



# Innovation and entrepreneurship in Panama: a qualitative analysis of managerial strategies

## Innovación y emprendimiento en Panamá: un análisis cualitativo de las estrategias gerenciales

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### ABSTRACT

**Introduction:** Innovation is a key process within small businesses, and its results directly influence their sustainability.

**Methodology:** This qualitative study explored the barriers and facilitators of innovation in Panamanian small and medium-sized enterprises (SMEs), using grounded theory to analyze in-depth interviews with 20 entrepreneurs in the service sector in the subcategories of technology and tourism.

**Results and Discussion:** The results revealed that lack of financing is the main barrier, followed by a shortage of trained personnel and resistance to change. Government support, collaborative networks, and access to technology were identified as facilitators. SMEs implement strategies such as product and process innovation and digital marketing, although they face challenges to their sustainability.

**Conclusions:** The study highlights the need for public policies that facilitate access to financing and training, as well as the importance of strengthening the innovation ecosystem in Panama. As a result, practical recommendations are proposed for decision-makers, support organizations, and entrepreneurs to boost innovation and growth among Panamanian SMEs.

**Keywords:** Business economics, business management, development strategies, organizational change, small enterprises

**JEL Classification:** M10, O31.

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### RESUMEN

**Introducción:** la innovación es proceso cardinal dentro de la pequeña empresa, cuyos resultados influyen directamente en la sostenibilidad de la misma.

**Metodología:** este estudio cualitativo exploró las barreras y facilitadores de la innovación en pequeñas y medianas empresas (PYMES) panameñas, utilizando la teoría fundamentada para analizar entrevistas en profundidad con 20 empresarios del sector servicios en las subcategorías de tecnología y turismo.

**Resultados y Discusión:** los resultados revelaron que la falta de financiamiento es la principal barrera, seguida por la escasez de personal capacitado y la resistencia al cambio. Como facilitadores, se identificaron el apoyo gubernamental, las redes de colaboración y el acceso a tecnología. Las PYMES implementan estrategias como la innovación de productos y procesos, y el marketing digital, aunque enfrentan desafíos para su sostenibilidad.

**Conclusiones:** el estudio destaca la necesidad de políticas públicas que faciliten el acceso a financiamiento y capacitación, así como la importancia de fortalecer el ecosistema de innovación en Panamá. Como resultado, se proponen recomendaciones prácticas para tomadores de decisiones, organizaciones de apoyo y emprendedores, con el fin de impulsar la innovación y el crecimiento de las PYMES panameñas.

**Palabras clave:** Administración de empresas, cambio organizacional, economía de la empresa, estrategia de desarrollo, pequeña empresa

**Clasificación JEL:** M10, O31.

## INTRODUCTION

Innovation is a key factor for the survival and growth of small and medium-sized enterprises (SMEs) in today's globalized and competitive economy (Arsawan et al., 2022). In the case of Panama, which is establishing itself as a regional logistics



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and financial center, it is necessary to strengthen the business fabric through innovation to promote economic development and job creation. However, Panamanian SMEs face specific problems that restrict their ability to adopt innovative management changes. Among the most relevant are the lack of long-term financing, shortage of qualified personnel, and low adoption of digital technology, factors that together limit the sector's capacity for innovation (Gonzalez-Tamayo et al., 2023).

This study aims to explore the experiences of Panamanian SME entrepreneurs in adopting managerial changes using a qualitative approach based on grounded theory. Through in-depth interviews and document analysis, we sought to understand how they make decisions to innovate, the obstacles and barriers they face, and the strategies they have used that they consider successful.

The study focuses on the barriers and facilitators in the adoption of management strategies, with an emphasis on innovation, in the management of Panamanian SMEs. In terms of contribution, it is expected that the study will provide a better understanding of the problems and possibilities of Panamanian SMEs in their innovation process, as well as provide input to help formulate policies that strengthen the Panamanian entrepreneurial ecosystem.

In addition, it is estimated that the results of the research will be relevant to entrepreneurs, entities that support SMEs, and academics interested in business innovation. With a better understanding of the factors that influence innovation in Panamanian SMEs, more impactful and supportive policies and programs can be formulated.

### **Innovation in small and medium-sized enterprises: underlying theory**

Innovation, as a critical element of SME analysis, means the introduction of new products, processes, services, or organizational structures. This phenomenon is intrinsically linked to the disruptive transformation of markets, where radical changes renew and replace established models (Kivimaa et al., 2021). In small and medium-sized enterprises, this innovative capacity is critical for their businesses in a relentless competitive environment (Otahe, 2024). Furthermore, social adoption patterns explain the diffusion of novel ideas and outline distinct profiles of change and an adoption gap that is crucial for understanding how these companies apply and spread transformative practices.

Strategic innovation management is part of business planning, as innovation requires a systemic approach that integrates all elements of an organization. It is therefore necessary to foster environments conducive to creativity and endogenous competencies for novelty (López & Oliver, 2023). At the same time, studies on social determinants have identified institutional architecture, corporate values, and governance mechanisms as critical explanatory variables of organizations' innovative capacity (AlTaweel & Al-Hawary, 2021; Žižakov et al., 2023).

The need for innovation in business today has given rise to new concepts and practices, mainly in small and medium-sized enterprises that require innovation for development, competitive advantage, and to keep up with rapidly evolving markets. These changes and new perspectives reflect a more systematic and continuous form of innovation, which emerges from a deeper understanding of the internal and external dynamics of the market. In this sense, innovation is increasingly recognized in both academia and industry as a key component of sustainable development.

The term open innovation gained traction more than a decade ago, and the notion of open innovation is increasingly recognized (Surya et al, 2021). This form of innovation represents a new and, to some extent, radical change in how companies integrate new ideas, which increasingly helps to gain a competitive advantage for businesses. This change in innovation practice is really important for small and medium-sized enterprises (Surya et al, 2021).

As noted, open innovation recognizes the limits of a given business and focuses on external sources of new ideas. In this sense, open innovation captures a business's interaction with its environment and its co-creators, such as customers and suppliers.

Furthermore, these new practices constitute an important and positive development not only for customers who need new solutions, but also for education, as they enable higher quality and flexible education and funding. This ultimately contributes to the continuous improvement of services, quality, and responsiveness.

Thus, all these new practices and concepts in the form of open innovation are essential for all small and medium-sized enterprises today, as this type of innovation represents a focused and effective update to current business practices, given that valuable ideas that can help these companies exist in their environment and are not being used.

## **Innovative management strategies: conceptual frameworks**

Innovative management strategies enable SMEs to take advantage of innovation opportunities and build competitive advantages (Pertuz & Pérez, 2021). From a theoretical perspective, strategy is seen as an emergent process in which flexibility and adaptability are critical elements. This agile response approach is especially relevant for small businesses facing constantly changing market dynamics (Kahveci et al., 2025). Complementary to this, the core competencies approach identifies differentiating intangible assets that enable these organizations to develop specialized capabilities in specific niches to drive sustainable growth.

At the same time, sectoral analysis models study the industrial structure and forces that determine profitability, providing a benchmark against which SMEs can self-assess their competitive positioning. Furthermore, in the current environment, a digital strategy has become essential. SMEs need to adopt frameworks that integrate digital technologies to improve operational efficiency, access new markets, and deliver enhanced value to customers (Hokmabadi et al., 2024). The integration of all these approaches provides SMEs with the flexibility to develop strategies that are both adaptive and innovative.

## **SMEs and their role in the entrepreneurial ecosystem**

SMEs are vital to the economy because they are flexible and adaptable in size. As Osano (2023) points out, they act as agents of innovation, implementing new technologies and products that are available on the market. In the literature, different authors describe how SMEs play different roles in the innovation diffusion process, ranging from early adopters to late implementers (Benhayoun & Zejjari, 2024; Hassan et al., 2024). In addition, the authors emphasize the capabilities of SMEs to create emerging strategies and core competencies that enable them to compete in niche markets (Bansal et al., 2023; Henn et al., 2022).

In the Panamanian context, SMEs are fundamental to the entrepreneurial ecosystem given their impact on economic recovery and job creation. The Panamanian government has implemented policies aimed at supporting SMEs, recognizing their roles in the country's development (AMPYME, 2023). On the other hand, SMEs in Panama also face other problems such as insufficient financing and a lack of specialized training. To address these challenges, it is important to strengthen the entrepreneurial ecosystem and foster collaboration between SMEs, universities, and the government.

## **Innovation ecosystem in Panama**

The innovation ecosystem in Panama has specific characteristics that impact the development of SMEs. The Panamanian government has implemented various policies to support SMEs, such as the programs offered by the Micro, Small, and Medium Enterprise Authority, understanding the impact of innovation on economic growth (AMPYME, 2023). These policies improve access to capital, training, and levels of collaboration between companies with a view to 2023.

Universities, research centers, and other institutions, like SMEs, have a great responsibility in creating knowledge and transferring technology. The collaboration of these actors with SMEs is strategic for innovation and the development of new products and services. In this sense, the Panamanian ecosystem requires more long-term financing, better-qualified personnel, and the adoption of more digital technologies.

Innovation in Panama can be enhanced by overcoming certain challenges. SMEs can receive a significant boost in their development and competitiveness through the creation of clusters, the development of innovation in the country, investment in research and development, and the creation of an innovative culture. Recent statistics indicate that the SME sector in the country has a significant presence and participation in the economy, GDP, and economic expansion. This sector has great opportunity and potential for innovation and growth, which is why it is so important to focus on solving the problems they face and aligning them with the appropriate strategies to carry out the necessary actions.

## **Human capital and innovation capabilities of SMEs**

Human capital is highly relevant to the innovation that SMEs can develop. In particular, training and the development of appropriate skills enable both entrepreneurs and their teams to implement new ideas and technologies. Leadership is also important because leaders must foster a culture that promotes an organization that requires innovation, creativity, collaboration, and even experimentation.

Training in digital marketing, project management, leadership, and finance is essential for SMEs to develop sustainable innovation capabilities. Identifying and retaining, motivating, and innovating are fundamentals that SMEs must master in order to leverage the talent they manage and attract qualified personnel.

Investing in human capital development allows SMEs to develop a greater and better response to changes in the environment, focusing on the opportunities that arise. In this sense, Teece's (2023) dynamic capabilities theory emphasizes the value of investing in the training of an organization's human capital.

### **Barriers to innovation in Panamanian SMEs**

The findings revealed that the most significant barriers faced by SMEs in Panama when implementing innovative management strategies are:

- Insufficient access to financing: Many SMEs face challenges in obtaining loans or financing to invest in innovative changes.
- Lack of training: Entrepreneurs and SME staff generally do not have the right skills to implement new technologies and processes.
- Resistance to change: Cultural and organizational inertia is a major barrier to the adoption of innovations.
- Lack of information: SMEs are unaware of the financing and government support opportunities available to promote innovation.

In addition, Arroyabe et al. (2024) emphasize the relevance of the organizational context concerning the adoption of innovations. They point to barriers such as lack of resources, organizational inertia, and ambiguity as constraints that inhibit innovation within organizations, including SMEs. Studies on innovation management propose a dominant model of innovation reluctance that emphasizes the impact of dynamic capabilities, recurring barriers such as lack of adequate knowledge, technical limitations, and insufficient collaborative networks.

Complementarily, studies on the relationship between organizational innovation performance point to structural gaps, such as the lack of a sustained innovative culture, insufficient transformational leadership, and failures in internal coordination mechanisms. From intergovernmental organizations, insufficient financial resources, gaps in specialized skill sets, and restricted access to strategic market opportunities continue to be recognized as critical constraints.

The results of this research illustrate how the lack of access to finance poses the most prominent barrier to innovation in Panamanian SMEs. This corroborates the growing body of literature (Amadasun & Mutezo, 2022; Fanelli, 2021; Oudgou, 2021) documenting the importance of resources within the innovation process. Furthermore, organizational change inertia, a common barrier identified in the literature, shows a lack of willingness among SMEs to change the technologies and processes they use.

### **Innovation facilitators**

The identified descriptors and characteristics that can facilitate innovation offer hope for sustaining innovation in Panamanian SMEs:

- Government support: Innovation can also be driven by government funding and training programs.
- Collaborative networks: Participation in networks of individuals and businesses allows for better knowledge sharing and adoption of best practices.
- Access to technology: The growing availability of information and communication technology (ICT) presents new opportunities for addressing solutions.

The focus on innovation regimes highlights the importance of national systems and public policies in fostering business innovation. In this context, public support through financing and vocational training is aligned with the promotion of environments for productive transformation (Cooke et al., 2024). In addition, international organizations identify access to capital, inter-institutional synergies, and the incorporation of digital technologies as key enabling factors.

From the perspective of national innovation systems, their central role in the functions of knowledge production and circulation is recognized, where collaborative networks and access to technology are structural pillars (Heidenreich, 2024). Competitive perspectives on dynamic skills focus on the need to develop responsive adaptability to change, with collaboration and technology serving as catalysts for such capacity (Quansah et al., 2022).

The theory of parallel competitive advantage suggests that a nation's competitive strength comes from its ability to establish industrial clusters (Arsawan et al., 2022). These specialized ecosystems enhance business collaboration, including access to skilled suppliers, co-creation of strategic knowledge, and business collaboration.

### Management strategies implemented

The management strategies implemented by small and medium-sized enterprises (SMEs) in Panama focus on the following areas:

- Product innovation: Creation of new products and services to meet emerging and evolving customer needs.
- Process innovation: Improving internal processes to increase operational efficiency and production.
- Marketing innovation: Applying new digital marketing services to attract a broader customer base.
- Organizational innovation: Adopting new management and organizational structures.

The literature highlights innovation as a central element of any company seeking to maintain long-term operations and profitability, pointing to the proactive need to identify and create new opportunities in emerging and proactive markets (Allal-Chérif et al., 2023). These ideas remain alive when analyzing product and service renewal. Furthermore, theories on competitive strategy emphasize innovation and differentiation as a central principle even for small businesses.

Subsequent approaches suggest that sustainable growth requires building and preserving distinctive competencies, where innovation in processes and organizational structures acts as a central catalyst (Ghobakhloo et al., 2021). From a different perspective, a more holistic approach to strategy considers it to be emergent and therefore linked to institutional culture. In this sense, flexibility and adaptability are particularly valuable characteristics for organizations that need to move quickly in response to market changes (Musa & Enggarsyah, 2025).

Studies on operational excellence identify distinctive practices in high-performing companies, giving special relevance to systemic discipline and innovation as pillars that can be transferred to SMEs (Youssef & ElSabry, 2024; Novillo-Villegas et al., 2022). This combination of theoretical contributions provides a consistent foundation for analyzing innovative management strategies that identify the factors that determine success and best practices for the transformation of small and medium-sized enterprises.

Dossou-Yovo & Keen (2021) are among the authors who analyze the innovative management strategies adopted by SMEs. They provide an understanding of the factors that determine the success of these strategies and help companies identify best practices for innovation in small and medium-sized enterprises.

### Necesidades de capacitación

Panamanian SME entrepreneurs had a great need for training in:

- Digital marketing: digital media activities focused on the sale of goods and services.
- Leadership: Leadership workshops to promote an innovative organizational culture.
- Finance: Financing plans and investor relations in financial management.

Education and training, at different levels and in different forms, include the acquisition of new skills. They enable the transformation of skills and knowledge into innovative attitudes and actions in response to the need for efficient and effective change (Muneeb et al., 2023). In this sense, training is essential for Panamanian SMEs to identify and pursue these strategic opportunities effectively. At the same time, its importance in continuous improvement and organizational quality management is recognized, which can be applied to numerous and different fields of industrial origin (Van Assen, 2021).

Companies face pressure to operate in complex and uncertain conditions and, from a competitiveness perspective, require responsiveness (Zhang et al., 2023). In knowledge creation theory, training functions as the dominant mechanism for translating tacit knowledge into explicit knowledge and for stimulating internal circulation (Konno & Schillaci, 2021). In addition, organizational learning frameworks focus on the creation of systemic cognitive and absorptive capacities.

The literature on business management, innovation, and organizational learning underscores the need for training within the areas identified for improvement in Panamanian SMEs. Training enables the acquisition of new

skills and the cultivation of a new ethos of continuous learning and adaptation, which is critical for the survival and growth of SMEs in a highly competitive business environment.

## METHODOLOGY

The study was conducted using a qualitative approach with a grounded theory design, with the aim of examining in depth the experiences of SME entrepreneurs in Panama with regard to the implementation of innovative management strategies. Grounded theory is a type of methodology used to explore more complex and less studied phenomena, in this case, innovation in SMEs, where inductivity is crucial (Mohajan & Mohajan, 2023).

Grounded theory evolved due to advances in analysis techniques and the processes of constructing the type of theory in question, moving from initial positivism to integrative epistemological frameworks (Pérez Gamboa et al., 2024). This approach has proven to facilitate the exploration of highly complex social issues that require high levels of systematic rigor in the construction of concepts (Holt et al., 2022). Similarly, this approach proposes a shift towards meta-reflexivity that centrally incorporates the socio-cultural and ethnographic context and the researcher's situation concerning knowledge production (Keane & Thornberg, 2024).

Using grounded theory, it is possible to recognize patterns and relationships that may not be obvious, as well as to generate relevant and contextualized theories. Data analysis was performed using open, axial, and selective coding, which allowed for the evaluation of the data collected with the purpose of finding the units of analysis that determine the innovation decisions of SMEs in Panama.

### Sample selection: criteria and procedure

The sample was designed to be non-probabilistic, for convenience, and using a snowball strategy. It consisted of 20 SMEs in Panama that, within no more than three years, implemented at least one innovative management strategy. In order to be included, the criteria were: a) be an SME with fewer than 250 employees; b) be located in Panama City; c) operate in the tourism and technology services sector; and d) have been in operation for at least two years. These subcategories were chosen for their dynamism and importance in the current Panamanian economy. The final sample was determined by theoretical saturation, i.e., when no new data were available for the research. This closure allowed for a deeper analysis of the data and a broad and representative view of the phenomenon studied.

### Data collection techniques, interviews, and documents

Semi-structured interviews were used as the main data collection technique. These interviews were conducted one-on-one with the owners or managers of the selected SMEs. The interview guide focused on topics such as the perception of innovation within the company, management strategies, internal and external factors affecting the adoption of innovation, barriers and challenges, and results of the process. In addition to interviews, data collection also included reviewing internal company documents (business plans, annual reports). The interviews were recorded and transcribed verbatim for better analysis.

### Data analysis: coding and triangulation

Data analysis was carried out using a grounded theory approach, which comprises three stages: open coding, axial coding, and selective coding. In open coding, preliminary codes are generated during the initial analysis of the interviews and other relevant documents. In axial coding, preliminary codes are grouped to form more abstract categories, and relationships between them are developed. In selective coding, categories are integrated to form a central theory that explains the phenomenon under investigation.

NVivo software was used for data analysis, as it helps to manage and code extensive texts. Preliminary triangulation of the data was performed to ensure that the findings were valid. This was done by combining information from various data sources: interviews, documents, and observations. In addition, Saldaña (2016) recommends using NVivo to construct conceptual maps that represent the relationships between categories and subcategories. These maps help to uncover underlying relationships between data, which can lead to the discovery of patterns and trends. Finally, the synthesis of the main results was represented using artificial intelligence, in order to achieve a presentation that was not only suitable for scientific and academic communication, but could also be used by other relevant actors (SME owners, decision-makers, students).



## RESULTS

**Table 1.** Barriers to innovation in Panamanian SMEs

Subcategory	Frecuency	Examples/quotes
Lack of funding	15	“it is very difficult to obtain loans for innovation.”
Lack of training	12	“we need more training in digital marketing.”
Resistance to change	10	“people find it difficult to adapt to new technologies.”

Source: own elaboration

**Table 2.***Facilitators of innovation in Panamanian SMEs*

Subcategory	Frecuency	Examples/quotes
Government support	8	“ampyme’s programs are very useful.”
Collaborative networks	7	“collaborating with other companies has helped us a lot.”
Access to technology	6	“new technologies have allowed us to improve our processes.”

Source: own elaboration.

**Table 3.***Innovative management strategies implemented by Panamanian SMEs*

Subcategory	Frecuency	Examples/quotes
Product innovation	10	“we have developed a new product that has been very successful.”
Process innovation	9	“we have improved our internal processes to be more efficient.”
Digital marketing	8	“we have used social media to reach new customers.”

Source: own elaboration

**Enriching the analysis. Interpretation in light of the theoretical framework***Theory of the diffusion of innovations*

When studying the adoption of innovations in Panamanian SMEs, it can be observed that the adoption rate is not uniform. Some SMEs, particularly in the technology sector, act as early adopters, quickly implementing new technologies and new digital marketing strategies.

These SMEs are also more open to change, have a business culture focused on innovation, and have better access to information and resources. However, other SMEs, especially in the tourism sector, show a significantly slower adoption rate, pointing to barriers such as resistance to change and lack of training.

Social media and digital communication channels play a key role in the adoption and dissemination of innovations, as they provide information and share experiences that all SMEs can easily access. The innovation diffusion model developed by Rogers et al. (2019) has been enriched with subsequent additions that integrate dimensions such as perceived risk and perceived usefulness, which are vital to explaining innovative adoption in the Panamanian context. Figure 1 shows an analysis of the factors that promote and suppress innovation in the SMEs studied.

**Figure 1.**  
*Analysis of adoption in SMEs*



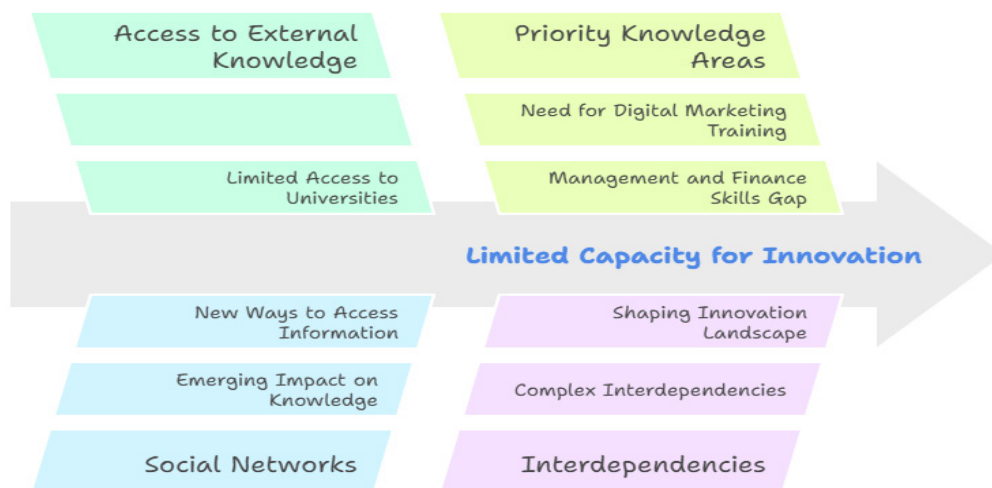
Source: own elaboration

#### *Knowledge-based resource theory*

The results show that the SMEs studied have limited access to external knowledge resources, such as universities and research centers. This restricts their ability to create new technologies and products, in line with the conclusions of Teece et al. (1997), who emphasize the role of dynamic capabilities for innovation. Even so, a significant impact of social networks on knowledge dissemination is beginning to be noticed, indicating that SMEs are trying new ways to access information and resources.

The priority knowledge valued includes the areas of digital marketing, management, and finance, indicating a need for further training and capacity building. In general, four groups of fundamental challenges were identified, where interdependencies shape a landscape marked by limited capacity for innovation (Figure 2).

**Figure 2.**  
*Challenges for innovation development*



Source: own elaboration

#### *Institutional theory*

In Panama, the institutional environment, which includes government policies and business associations, is an important factor in determining the innovation ecosystem. While SMEs appreciate the support programs provided by AMPYME, the infrequent mention suggests that there are critical gaps to address. Lack of financing and resistance to change are obstacles that may stem from the absence of specific public policies and the need to

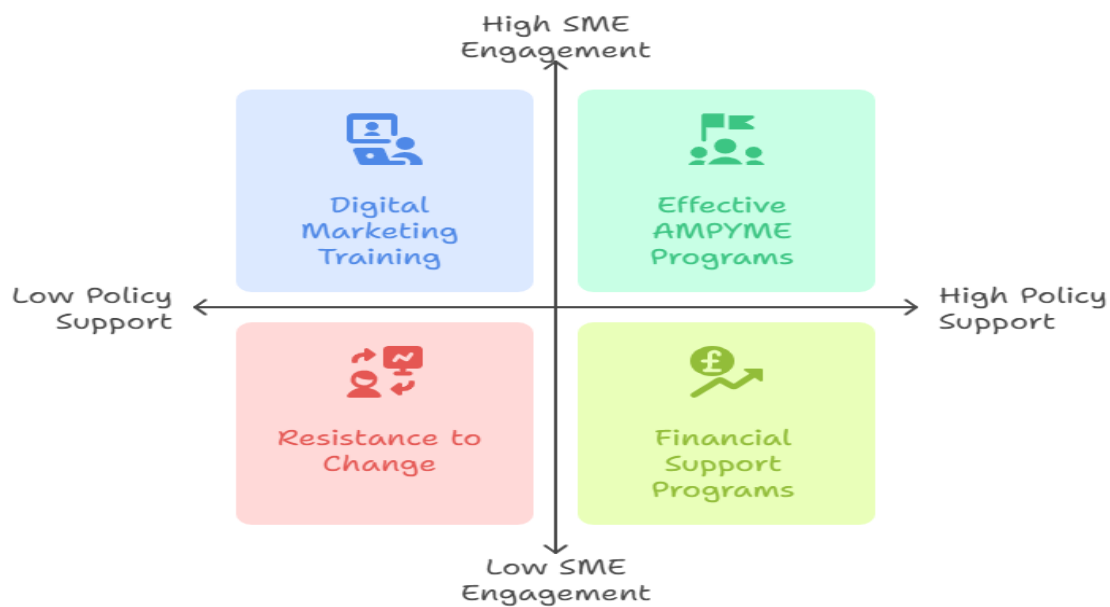


strengthen an innovative culture. Scott's institutional theory (2001) is particularly useful for understanding the impact of innovation norms, rules, and cultural practices on SME decisions, as it provides a governance framework.

When reviewing the results tables, it can be noted that lack of financing was the main barrier to innovation, as indicated by 15 of the 20 entrepreneurs interviewed. This suggests that government policy is geared toward providing better long-term financing with a lower cost of capital.

Training needs in digital marketing and project management also highlight the need to design training and skills development programs properly. While collaboration networks and access to technology are important enablers, their impact is likely to be greater if there is stronger collaboration in the innovation ecosystem and public policy support, especially aimed at helping small and medium-sized enterprises (SMEs). Based on the coding carried out, four fundamental axes were identified in understanding the influences that condition the availability of resources, a key element in promoting innovation as a stable process (Figure 3).

**Figure 3.**  
*Matrix of factors influencing innovation in SMEs*



Source: own elaboration

## DISCUSSION

This study, which focuses on the main barriers and facilitators of innovation in a group of SMEs, describes a system that is multifaceted, complex, and evolving. Using a qualitative approach methodologically grounded in grounded theory, it was possible to identify the main barriers and opportunities in the innovation process in SMEs, along with the innovative management practices that SMEs have progressively incorporated.

Among the dominant findings, lack of access to finance was identified as the main barrier to innovation, followed by a shortage of skilled personnel, lack of adaptability to change, lack of information, and apathy. These findings support the research in the literature reviewed, highlighting the relevance of the institutional and organizational context in the adoption of innovations (Fanelli, 2021; Carvache-Franco et al., 2022). In the case of Panama, these barriers are exacerbated by limited long-term financing and the need to strengthen the culture of innovation.

In addition, government support, collaborative networks, and access to technology were identified as key factors that can foster innovation. These conclusions are aligned with national innovation systems and dynamic capabilities theories (Teece, 2023; Zabala-Iturriagagoitia et al., 2021). In Panama, AMPYME programs and the growing adoption of digital technologies have helped create a more favorable environment for innovation. The SMEs analyzed, although still in their infancy, are adopting a wide range of innovation strategies, including product and process innovation, as well as digital marketing. However, many of these businesses face various obstacles to maintaining these initiatives over time, indicating that they need to improve their management and strategic planning.

Therefore, the research helps to deepen the understanding of innovation processes in SMEs, particularly in the context of emerging economies such as Panama. The findings highlight the need to adapt existing models to incorporate more context-specific elements, such as Latin American culture, with its personal relationships and informal networks. In addition, the emphasis provided by dynamic capabilities theory on how SMEs adapt and change, and undergo transformations in relation to the challenges they face, remains significant (Teece, 2023).

Regarding the future of these organizations, it is advisable to strengthen the innovation ecosystem in Panama through public policies that facilitate access to financing, promote training in digital marketing and project management, and encourage collaboration between SMEs, universities, and the government. In addition, it is necessary to develop mentoring and support programs in innovation to assist entrepreneurs in their innovation processes. Therefore, longitudinal studies are needed to thoroughly address the helix relationships and their real impact on SME innovation processes.

The findings of this research, although not intended to generalize, do reflect the situation of SMEs in Panama, where the lack of financing and human talent are critical challenges. At the same time, greater interest in innovation and greater awareness of the need for change were observed. As introduced above, actionable policies must be implemented to address the challenges and capitalize on opportunities to build a more active and competitive business ecosystem. Figure 4 provides an outline of the critical avenues for understanding and fostering innovation in the Panamanian entrepreneurial ecosystem.

**Figure 4.**  
*Innovation in Panama's entrepreneurial ecosystem*



Source: own elaboration

## CONCLUSIONS

The study revealed that innovation in Panama's SMEs is caught in a critical duality: emerging facilitators that are decidedly transformative and deeply structural barriers. Lack of access to financing, shortage of adequate human capital, and reluctance to adopt changes in organizational structure constitute systemic barriers that restrict the implementation of management changes, particularly in active sectors such as technology and tourism. However, government support, collaborative networks, and accelerated digitization act as drivers. Thus, it can be concluded that when external factors are combined with dynamic entrepreneurial capabilities, these systemic barriers begin to be mitigated, albeit partially.

Perceptible adaptation to systemic constraints and managerial change are evident in the implementation of new strategies, including product innovation, process optimization, and digital marketing. However, transformative leadership and project management in the region's informal networks are a natural problem that disconnects these new alternatives, affecting the long-term maintenance that reorganization and structural redesign require. At the theoretical level, these findings confirm the relevance of dynamic capability frameworks and national innovation systems. However, they also show that such frameworks must integrate informal relationships and be adjusted to

the challenges of greater informality that characterize Latin America.

In summary, the study provides empirical evidence for the need for public policies that go beyond financing reactive approaches to integrated innovation ecosystems and focus on continuous training programs aligned with sectoral demands, university-industry co-creation platforms for the transfer of tacit knowledge, and incentives for specialization in defined strategic niches. Future research could examine the intersection of local organizational cultures and open innovation, as well as the differential impact of digital transformation on SMEs with varying degrees of operational maturity. In the case of Panama, the real competitive advantage lies in the institutionalization of adaptive learning that transforms barriers into opportunities for collective reinvention.

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