



Artificial Intelligence Adoption in MSMEs: A Comparative Analysis of Mexico and Chile

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Abstract. Artificial Intelligence (AI) has become a strategic resource for enhancing competitiveness, innovation, and digital transformation among Micro, Small and Medium-sized Enterprises (MSMEs). However, significant differences in AI adoption persist across Latin American countries, and comparative evidence explaining the institutional, technological, and organizational factors underlying these disparities remains limited. This study aims to comparatively analyze the factors influencing AI adoption among MSMEs in Mexico and Chile. A qualitative comparative documentary research design was employed based on the systematic analysis of peer-reviewed literature, institutional reports, and official government publications. Documentary evidence was examined through qualitative content analysis, source triangulation, and a comparative analytical framework integrating seven dimensions related to AI adoption. The findings indicate that Chile has achieved a more mature AI adoption process through coherent public policies, coordinated institutional governance, and stronger innovation ecosystems, whereas Mexico has developed greater technological infrastructure and private investment but continues to face fragmented institutional coordination, heterogeneous digital maturity, and organizational capability constraints. The comparative analysis demonstrates that technological infrastructure alone is insufficient to accelerate AI adoption. Instead, successful implementation depends on the interaction among governance, organizational capabilities, human capital, financial accessibility, and collaborative innovation ecosystems. The study contributes by proposing an integrated comparative framework that advances the understanding of AI adoption in emerging economies while providing evidence to support public policy design and strategic decision-making aimed at strengthening the digital competitiveness of MSMEs throughout Latin America.

Keywords: Artificial Intelligence; MSMEs; Digital Transformation; Institutional Governance; Innovation Ecosystems; Latin America.

1 Introduction

Artificial Intelligence (AI) is rapidly reshaping the competitive landscape of businesses worldwide. While large corporations increasingly integrate AI into strategic decision-making and operational processes, adoption among Micro, Small

and Medium-sized Enterprises (MSMEs) remains highly uneven, particularly across emerging economies. This disparity has generated growing concern among researchers and policymakers because MSMEs account for the majority of businesses and employment worldwide, yet many continue facing structural barriers that limit their digital transformation ([1] & [2]).

Recent advances in generative AI, machine learning, predictive analytics, and intelligent automation have transformed AI from a complementary digital technology into a strategic organizational capability. Beyond automating routine activities, AI supports data-driven decision-making, operational efficiency, customer relationship management, innovation, and organizational resilience. Nevertheless, the benefits of AI are not distributed equally across firms or countries, suggesting that technological availability alone does not guarantee successful adoption [3].

International evidence increasingly suggests that successful AI adoption depends on a complex interaction among institutional governance, technological infrastructure, organizational capabilities, digital skills, innovation ecosystems, and public policy. Consequently, countries with comparable technological resources frequently achieve substantially different adoption outcomes, highlighting the importance of institutional and organizational conditions beyond technological investment itself [4].

Mexico and Chile provide two contrasting yet complementary contexts for examining AI adoption among MSMEs. Mexico has experienced rapid technological expansion supported by private investment, digital infrastructure, and the presence of global technology providers ([5] & [6]). However, institutional coordination remains fragmented, limiting the diffusion of AI among smaller firms. Conversely, Chile has developed a more coordinated governance model through its National Artificial Intelligence Policy, promoting collaboration among government, academia, and industry while strengthening innovation ecosystems ([4] & [7]). These contrasting trajectories provide an appropriate setting for understanding how institutional and organizational factors shape AI adoption in emerging economies.

Although previous research has extensively examined AI adoption, most studies have focused on individual countries, specific industries, technological readiness, or organizational factors in isolation. Consequently, limited comparative evidence explains how institutional governance, technological ecosystems, and organizational capabilities interact to influence AI adoption among MSMEs across Latin American countries. This gap restricts both theoretical understanding and the design of effective public policies supporting digital transformation in emerging economies ([8] & [5]).

Although previous studies have demonstrated the benefits of Artificial Intelligence (AI) for improving productivity and innovation, most have analyzed AI adoption within individual countries or specific sectors. Consequently, comparative evidence explaining how institutional, technological, and organizational factors jointly influence AI adoption among Micro, Small and Medium-sized Enterprises (MSMEs) remains limited, particularly in Latin America ([9], [10] & [4]).

To address this gap, this study examines the following research question: What institutional, technological, and organizational factors explain the differences in AI adoption among MSMEs in Mexico and Chile? Accordingly, the objective is to comparatively analyze these factors by identifying the similarities, differences, and contextual conditions shaping digital transformation in both countries. The study contributes by integrating institutional, technological, and organizational dimensions into a comparative analytical framework, providing evidence to support future research and the design of public policies and business strategies that promote AI adoption among MSMEs in Latin America ([11], [4] & [8]).

Accordingly, this study contributes to the literature by proposing an integrated comparative framework that explains AI adoption through the interaction of institutional governance, technological ecosystems, and organizational capabilities. Beyond comparing Mexico and Chile, the research provides evidence supporting the design of public policies and organizational strategies aimed at accelerating AI adoption and strengthening MSME competitiveness across Latin America.

2 Research method

This study adopted a qualitative comparative documentary research design to analyze the adoption of Artificial Intelligence (AI) among Micro, Small and Medium-sized Enterprises (MSMEs) in Mexico and Chile. Documentary research is appropriate for examining emerging technological phenomena because it enables the systematic collection, organization, and interpretation of evidence from academic publications, institutional reports, international organizations, and official government documents. This approach facilitates the comparison of multiple sources to identify patterns, similarities, and contextual differences across countries ([11] & [12]).

A comparative analytical approach was employed to examine two Latin American countries with different levels of digital maturity, institutional development, and AI policy implementation. This methodology is particularly suitable for identifying the institutional, technological, and organizational factors influencing AI adoption while generating evidence relevant to public policy and business decision-making [9].

The research followed five sequential stages: (1) systematic identification of documentary sources; (2) selection of documents using predefined inclusion and exclusion criteria; (3) organization of the evidence through a comparative analytical matrix comprising seven analytical dimensions; (4) qualitative content analysis to identify patterns and contextual differences; and (5) comparative interpretation of the findings to explain AI adoption in MSMEs.

By integrating academic, institutional, and governmental sources, this methodological approach strengthens the reliability of the analysis and provides a comprehensive understanding of AI adoption in emerging economies, consistent with recent recommendations for comparative documentary research ([10] & [4]).

2.1 Research Design

This study adopted a qualitative, non-experimental, cross-sectional, and comparative research design to examine Artificial Intelligence (AI) adoption among Micro, Small and Medium-sized Enterprises (MSMEs) in Mexico and Chile. A qualitative approach was selected to interpret the institutional, technological, and organizational conditions influencing AI adoption through the systematic analysis of documentary evidence rather than statistical inference [12].

The research followed a non-experimental design because no variables were manipulated, relying instead on documentary evidence from peer-reviewed articles, reports by international organizations, government publications, and institutional documents. It was also cross-sectional, as the analysis focused on evidence published between 2020 and 2025, capturing the current stage of AI development and digital transformation in Latin America.

A comparative perspective was adopted because Mexico and Chile share similar economic structures and a high participation of MSMEs but differ in digital maturity, technological infrastructure, innovation ecosystems, and AI-related public policies. Comparing these contexts enabled the identification of similarities, differences, and contextual factors influencing AI adoption.

The unit of analysis comprised documentary sources addressing AI adoption among MSMEs in both countries. To strengthen methodological rigor, the study employed source triangulation, integrating academic literature, institutional reports, official statistics, and policy documents to improve the credibility and consistency of the comparative findings ([11], [10] & [4]).

2.2 Information Collection Techniques

Documentary evidence was collected through a systematic literature search designed to identify scientific and institutional publications related to Artificial Intelligence (AI) adoption among Micro, Small and Medium-sized Enterprises (MSMEs) in Mexico and Chile. The search was conducted between January and March 2026 using peer-reviewed scientific databases, institutional repositories, and official government sources ([11] & [12]).

To ensure the quality, relevance, and timeliness of the evidence, only publications issued between 2020 and 2025 were considered. The review prioritized peer-reviewed articles, reports from international organizations, government publications, and official statistical sources. Scientific literature was retrieved from Scopus, Web of Science, and Google Scholar, while institutional information was obtained from the OECD AI Policy Observatory, ECLAC, UNESCO, and official government portals of Mexico and Chile.

The search strategy combined controlled descriptors and free-text keywords, including Artificial Intelligence, AI adoption, MSMEs, SMEs, Digital

Transformation, Mexico, and Chile, using Boolean operators (AND and OR) to maximize retrieval accuracy. (Table 1) summarizes the search strategy applied in this study.

Table 1. Documentary Search Strategy.

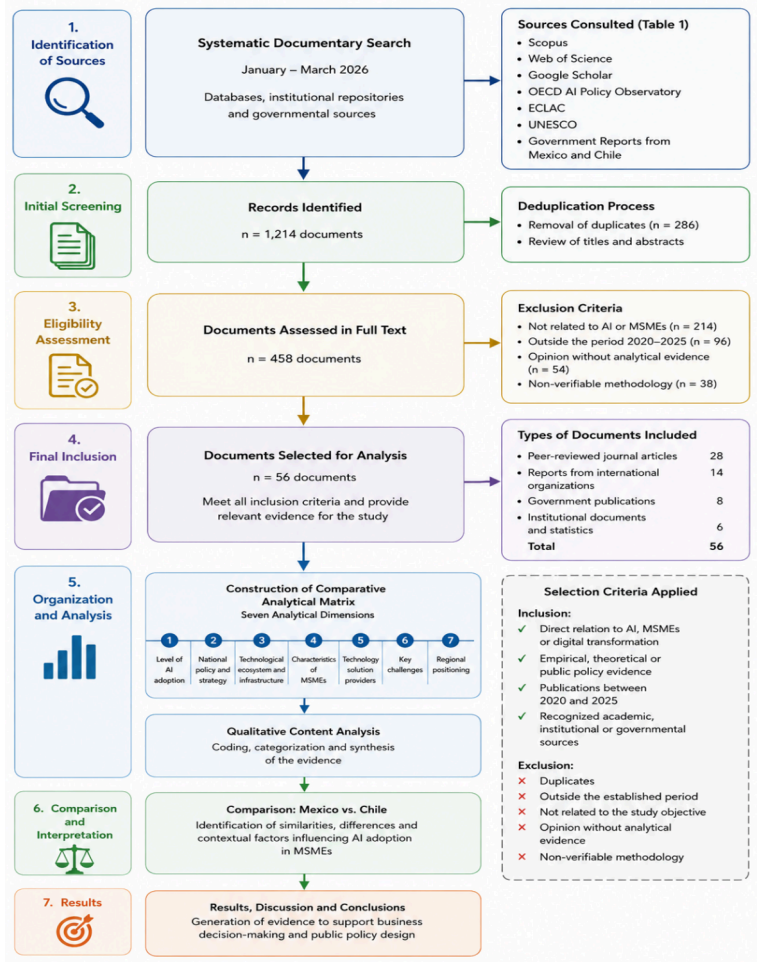
Database / Source	Search keywords	Purpose
Scopus	"Artificial Intelligence", "MSMEs", "SMEs", "Digital Transformation", "Mexico", "Chile"	Peer-reviewed scientific literature
Web of Science	"Artificial Intelligence" AND "SMEs"	High-impact scientific publications
Google Scholar	"AI adoption" OR "Artificial Intelligence" AND MSMEs	Complementary academic literature
OECD AI Policy Observatory	Artificial Intelligence; SMEs; Digital Transformation	International policy reports
ECLAC (CEPAL)	Artificial Intelligence; Latin America; Digital Economy	Regional evidence
UNESCO	AI Readiness; Artificial Intelligence Policy	International AI governance reports
Government reports (Mexico and Chile)	National AI Strategy; Digital Transformation; MSMEs	Official policy documents

Note. Prepared by the authors.

2.3 Source Selection Criteria

A structured selection process was applied to ensure the inclusion of relevant, reliable, and methodologically sound evidence. The review included peer-reviewed articles, books, institutional reports, official government publications, and statistical documents related to Artificial Intelligence (AI), digital transformation, innovation, and MSMEs in Mexico, Chile, and Latin America, published between 2020 and 2025. Priority was given to evidence produced by internationally recognized organizations, including the OECD, UNESCO, ECLAC, and national government institutions [9].

Duplicate records, publications lacking methodological rigor, opinion papers without analytical evidence, and documents unrelated to the research topic were excluded, except for seminal methodological references. Although this study does not constitute a formal systematic literature review, the selection process followed recognized recommendations for documentary research to ensure transparency and replicability ([9] & [12]); Figure 1 illustrates the document selection process.



Note. Prepared with the assistance of ChatGPT.

Figure 1. Research Methodological Process.

2.4 Analysis Technique

The documentary evidence was analyzed using qualitative content analysis, which enables the systematic coding, categorization, and interpretation of textual information to identify recurring themes, patterns, and relationships ([11] & [12]).

A comparative analytical matrix was developed to organize the selected evidence into seven dimensions: (1) AI adoption level, (2) national policy and strategy, (3) technological ecosystem and infrastructure, (4) characteristics of MSMEs, (5) technology solution providers, (6) main challenges, and (7) regional positioning ([4]

& [10]). Documents were systematically coded and compared across these dimensions to identify similarities, differences, and contextual factors influencing AI adoption in Mexico and Chile.

To enhance analytical rigor, evidence from peer-reviewed articles, international organizations, government publications, and institutional reports was triangulated, strengthening the credibility and consistency of the comparative analysis ([9] & [4]). The findings were subsequently synthesized to explain how institutional, technological, and organizational factors shape AI adoption among MSMEs.

2.5 Quality Assurance

To ensure the rigor and credibility of the study, several quality assurance strategies were implemented throughout the research process. These included source triangulations, the application of predefined search and selection criteria, and the use of a standardized comparative analytical matrix. Together, these procedures reduced selection bias, improved analytical consistency, and enhanced the transparency and reproducibility of the research ([11] & [9]).

In addition, documentary evidence from peer-reviewed publications, international organizations, government reports, and official statistics was systematically contrasted to validate the consistency of the findings. The integration of multiple sources and homogeneous analytical criteria strengthened the reliability and credibility of the comparative analysis [12].

2.6 Ethical Considerations

This study adhered to the principles of academic integrity, transparency, and responsible research conduct. Because the research was based exclusively on publicly available documentary sources, it did not involve human participants, personal data, confidential information, or procedures requiring approval from an institutional ethics committee.

All documentary sources were accurately identified, cited, and interpreted to preserve their original meaning and respect intellectual property rights in accordance with recognized standards of academic integrity [12]. In addition, Artificial Intelligence (AI)-assisted tools were used solely to support language editing and the preliminary design of illustrative figures. All methodological decisions, data interpretation, critical analysis, and the final version of the manuscript remained the exclusive responsibility of the authors, consistent with current recommendations on the ethical use of generative AI in scientific publishing ([13] & [14]).

2.7 Methodological Limitations

The findings of this study should be interpreted considering several limitations inherent to documentary research. First, the analysis relied exclusively on secondary

sources, making the results dependent on the availability, quality, and timeliness of the documentary evidence published between 2020 and 2025. Second, although a systematic search was conducted using internationally recognized databases and official repositories, relevant publications may have been omitted because of differences in database coverage, indexing, or publication language. Third, the comparative analysis focused exclusively on Mexico and Chile; therefore, the findings should not be generalized to countries with different institutional, economic, or technological contexts.

Despite these limitations, the systematic documentary review, predefined selection criteria, comparative analytical framework, qualitative content analysis, and source triangulation provide a robust basis for examining AI adoption among MSMEs. Future research could complement these findings through empirical approaches, such as surveys, interviews, case studies, or mixed-methods designs, while extending the comparative analysis to other Latin American countries.

3 Results

3.1 Level of AI Adoption

The comparative documentary analysis indicates that Artificial Intelligence (AI) adoption has progressed in both Mexico and Chile, although at different levels of maturity. While MSMEs in both countries increasingly recognize AI as a strategic tool for improving productivity, competitiveness, and innovation, Chile exhibits a more consolidated adoption process, whereas Mexico continues advancing through a more heterogeneous trajectory.

In Mexico, AI adoption has expanded beyond large corporations. Approximately 30% of organizations have adopted AI technologies [15], and 64% of SMEs have incorporated AI into at least part of their operations [16]. However, adoption remains constrained by low digital maturity, affecting more than 70% of SMEs, as well as limited access to financing, specialized talent, and organizational capabilities ([17] & [10]). Furthermore, only 29% of organizations have established comprehensive AI strategies, while over 51% continue facing challenges related to data governance and cybersecurity [15].

By contrast, Chile demonstrates higher organizational readiness, with 93% of companies expecting AI to positively impact their activities and adoption rates reaching 80% among large enterprises and 70% among MSMEs [18]. This progress has been supported by the National Artificial Intelligence Policy, which has strengthened collaboration among government, academia, and the private sector.

Overall, the findings suggest that AI adoption among MSMEs depends not only on technological availability but also on institutional support, organizational capabilities, and digital skills, resulting in a more mature adoption process in Chile than in Mexico.

3.2 National Policy and Strategy

The comparative analysis identifies institutional governance and public policy as key factors explaining the differences in AI adoption between Mexico and Chile. Although both countries recognize AI as a strategic driver of productivity and innovation, their approaches to governance differ substantially.

In Mexico, AI development has been driven primarily by private investment, technology companies, and academic institutions. [19] Represents progress toward a coordinated governance framework, its implementation remains under development [4]. Consequently, AI adoption among MSMEs continues to depend largely on market-driven initiatives, with limited access to coordinated financial incentives, technical assistance, and workforce development programs [7].

In contrast, Chile has implemented a more integrated governance model through its National Artificial Intelligence Policy, first introduced in 2021 and updated in 2024. This strategy has strengthened collaboration among government, academia, research centers, and the private sector, fostering a favorable environment for AI adoption. According to the United Nations Educational, Scientific and Cultural Organization [8], this coordinated framework integrates digital infrastructure, human capital development, research, and regulatory initiatives, contributing to Chile's regional leadership in AI readiness [5].

Overall, the findings indicate that coherent public policies and effective institutional coordination play a more decisive role in AI adoption than technological infrastructure alone, positioning Chile as a regional benchmark while Mexico continues strengthening its institutional framework.

3.3 Technological Ecosystem and Infrastructure

The comparative analysis indicates that both Mexico and Chile have made significant investments in digital infrastructure to support Artificial Intelligence (AI) development. However, the documentary evidence suggests that technological infrastructure alone does not guarantee higher levels of AI adoption among Micro, Small and Medium-sized Enterprises (MSMEs). Rather, its effectiveness depends on the interaction between institutional coordination, innovation ecosystems, and complementary public policies that facilitate technology diffusion.

Mexico has strengthened its position as one of Latin America's principal technology markets. According to the Latin American Artificial Intelligence Index (ILIA), the country ranks as the second-largest data center market in the region, with 53 operational facilities and projected investments exceeding USD 9.19 billion [5]. Despite this favorable infrastructure, AI adoption among MSMEs remains constrained by limited access to financing, shortages of specialized digital talent, and insufficient coordination of public support programs. Consequently, the country's technological capacity has not yet translated into widespread organizational transformation.

In contrast, Chile has developed a more integrated innovation ecosystem supported by long-term public policies and strategic investments. The country currently operates 58 data centers, including 22 international facilities, while national investment plans allocate approximately USD 2.5 billion for new infrastructure and USD 116 million for AI research and innovation [20]. These investments have strengthened collaboration among government, academia, research centers, and technology companies, facilitating knowledge transfer and the development of AI solutions tailored to business needs.

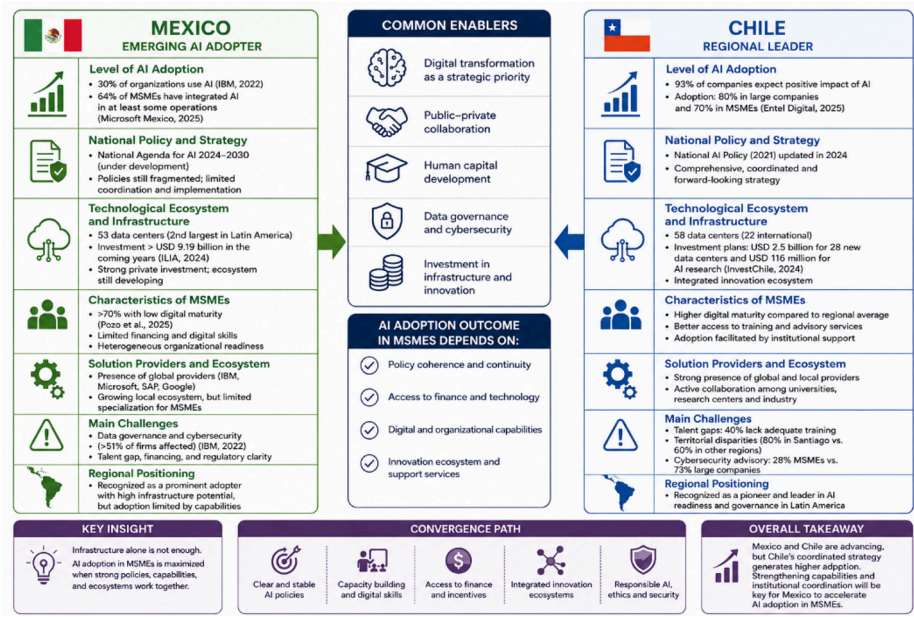
Overall, the comparative evidence indicates that digital infrastructure is a necessary but insufficient condition for accelerating AI adoption among MSMEs. While Mexico demonstrates considerable technological capacity, Chile illustrates how coordinated innovation ecosystems and institutional collaboration can maximize the impact of technological investments. These findings suggest that expanding digital infrastructure should be accompanied by governance mechanisms, innovation networks, and organizational capabilities that enable MSMEs to convert technological resources into sustained competitive advantages.

3.4 Characteristics of MSMEs

The comparative analysis indicates that the characteristics of Micro, Small and Medium-sized Enterprises (MSMEs) are key determinants of Artificial Intelligence (AI) adoption in both Mexico and Chile. Beyond public policies and technological infrastructure, organizational capabilities—including digital maturity, human capital, financial resources, and organizational readiness—largely explain the different adoption patterns observed across firms.

In Mexico, although 64% of SMEs have incorporated AI into part of their operations [16], more than 70% continue operating with low levels of digital maturity, limiting the implementation of advanced AI solutions [17]. Limited access to financing, shortages of specialized human capital, and insufficient organizational capabilities remain major barriers to AI adoption ([10] & [4]). By contrast, approximately 70% of Chilean MSMEs have adopted AI [18], supported by technical training, advisory services, and public-private collaboration. However, regional disparities persist, with adoption reaching nearly 80% in Santiago but only 60% in other regions.

Overall, the findings indicate that successful AI adoption depends not only on technological infrastructure but also on firms' internal capabilities. As illustrated in (Figure 2), the interaction among institutional governance, organizational capabilities, human capital, access to financing, and innovation ecosystems explains the higher level of AI adoption observed in Chile and highlights the importance of coordinated strategies for strengthening AI implementation among MSMEs.



Note. Figure prepared with the assistance of ChatGPT (OpenAI) and subsequently reviewed and validated by the authors.

Figure 2. Comparative Framework of Artificial Intelligence Adoption in MSMEs: Mexico and Chile.

3.5 Technology Solution Providers

The comparative documentary analysis indicates that technology solution providers play a strategic role in promoting Artificial Intelligence (AI) adoption among Micro, Small and Medium-sized Enterprises (MSMEs). However, the findings suggest that their impact depends not only on the availability of AI solutions but also on the level of collaboration established among technology companies, governments, universities, and business support organizations.

Mexico benefits from one of the largest digital technology markets in Latin America, where global providers such as IBM, Microsoft, Google Cloud, Oracle, Amazon Web Services (AWS), and SAP have expanded access to AI solutions for businesses. Although this broad technological offering has facilitated AI adoption, many MSMEs continue facing barriers related to limited financial resources, insufficient technical expertise, and low digital capabilities, restricting the effective integration of these technologies ([15] & [16]).

In contrast, Chile's technology market is smaller but operates within a more coordinated innovation ecosystem. Alongside international technology providers, organizations such as Entel Digital support AI adoption through technical assistance,

digital transformation programs, and cybersecurity services. These initiatives are reinforced by collaboration among universities, research centers, government agencies, and innovation organizations, creating favorable conditions for technology transfer and AI implementation among MSMEs ([18] & [8]).

Overall, the comparative evidence indicates that the main difference between both countries lies not in the availability of AI technologies but in the degree of institutional integration supporting their adoption. While Mexico benefits from a larger technology market and stronger private investment, Chile demonstrates how coordinated innovation ecosystems can enhance technology transfer, strengthen organizational capabilities, and accelerate AI adoption among MSMEs. These findings suggest that expanding access to AI technologies should be complemented by collaborative networks and public support mechanisms that facilitate their effective implementation.

3.6 Main Challenges

The comparative analysis identifies several common challenges that continue limiting Artificial Intelligence (AI) adoption among Micro, Small and Medium-sized Enterprises (MSMEs) in both Mexico and Chile. Although the intensity of these barriers differs between countries, the evidence indicates that AI implementation depends on overcoming organizational, financial, institutional, and human capital constraints simultaneously.

A major challenge concerns the shortage of specialized human capital. Both countries continue facing limited availability of professionals with expertise in AI, data science, cybersecurity, and digital transformation, restricting the capacity of MSMEs to implement and manage AI-based solutions ([4] & [8]). Financial constraints further hinder adoption, particularly among micro and small enterprises, where limited access to financing reduces investment in software, digital infrastructure, employee training, and organizational modernization.

The findings also reveal important challenges related to digital governance and organizational readiness. In Mexico, only 29% of organizations have implemented comprehensive AI strategies, while 51% continue experiencing difficulties in data governance and cybersecurity [15]. In Chile, despite higher adoption levels, approximately 40% of companies identify insufficient employee training as a major obstacle, and only 28% of MSMEs receive specialized cybersecurity advisory services compared with 73% of large enterprises [18].

Territorial disparities represent an additional constraint in both countries. Technological infrastructure, specialized talent, and innovation ecosystems remain concentrated in major metropolitan areas, limiting access to digital resources and technical support for MSMEs operating in peripheral regions.

Overall, the comparative evidence demonstrates that AI adoption remains a multidimensional challenge requiring coordinated public policies, investment in digital infrastructure, workforce development, organizational modernization, and improved access to financing. Addressing these barriers simultaneously will be essential for enabling MSMEs to fully capitalize on the productivity and competitiveness benefits associated with Artificial Intelligence.

3.7 Regional Positioning

The comparative documentary analysis positions both Mexico and Chile among the leading countries promoting Artificial Intelligence (AI) adoption in Latin America, although each follows a distinct development trajectory. Mexico has emerged as one of the region's largest AI markets, supported by expanding digital infrastructure, significant private investment, and the presence of major international technology providers. Nevertheless, institutional fragmentation and uneven organizational capabilities continue limiting the widespread adoption of AI among Micro, Small and Medium-sized Enterprises (MSMEs).

In contrast, Chile has consolidated its position as a regional benchmark through coherent public policies, coordinated institutional governance, and sustained investment in research, innovation, and digital infrastructure. Its leading position in the Latin American Artificial Intelligence Index (ILIA) reflects the effectiveness of an integrated strategy that combines technological development with long-term policy planning.

Overall, the comparative evidence indicates that regional leadership in AI depends not only on technological capacity or market size but also on the interaction among institutional governance, public policy continuity, organizational capabilities, human capital development, and collaborative innovation ecosystems. While Mexico demonstrates considerable technological potential, Chile illustrates how coordinated governance can accelerate AI adoption and strengthen the digital competitiveness of MSMEs.

4. Discussion

The findings of this study indicate that Artificial Intelligence (AI) adoption among Micro, Small and Medium-sized Enterprises (MSMEs) depends on a combination of technological, institutional, and organizational factors rather than on digital infrastructure alone. Although Mexico possesses one of the largest technological ecosystems in Latin America, supported by extensive data center capacity and substantial private investment, Chile demonstrates higher levels of AI adoption among MSMEs. This contrast suggests that infrastructure, while essential, is insufficient to drive digital transformation without coherent public policies, institutional coordination, and organizational readiness.

This interpretation is consistent with recent international evidence emphasizing that successful AI adoption requires the interaction of governance mechanisms, human capital, innovation ecosystems, and organizational capabilities [4], digital infrastructure provides the necessary foundation for technological development, but productivity gains depend on firms' capacity to integrate AI into their strategic and operational processes. Likewise countries achieving sustained progress in AI have combined investments in digital infrastructure with long-term governance frameworks, regulatory certainty, and continuous workforce development [8].

The comparison between Mexico and Chile reinforces this perspective. While Mexico has strengthened its technological capacity through private investment, fragmented governance and uneven digital maturity continue to limit AI diffusion among MSMEs. In contrast, Chile has benefited from stronger institutional coordination linking government, academia, research centers, and the private sector, thereby facilitating knowledge transfer and accelerating technology adoption. These findings suggest that AI readiness should be understood as the outcome of coordinated institutional and organizational efforts rather than as a direct consequence of technological investment alone.

Furthermore, both countries continue facing structural barriers, including shortages of digital skills, high implementation costs, and challenges related to data governance. However, these constraints differ in nature. In Mexico, they are primarily associated with organizational capabilities and limited institutional coordination, whereas in Chile they are more closely related to regional disparities and unequal access to innovation resources. These differences reinforce the [4] argument that inclusive public policies are essential to prevent technological gaps from widening across firms and regions.

Overall, this study supports an integrated perspective in which AI adoption emerges from the interaction among technological infrastructure, institutional governance, organizational capabilities, and public policy. From this standpoint, Chile currently represents the regional benchmark for coordinated AI governance, while Mexico exhibits considerable growth potential supported by its technological infrastructure and expanding digital market. Consequently, the study extends previous research by demonstrating that sustainable AI adoption in emerging economies depends less on technological availability itself than on the capacity of institutions and organizations to transform technological resources into innovation and competitive advantage.

4.1 Institutional Governance and Public Policy

The comparative findings confirm that institutional governance is a decisive factor influencing Artificial Intelligence (AI) adoption among Micro, Small and Medium-sized Enterprises (MSMEs). While technological infrastructure provides the foundation for digital transformation, the evidence demonstrates that coherent public policies, long-term strategic planning, and effective institutional coordination ultimately determine whether technological resources are translated into innovation and business competitiveness.

The comparison between Mexico and Chile illustrates two contrasting governance models. Mexico has experienced significant technological growth driven mainly by private investment and the expansion of digital services; however, fragmented institutional coordination continues to limit the diffusion of AI among MSMEs. In contrast, Chile has adopted a more integrated governance approach that connects government agencies, universities, research institutions, technology providers, and the productive sector within a common national strategy. This coordinated framework has

strengthened knowledge transfer, reduced institutional uncertainty, and facilitated AI implementation across businesses.

These findings are consistent with international evidence emphasizing that digital transformation depends not only on technological availability but also on policy coherence and institutional quality [4]. Countries with coordinated AI strategies are better positioned to stimulate innovation, attract investment, and accelerate technology diffusion. Similarly, the United Nations Educational, Scientific and Cultural Organization [8] argues that sustainable AI ecosystems require governance frameworks integrating regulation, ethics, human capital development, and innovation policies. In the Latin American context, Hirs, & Vargas [10] likewise emphasizes that collaboration among governments, academia, and the private sector is essential for strengthening digital transformation.

From a policy perspective, the comparative evidence suggests that AI adoption among MSMEs requires moving beyond isolated investments in infrastructure toward integrated governance models combining regulatory certainty, workforce development, financial support, and public-private collaboration. For Mexico, this implies consolidating a comprehensive national AI strategy capable of aligning technological expansion with institutional coordination and human capital development. For Chile, the priority lies in reducing regional disparities by expanding access to digital skills training, cybersecurity services, and innovation support programs for MSMEs.

Overall, the comparison demonstrates that technological infrastructure and institutional governance should be regarded as complementary rather than independent dimensions of AI adoption. While Mexico's expanding digital market and Chile's coordinated governance model represent different development pathways, both countries offer valuable lessons for designing inclusive public policies capable of accelerating AI adoption and strengthening the competitiveness of MSMEs across Latin America.

4.2 Organizational Capabilities of MSMEs

The findings demonstrate that, beyond institutional governance and technological infrastructure, the internal capabilities of Micro, Small and Medium-sized Enterprises (MSMEs) play a decisive role in the successful adoption of Artificial Intelligence (AI). The comparative analysis indicates that digital transformation depends not only on access to advanced technologies but also on firms' ability to integrate AI into strategic decision-making, operational processes, and innovation activities. Consequently, organizational capabilities emerge as the critical link between technological availability and effective implementation.

Among these capabilities, digital maturity emerges as one of the most influential factors shaping AI adoption. The evidence indicates that many Mexican MSMEs continue to operate with limited levels of digital readiness, constraining their ability to effectively integrate AI despite ongoing investments in technological infrastructure

and the increasing availability of AI solutions. These findings suggest that technological resources alone are insufficient to accelerate AI adoption when organizations lack the digital capabilities required to integrate AI into their strategic and operational processes. This interpretation is consistent with [4], who argues that digital maturity constitutes a fundamental prerequisite for translating technological investments into productivity gains, organizational innovation, and sustainable competitive advantage.

The study also confirms that human capital and financial resources remain among the principal barriers to AI adoption in both countries. Shortages of specialized professionals, together with limited access to financing for software acquisition, employee training, and organizational modernization, continue to constrain AI implementation, particularly among micro and small enterprises. These findings suggest that AI adoption depends not only on technological readiness but also on organizations' capacity to develop the skills and secure the financial resources required to sustain digital transformation over time. In this regard, Chile's stronger collaboration among universities, research institutions, government agencies, and the private sector has contributed to building digital capabilities and facilitating the diffusion of AI technologies. This interpretation reinforces the argument presented by the United Nations Educational, Scientific and Cultural Organization [8], who emphasizes that workforce development constitutes a fundamental pillar of sustainable AI ecosystems. Likewise, Hirs & Vargas [10] argues that accessible financial support mechanisms are essential for enabling digital transformation and accelerating AI adoption among Latin American MSMEs.

The study also confirms that human capital and financial resources remain fundamental constraints in both countries. Shortages of specialized professionals, combined with limited access to financing for software acquisition, employee training, and organizational modernization, continue slowing AI implementation, particularly among micro and small enterprises. In contrast, Chile's stronger collaboration among universities, research institutions, government agencies, and the private sector has contributed to developing digital skills and facilitating technology adoption, reinforcing the argument that workforce development is essential for sustainable AI ecosystems. Likewise, emphasize that financial support mechanisms are indispensable for accelerating digital transformation in Latin American MSMEs.

Another important contribution of this study concerns organizational readiness. The findings suggest that AI adoption should be viewed as an organizational transformation process rather than as a purely technological investment. Firms characterized by strategic planning, leadership commitment, organizational learning, and openness to process redesign are more capable of integrating AI into their business models and generating long-term competitive advantages. Conversely, organizations lacking these capabilities tend to implement AI in a fragmented manner, limiting its strategic impact.

Overall, the comparative evidence indicates that successful AI adoption results from the alignment of organizational capabilities with institutional support and

technological resources. This integrated perspective extends previous research by demonstrating that digital maturity, human capital, financial accessibility, and organizational readiness jointly explain the heterogeneous adoption patterns observed among MSMEs in emerging economies.

4.3 Implications for Latin America

The findings of this study have important theoretical, managerial, and policy implications for advancing Artificial Intelligence (AI) adoption among Micro, Small and Medium-sized Enterprises (MSMEs) across Latin America. From a theoretical perspective, the comparative analysis demonstrates that technological infrastructure alone does not explain differences in AI adoption. Instead, successful implementation results from the interaction among institutional governance, organizational capabilities, human capital, technological ecosystems, and financial accessibility. This integrated perspective extends previous research that has generally examined these dimensions independently and provides a more comprehensive framework for understanding AI adoption in emerging economies ([4] & [8]).

From a managerial perspective, the findings suggest that investments in AI technologies should be complemented by initiatives that strengthen digital maturity, organizational learning, leadership commitment, and workforce competencies. As emphasized by the United Nations Educational, Scientific and Cultural Organization [8], sustainable AI ecosystems depend on continuous human capital development, while Hirs & Vargas [10] argue that organizational support and access to financial resources are essential for accelerating digital transformation among Latin American MSMEs. Consequently, business support programs should combine technological modernization with capacity-building initiatives to maximize the benefits of AI adoption.

The study also highlights important implications for public policy. The comparison between Mexico and Chile demonstrates that coherent governance frameworks, coordinated institutional collaboration, and long-term national strategies create more favorable conditions for AI adoption than isolated investments in technological infrastructure. Consistent with the [4], governments should promote integrated policy frameworks that combine regulatory certainty, financial incentives, digital skills development, research support, and collaboration among universities, technology providers, and the productive sector to foster inclusive and sustainable AI adoption.

At the regional level, the comparative evidence reveals common challenges, including shortages of specialized human capital, unequal access to financing, regional disparities in digital capabilities, and limited organizational readiness among MSMEs. Addressing these barriers requires stronger regional cooperation through the exchange of best practices, collaborative research, technology transfer, and coordinated innovation policies [8]. Highlights that international cooperation is fundamental for reducing digital inequalities and strengthening innovation ecosystems, particularly in emerging economies.

Overall, this research contributes a comparative analytical framework that integrates technological, institutional, and organizational dimensions to explain AI adoption among MSMEs. By synthesizing evidence from Mexico and Chile, the study provides practical guidance for policymakers, business organizations, and academic institutions while establishing a foundation for future comparative research on AI adoption and digital transformation in Latin America ([4], [8] & [10]).

5. Conclusions

This study comparatively analyzed the institutional, technological, and organizational factors influencing the adoption of Artificial Intelligence (AI) among Micro, Small and Medium-sized Enterprises (MSMEs) in Mexico and Chile. The findings confirm that the objective of the research was achieved by identifying the principal similarities, differences, and contextual conditions shaping AI adoption in both countries. Although Mexico and Chile have made significant progress in promoting digital transformation, their development trajectories differ substantially due to variations in governance models, innovation ecosystems, organizational capabilities, and public policy implementation.

One of the principal findings of this research is that AI adoption among MSMEs cannot be explained solely by technological infrastructure or market size. Instead, successful implementation results from the interaction of multiple complementary factors, including institutional governance, public policy coherence, organizational readiness, digital maturity, human capital development, access to financing, and collaborative innovation ecosystems. This integrated perspective demonstrates that technological resources constitute only one component of a broader digital transformation process, in which organizational and institutional conditions determine the extent to which AI can generate sustainable competitive advantages.

The comparative analysis also highlights two distinct models of AI development in Latin America. Mexico demonstrates considerable technological potential through its expanding digital infrastructure, strong participation of international technology providers, and growing private investment. However, fragmented institutional coordination and heterogeneous organizational capabilities continue limiting the diffusion of AI among MSMEs. In contrast, Chile illustrates how coherent public policies, sustained investment in innovation, and effective collaboration among government, academia, and the private sector can accelerate AI adoption and strengthen the digital competitiveness of smaller enterprises. These findings suggest that regional leadership in AI depends not only on technological capacity but also on the quality of governance and the articulation of national innovation systems.

From a theoretical perspective, this study contributes to the literature by proposing an integrated comparative framework that combines institutional, technological, and organizational dimensions to explain AI adoption in emerging economies. Unlike previous studies that have examined these factors independently, the present research demonstrates that their interaction provides a more comprehensive explanation of the heterogeneous adoption patterns observed among MSMEs. Consequently, the study

extends current knowledge on digital transformation by emphasizing the importance of coordinated ecosystems in facilitating the successful implementation of AI technologies.

The findings also generate important practical implications for policymakers, business organizations, and technology providers. Governments should prioritize comprehensive AI strategies that integrate regulatory frameworks, digital infrastructure, financial support mechanisms, workforce development, and collaborative innovation initiatives. At the organizational level, MSMEs should complement investments in AI technologies with actions aimed at strengthening digital maturity, strategic planning, employee competencies, and organizational learning. Likewise, universities, research centers, and technology providers should continue promoting collaborative initiatives that facilitate knowledge transfer and improve access to AI solutions for smaller enterprises.

Finally, this study provides a foundation for future comparative research on AI adoption across Latin America. Expanding the analysis to additional countries and incorporating empirical methodologies—such as surveys, interviews, longitudinal studies, and multiple case studies—would contribute to a deeper understanding of the institutional and organizational mechanisms that shape digital transformation processes in emerging economies. Such research would also support the development of more effective public policies and business strategies capable of fostering inclusive, sustainable, and competitive AI adoption throughout the region.

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