absence of learning engagement in entrepreneurship education was highlighted as an impediment to the development of graduate entrepreneurs. The majority of students who have been exposed to an entrepreneurship learning highlighted that the curriculum lacks practical engagement which offers the graduates the opportunity to brainstorm business ideas, recognise opportunities, develop business plans, participate in simulations, and engage in real-world business settings. This approach, which enables graduates to learn entrepreneurship, remains inadequate in advancing innovative learning, as the learning is predominantly theory-oriented. This is in line with the results of Omotosho et al. (2022) and Greenwood (2021), who similarly emphasised that theory-driven entrepreneurship education dominates entrepreneurship education in South Africa. Furthermore, this assertion resonates with the study results of Mahadea & Kabange (2024) and Iwu et al. (2021), who emphasised the significance of active engagement in entrepreneurial learning in developing graduate entrepreneurs.

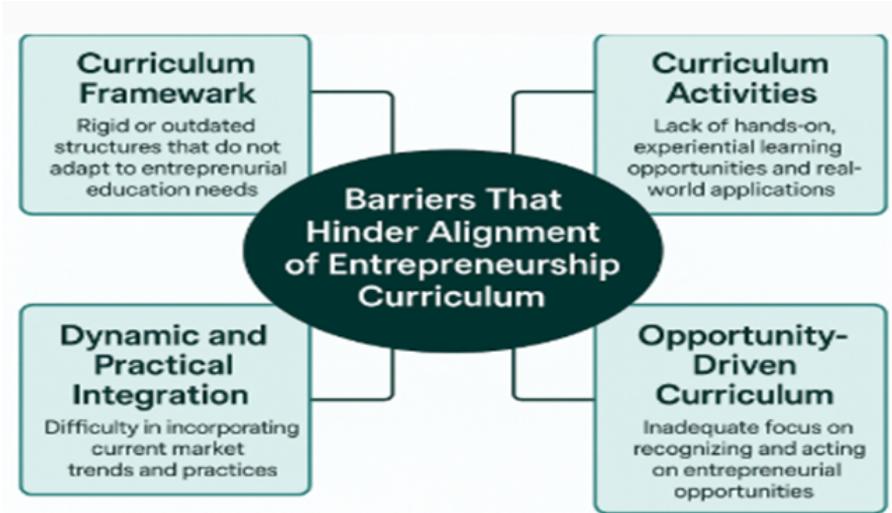
In identifying the dynamic and practical learning the curriculum offers for effective learning, the study found that five groups revealed the absence of dynamic and practical learning within the curriculum. Moreover, three groups maintained that the significant impact hindered graduates from recognising opportunities to develop critical and problem-solving skills. This signified that the entrepreneurship learning curriculum limited the prioritisation of practical engagement that equipped graduates, which is essential for preparing graduates for real-world challenges, as highlighted in the results of these authors (Hoffman, 2020; Cui et al., 2021; Iwu, 2022). As a result, a lack of a dynamic and practical-oriented curriculum offers graduates ineffective learning that fails to nurture an entrepreneurial mindset and skills.

The entrepreneurship curriculum, containing opportunity-driven learning, was highlighted, and several graduates from various groups maintained that the entrepreneurship education encountered was predominantly theoretical, failing to balance the learning with practical experience. However, 10 participants made it known that they were not motivated in the learning process and only used entrepreneurship as a complementary module, positioning themselves to read, write, and pass the examination. This is in line with Cui et al. (2021), who emphasised that an effective curriculum should provide learning opportunities to equip graduates with entrepreneurial skills and knowledge that lead to job creation.

The summary of the study

In the Figure 1 below, we present the barriers to the effectiveness of entrepreneurship curriculum as this study revealed.

Figure 1. Barriers to alignment of entrepreneurship curriculum.



CONCLUSION AND RECOMMENDATIONS

Conclusion

The study's findings revealed that most participants identified the entrepreneurship curriculum as lacking a distinct discipline where students can enrol to acquire entrepreneurship education. Moreover, this curriculum is not integrated into a non-interdisciplinary module, which deprives non-business students of the opportunity to instil entrepreneurial skills and knowledge. This gap impedes the entrepreneurship education curriculum's potential to produce entrepreneurial graduates in South Africa. Furthermore, it restricts the entrepreneurship education curriculum from offering engaging, dynamic, practical, and opportunity-driven entrepreneurial activities. However, curriculum alignment should include entrepreneurship education as a discipline within the business faculty and be embedded as an interdisciplinary module in a non-business context program. Such an approach would enable the delivery of innovative and skills-oriented learning that prepares graduates more adequately for entrepreneurial engagement.

Study Limitation

Like any other scholarly investigation, this study is subject to certain limitations, which, in turn, have highlighted valuable avenues for future research. The study encountered difficulties and delays in obtaining online approvals to conduct research at three universities in Cape Town, which impacted the number of institutions involved. Due to this constraint, the study was limited to two universities, from which 60 participants were interviewed. This sample size reached saturation, thereby meeting the eligibility criteria

for inclusion in the research.

Recommendations

A tailored curriculum is significant to entrepreneurship learning, which thus furthering is the development of graduate entrepreneurs and cannot be overlooked. The study highlighted that the absence of entrepreneurship education as a full-fledged discipline is a significant factor affecting early exposure to entrepreneurial learning, thereby impeding entrepreneurship intention and interest. Therefore, the researchers recommend that an entrepreneurship education curriculum be implemented as a field of study. Institutionalising entrepreneurship education as a field of study would significantly enhance its visibility and accessibility, positioning it as an attractive and viable academic choice for prospective students. Moreover, it will produce graduate entrepreneurs, just like other disciplines, and they will be positioned to contribute to economic competitiveness, development, and wealth creation.

Furthermore, extending the entrepreneurship curriculum into non-business programs is imperative; therefore, the study recommends embedding the curriculum as an interdisciplinary module tailored for non-business disciplines. This approach promotes entrepreneurial exposure to graduates from various fields of study, thereby identifying those with entrepreneurial mindsets and intentions.

Entrepreneurship curriculum activities were emphasised in this study as lacking, which hinders graduates' exposure to entrepreneurship learning that develops skills and knowledge geared toward equipping students to transform ideas into sustainable ventures. The study recommends the intentional integration of experiential learning into the curriculum to provide students with a broad understanding (beyond the classroom) and the motivation for entrepreneurship uptake.

Statement of disclosure

The authors have reported no potential conflicts of interest.

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Información Editorial

CONTENIDO GENERAL

Estudios de Administración [ISSN: 0719-0816] es una revista de negocios revisada por pares a doble ciego, publicada semestralmente por el Departamento de Negocios de la Universidad de Chile desde 1994, creada para brindar un foro académico para la comunidad académica de negocios chilena y latinoamericana. Estudios de Administración publica artículos de investigación empírica, artículos metodológicos, revisiones sistemáticas de literatura, artículos conceptuales y estudios de casos en todas las disciplinas empresariales tanto en inglés como en español.

Manuscritos de investigación originales y casos de enseñanza no publicados anteriormente en otros lugares, que abordan temas de Estrategia, Finanzas, Marketing, Contabilidad, Operaciones, Innovación, Gestión y Desarrollo de Recursos Humanos, Cambio Organizacional, Sistemas de Información, Cadena de Suministro, Emprendimiento y Toma de Decisiones, entre otros temas relevantes para los negocios latinoamericanos son el principal foco de publicación.

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Apuntamos a lectores de académicos, estudiantes graduados y ejecutivos de negocios de Iberoamérica y del mundo que buscan un conocimiento nuevo y sólido en el campo. Alentamos a autores e investigadores de la comunidad académica a presentar sus manuscritos para ser sometidos a revisión por pares en cualquiera de las siguientes categorías:

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Artículos de investigación basados en situaciones reales de negocios, diseñados para instruir a los estudiantes en las facultades de administración y empresa, proporcionando experiencias organizacionales sujetas a la realidad, que permiten aplicar proposiciones teóricas y conjugarlas con simulaciones prácticas y la toma de decisiones.

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- **Confidencialidad, privacidad, y consentimiento para publicación (material de terceros)***:

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Nota: Estudios de Administración traducirá el Resumen, las Palabras clave y las Declaraciones para aquellos autores no angloparlantes.

CUERPO DEL MANUSCRITO TÍTULOS DE SECCIÓN, ETIQUETAS Y SUBDIVISIONES

Los textos de informes de investigación tradicionales suelen incluir las siguientes secciones:

1) Introducción; 2) Revisión de la literatura o antecedentes teóricos - que pueden o no servir de base para formular hipótesis -; 3) Métodos de investigación; 4) Resultados y análisis; 5) Discusión; 6. Conclusiones; 7) Limitaciones e implicaciones de la investigación (si las hay); 8) Implicaciones prácticas o de gestión (si las hay); 8) Direcciones para futuras investigaciones (si las hay); 9) Apéndices (si los hay); y 10) Referencias.

De manera similar, para Revisiones de literatura, Casos de enseñanza y Artículos de conexión con la práctica, divida su manuscrito en secciones y subsecciones claramente definidas y numeradas, incluyendo siempre la sección de Referencias al final.

Los Títulos y Subtítulos deben ser breves, claramente definidos y en su propia línea separada. Numere los títulos de modo que los títulos de nivel superior se numeren 1, 2, 3, p. ej., comenzando con la sección Introducción y terminando en la sección Conclusiones. Los subtítulos de segundo nivel deben estar numerados 1.1, 1.2, 1.3, etc.

No utilice Funciones de Campo.

APÉNDICES

Si su manuscrito necesita incluir Apéndices, identifique cada tema por separado y etiquételo con una letra en secuencia (Apéndice A, Apéndice B, Apéndice C, etc.), de acuerdo con el orden en que se mencionan en el cuerpo del manuscrito. Para citar un Apéndice, utilice citas entre parentéticas. Por ejemplo, escriba en el cuerpo del manuscrito (ver el Apéndice D para indicadores y proyecciones económicas para América Latina y el Caribe), o simplemente (ver el Apéndice D). Cualquier cita dentro del Apéndice debe incluirse en la lista de Referencias.

Si sus apéndices incluyen Tablas, Figuras, Fórmulas y/o Ecuaciones, agregue la letra del Apéndice, dando una numeración separada: Por ejemplo, numere la tercera Figura en el Apéndice D, como “Figura D3”. Cada etiqueta de sección del Apéndice presenta un “Título de formato de nivel 1” y debe tener un subtítulo, encabezado con un “Formato de nivel 2”. Por ejemplo:

Apéndice D **Indicadores y proyecciones económicas** **para América Latina y el Caribe**

La Tabla D1 muestra los indicadores económicos más importantes de...

TABLAS, FIGURAS, ECUACIONES Y FÓRMULAS

Las Tablas y las Figuras (si es posible) deben enviarse como texto editable y no como imágenes para facilitar el proceso de revisión. Las Figuras y Tablas se pueden colocar junto al texto relevante en el artículo o en páginas separadas al final. Si se presentan en páginas separadas, se debe hacer referencia a ellos dentro del cuerpo del manuscrito para indicar su ubicación en líneas separadas como “INSERTE LA TABLA X AQUÍ”.

No incluya archivos o imágenes que tengan una resolución demasiado baja. Asegúrate

de que:

- Las líneas y letras son legibles para su revisión, manteniendo las letras y el tamaño de las Figuras y Tablas uniformes (aproximadamente 8-12 pt, o 2-3 mm) variando mínimamente el tamaño entre sus elementos (p. Ej., Ejes, títulos de gráficos, etiquetas de datos, encabezados, etc.).

- Asegúrese de que las Figuras, Tablas, Ecuaciones y Fórmulas tengan un número correlativo (1, 2, 3, etc.), para distinguirlos, y nombre sus archivos como “Figura” o “Tabla” seguido de su número (por ejemplo, Figura1 o Tabla 1).

- Los archivos de Figuras, “Guarde como” formato .JPG, con un mínimo de 300 ppp (evite los archivos optimizados para el uso de la pantalla, por ejemplo, GIF, BMP, PICT, WPG). La importación/escaneo de Dibujos de líneas debe estar en formato de mapa de bits (.BMP o .DIB), con una resolución mínima de 1200 ppp.

- Guarde sus archivos de tabla con formato .xls o .xlsx. Las Notas para tablas y figuras deben especificarse debajo de ellas, utilizando Times New Roman de 8 puntos, siguiendo el orden General (primero), Específico (segundo) y Probabilidad (tercero).

- Las notas generales explican, califican o proporcionan información sobre la Tabla / Figura, incluidas las abreviaturas, los símbolos y las unidades de medida. Incluyen la cita de la fuente original de publicación en forma de referencia siguiendo el formato de Autor (es), (Año).

- Las notas específicas identifican elementos clave dentro de la Tabla/Figura utilizando letras minúsculas en superíndice (p. ej., a, b, c).

- Las notas de probabilidad muestran los resultados de las pruebas de significancia estadística (p. ej., * $p < .05$, de dos colas. ** $p < .01$, de una cola, *** $p < .001$), etc. Para Figuras, cite cualquier tipo de gráfico, cuadro, dibujo, mapas, diagramas, fotografías, etc., en su manuscrito como Figura.

Utilice el Editor de ecuaciones o Math Type para Ecuaciones y Fórmulas. En el caso de

ecuaciones y fórmulas que no quepan en una columna, indique los puntos de corte apropiados.

El Material Complementario (p. ej., imágenes, archivos de video o audio, aplicaciones) son bienvenidos para revisión y estarán disponibles para los lectores exactamente como estén en la versión definitiva; por lo tanto, asegúrese de haber proporcionado un archivo actualizado en la fase previa a la publicación.

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Las Comunicaciones Personales que puedan ser consultadas por el lector, deben incluirse en la lista de referencias, siguiendo la estructura general: Autor, A. (Año, Mes Fecha). Tipo de entrevista.

REFERENCIAS

El orden en la lista de referencias es alfabético, por el nombre del grupo o el apellido de un autor individual. Si hay varias publicaciones por autor, ordénelas de la primera a la más reciente. Use solo las iniciales para el nombre de un autor individual: ‘Serrano, J.’, no ‘Serrano, Juan’.

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Editorial information

GENERAL CONTENT

Estudios de Administración [ISSN: 0719-0816] is a double-blind peerreviewed business Journal that has been published

on a semester basis by the Business Department of the University of Chile since 1994, created to provide an academic forum for Chilean and Latin American business academic community. Estudios de Administración publishes empirical research papers, methodological papers, systematic literature reviews, conceptual papers, and case studies in all business disciplines in both English and Spanish.

Original manuscripts not previously published elsewhere, addressing matters of Strategy, Finance, Marketing, Accounting, Operations, Innovation, Management and Development of Human Resources, Organizational Change, Information Systems, Supply Chain, Entrepreneurship and Decision-Making, among other topics, relevant for Latin American business are the main focus of publication.

AIMS AND SCOPE

We target a readership of Ibero-American and world scholars, graduate students, and business executives looking for new and solid knowledge in the field. We encourage authors and researchers from the academic community to present manuscripts for peer review in any of the five categories:

• Empirical research papers:

Results of original research projects with empirical data analysis (qualitative, quantitative and/or mixed) associated with existing literature, and research replicas with consistent or non-consistent results.

• Methods, methodological approaches and measuring instruments:

Manuscripts presenting the use of different methodologies and the application of models in different contexts, as well as studies that validate measurement instruments, bibliometrics, meta-analysis, or verifications of experimental procedures, which can be replicated are welcomed.

• Literature reviews:

Contemporary articles that conceptually

and theoretically synthesize, integrate or advance different scopes in business administration disciplines, particularly in Latin America and emerging countries.

• **Teaching cases:**

Research articles based on real business situations, designed to instruct students in the faculties of administration and business, providing organizational experiences subject to reality, which allow the application of theoretical propositions and combine them with practical simulations and decision making.

• **Connection to practice:**

Research studies that respond to the growing need for a greater focus on how business management and administration function, or on the way in which practitioners carry out their work in organizational practice. Research approaches such as Strategy-as-Practice (SAP), Marketing-as-Practice (MAP), Innovation-as-Practice (IAP), Entrepreneurship-as-Practice (EAP), etc. are welcome.

AUTHOR GUIDELINES

Editorial Process

To publish manuscripts in Estudios de Administración, authors should send their contribution via the Open Journal Systems platform by registering or logging in at the platform.

The Editor will review the manuscript and will return it to the author(s), in no more than a week, indicating whether or not the manuscript will be sent for peer review, suggesting different paths for the manuscript.

Manuscripts will be blind reviewed by two referees according to different criteria including: clarity, literature review and conceptual development, method and data analysis, implications and relevance for theory and practice, and contribution to the discipline.

Reviewers may suggest: Acceptance; Acceptance with minor revision; Conditional acceptance with major revision; Rejection

of the manuscript.

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PREPARATION

As part of the submission process, authors are required to check off their submission's compliance with all of the following items, and submissions may be returned to authors that do not adhere to these guidelines.

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- Confirm that the manuscript has been submitted solely to this Journal and has not been published, is not in press, nor has it been submitted elsewhere.
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- Confirm that all the research meets the Journal's ethical guidelines, including adherence to the legal requirements of the study country.
- Confirm that there are no conflicts of interest with any entity or institution, or of a personal nature that could inappropriately have influenced or biased this work.
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- Manuscripts should be between 5,000 and 7,000 words in length (including references, tables, and figures) in English or Spanish.
- They must include a 250-word ABSTRACT in both English and Spanish, synthesizing the main topic addressed by the paper, the method used in its preparation and its major findings.
- The author(s) must also provide from three (3) to six (6) KEYWORDS, and at least three (3) JEL Codes (Journal of Economic Literature codes) for indexation and search.

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- Font: 12-pt Times New Roman.
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- Page numbers should be located in the upper righthand corner. Use the automatic page numbering function.
- For equations, use MathType or Equation Editor.

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- Do not use page headers, footers or watermarks that would lead to any identification of the author(s) and/or the institution(s).

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TITLE PAGE (first page)

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AUTHOR(S) NAMES AND AFFILIATION(S):

All authors must include given name(s) and family name(s), institution, email and ORCID id (if applicable). Please check that all names are accurately spelled. Avoid identifying the author(s) in the rest of the manuscript in order to ensure anonymity.

ABSTRACT:

All manuscripts must include a 250-word abstract in both English and Spanish, synthesizing the main topic addressed by the paper, the research method used and the major findings.

KEYWORDS AND JEL CODES:

Authors must also provide from three (3) to six (6) keywords and three (3) JEL Codes for indexation and search.

DECLARATIONS:

(Please include the headings that apply to your manuscript. Those marked with * are required). In the final version (once accepted for publication) these will go before the References section:

- **Conflict of interest*:** The author(s) of the manuscript must state if there are any kind of conflicts of interest with any entity or institution, or of a personal nature in this publication, that may have inappropriately influenced or biased this work.

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page, which is removed before sending the manuscript to the peer-reviewers in order to ensure objectivity in the evaluation.

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BODY OF THE MANUSCRIPT

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Texts in traditional research reports usually include the following sections:

1) Introduction; 2) Review of literature or theoretical background - which may or may not serve as grounds for formulating hypotheses -; 3) Research methods; 4) Results and analysis; 5) Discussion; 6) Conclusions; 7) Limitations and implications of the research (if any); 8) Practical or managerial implications (if any); 8) Directions for future research (if any); 9) Appendices (if any); and 10) References.

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Appendix D

Economic indicators and projections for Latin America and the Caribbean

Table D1 shows the most important economic indicator of the ...

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