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Sustainable Digital Transformation: Overcoming Organizational Barriers and Building Strategic Solutions in Convenience Stores

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Abstract:

Objective: To analyze the feasibility of designing sustainability strategies and digitization processes as strategies aimed at strengthening competitiveness in a convenience store, using Plaza Pinar Center (Colombia) as a case study. **Methodology:** A descriptive-analytical approach is adopted, based on a conceptual framework that integrates models such as the Triple Bottom Line, shared value creation, and the ecological economy. Furthermore, global digitization trends in the retail sector are incorporated as a focal point of analysis. The project's feasibility is examined from technical, economic, operational, and environmental dimensions, using comparable data from the sector in Colombia and reference estimates in U.S. dollars. In addition, a strategic competitiveness plan is formulated that integrates the organizational philosophy and the development of a strategic diagnosis using SWOT, DO, FA, and DA matrices. **Results:** The findings show that the integration of sustainability strategies and digitalization tools is financially viable and strategically relevant. These initiatives contribute to improving operational efficiency, optimizing resource

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management, strengthening the customer experience, and enhancing competitive performance in small-scale convenience stores. Conclusions: The Triple Bottom Line, shared value creation, and green economy approaches demonstrate high applicability in small-scale business contexts, challenging the notion that sustainability is exclusive to large corporations. On the contrary, it establishes itself as a tangible source of competitive differentiation and operational efficiency. At the same time, the analysis confirms that digitalization in retail, particularly through point-of-sale (POS) systems, generates significant improvements in financial control, information traceability, and customer service quality, making it a key enabler of sustainable growth.

Keywords: sustainability; digitalization; retail; convenience stores; competitiveness.

Transformación digital sostenible: superación de barreras organizativas y construcción de soluciones estratégicas en tiendas de conveniencia retail

Resumen:

Objetivo: Analizar la viabilidad de diseñar estrategias de sostenibilidad y procesos de digitalización como estrategias orientadas al fortalecimiento de la competitividad en una tienda de conveniencia, tomando como caso de estudio a Plaza Pinar Center (Colombia). Metodología: Se adopta un enfoque descriptivo-analítico sustentado en un marco conceptual que integra modelos como el Triple Bottom Line, la creación de valor compartido y la economía ecológica. Asimismo, se incorporan tendencias globales de digitalización en el sector retail como eje de análisis. La viabilidad del proyecto se examina desde dimensiones técnica, económica, operativa y ambiental, utilizando datos análogos del sector en Colombia y estimaciones referenciales en dólares estadounidenses. Además, se formula un plan estratégico de competitividad que integra la definición filosófica organizacional, el desarrollo de un diagnóstico estratégico a través de matrices FO, DO, FA y DA. Resultados: Los hallazgos evidencian que la integración de estrategias de sostenibilidad y herramientas de digitalización es financieramente viable y estratégicamente pertinente. Estas iniciativas contribuyen a mejorar la eficiencia operativa, optimizar la gestión de recursos, fortalecer la experiencia del cliente y elevar el desempeño competitivo en tiendas de conveniencia de pequeña escala. Conclusiones: Los enfoques del Triple Bottom Line, la creación de valor compartido y la economía ecológica demuestran alta aplicabilidad en contextos empresariales de pequeña escala, lo que cuestiona la noción de que la sostenibilidad es exclusiva de grandes corporaciones. Por el contrario, se consolida como una fuente tangible de diferenciación competitiva y eficiencia operativa. En paralelo, el análisis confirma que la digitalización en el retail, particularmente mediante sistemas de punto de venta (POS), genera mejoras significativas en el control financiero, la trazabilidad de la información y la calidad del servicio al cliente, constituyéndose en un habilitador clave del crecimiento sostenible.

Palabras clave: sostenibilidad; digitalización; retail; tiendas de conveniencia; competitividad.

Transformação digital sustentável: superação de barreiras organizacionais e construção de soluções estratégicas em lojas de conveniência do varejo

Resumo:

Objetivo: Analisar a viabilidade de projetar estratégias de sustentabilidade e processos de digitalização como estratégias voltadas ao fortalecimento da competitividade em uma loja de conveniência, tomando como estudo de caso o Plaza Pinar Center (Colômbia). Metodologia: Adota-se uma abordagem descritivo-analítica, fundamentada em um referencial conceitual que integra modelos como o Triple Bottom Line, a criação de valor compartilhado e a economia ecológica. Além disso, são incorporadas as tendências globais de digitalização no setor varejista como eixo de análise. A viabilidade do projeto é examinada sob as dimensões técnica, econômica, operacional e ambiental, utilizando dados análogos do setor na Colômbia e estimativas referenciais em dólares norte-americanos. Adicionalmente, é elaborado um plano estratégico de competitividade que integra a definição da filosofia organizacional e o desenvolvimento de um diagnóstico estratégico por meio das matrizes FO, DO, FA e DA. Resultados: Os resultados evidenciam que a integração de estratégias de sustentabilidade e ferramentas de digitalização é financeiramente viável e estrategicamente pertinente. Essas iniciativas contribuem para melhorar a eficiência operacional, otimizar a gestão de recursos, fortalecer a experiência do cliente e elevar o desempenho competitivo de lojas de conveniência de pequeno porte. Conclusões: As abordagens do Triple Bottom Line, da criação de valor compartilhado e da economia ecológica demonstram elevada aplicabilidade em contextos empresariais de pequeno porte, o que questiona a noção de que a sustentabilidade é exclusiva das grandes corporações. Pelo contrário, consolida-se como uma fonte concreta de diferenciação competitiva e eficiência operacional. Paralelamente, a análise confirma que a digitalização no varejo, especialmente por meio de sistemas de ponto de venda (POS), gera melhorias significativas no controle financeiro, na rastreabilidade das informações e na qualidade do atendimento ao cliente, constituindo-se em um importante facilitador do crescimento sustentável.

Palavras-chave: sustentabilidade; digitalização; varejo; lojas de conveniência; competitividade.

1. INTRODUCCIÓN

Over the past two decades, the global business environment has undergone profound transformations driven by the rapid evolution of digital technologies, which have fundamentally reshaped the parameters of competitiveness and redefined value creation processes. Technologies such as artificial intelligence (AI), big data analytics, cloud computing, blockchain, and the Internet of Things (IoT) are no longer merely supporting tools for improving operational efficiency; rather, they have become central strategic enablers that determine organizations' ability to innovate, adapt quickly to market changes, and achieve sustainable growth (Jun Cui, 2025; Kraus et al., 2021).

The true value of digital transformation, however, lies not solely in the adoption of these technologies, but in strategically aligning them with long-term organizational objectives and integrating them into priorities (Chatterjee et al., 2023; Dubbey et al., 2025). Recent surveys of executives underscore that digital transformation has become a fundamental strategic imperative for leading companies worldwide. Deloitte (2024) reports that 85% of global CEOs significantly accelerated their organizations' transformation efforts after 2020, while PwC's Global Digital Procurement Survey (2024) shows that more than half of procurement leaders now include digital transformation as a strategic priority. These changes highlight the growing recognition that digital transformation is not just about improving financial performance, but also about increasing transparency, enhancing risk management, and supporting environmental and social initiatives. Building on this momentum, many organizations are incorporating sustainability metrics into their digital transformation roadmaps to ensure that technological advancements are closely aligned with environmental goals and stakeholder expectations (Fujitsu, 2024).

In this context, convenience stores at gas stations are no longer mere add-ons to fueling stations. Today, they serve as a central pillar of profitability and customer acquisition, with evidence showing that

approximately two-thirds of those who enter these stores do not come solely for gasoline, but for a direct shopping experience (Surtidores Latam, 2025). This implies that the business model must be reinvented, integrating its own identity, value proposition, and autonomous profitability (Surtidores Latam, 2025).

Furthermore, technological transformation and the shift toward sustainable models are booming trends. The Boston Consulting Group (2022) notes that the fuel sector must move away from a traditional approach to become centers of mobility and social experience, incorporating digitalization and sustainable options in response to the transition to electric vehicles. It also argues that strengthening the convenience store is an essential part of ensuring the model's future economic viability. The goal is to reinvent gas stations, turning them into hubs for mobility and integration—a shift that will transform the fuel sector and ensure its long-term sustainable success.

In Colombia, the transformation of gas stations into broader service models is gradual. Currently, many have evolved into comprehensive service centers, incorporating convenience stores, gourmet products, charging stations, and logistics services, with the aim of building customer loyalty through a more complete shopping experience (Gasolutions, n.d.). Stations have become comprehensive service centers, adapting to the changing needs of consumers and seeking to build customer loyalty through a diversified offering.

Accordingly, convenience stores at gas stations have evolved from simple fueling annexes into strategic spaces for profitability, customer loyalty, and differentiated shopping experiences. Therefore, this study is significant in analyzing how these transformations directly impact the business model and the need to design strategies that ensure sustainable growth. The energy transition and new eco-environmental technologies are forcing a rethinking of the value proposition at gas stations. Thus, the convenience store becomes the core of economic



viability, where innovation, quality, and differentiation set the standard for ensuring market sustainability.

Researching competitiveness strategies for the convenience store is of great importance, as it aims to strengthen a business model that, while enjoying a strategic location and a growing potential customer base, faces limitations in consolidating its presence in a highly volatile and rapidly innovating market. The goal is to solve specific problems affecting the convenience store's performance, such as a lack of differentiation from competitors, the absence of a structured strategic plan, and a shortage of innovation and sustainability tools to strengthen its market position. Likewise, the design of competitiveness strategies seeks to overcome these difficulties and create a roadmap that increases customer loyalty, optimizes management processes, and consolidates competitive advantages in the local and regional markets. Furthermore, the implementation of sustainable practices will contribute to the well-being of the surrounding community by promoting responsible consumption and greater environmental awareness.

2. LITERATURE REVIEW

Digital transformation has profoundly reshaped the way organizations operate and compete, creating unprecedented opportunities for efficiency, innovation, long-term sustainability, and resilience. Despite its transformative potential, the literature still lacks a comprehensive view of how organizations strategically integrate digital transformation with environmental, social, and governance (ESG) objectives to promote sustainability (Liu and Jung, 2024). While much of the existing research examines digital transformation from technological or operational perspectives, little attention has been paid to the mechanisms through which companies align digital initiatives with ESG-driven value creation and long-term social impact (Jamarani et al., 2024). This gap highlights the need for structured approaches that link technological innovation with environmental and social objectives, ensuring that digital transformation generates value beyond operational efficiency.

Emerging research converges on a three-tiered pathway for sustainable digital transformation, combining technological alignment and robust data governance (Pizzi, 2024), deep stakeholder engagement (Martínez-Peláez et al., 2023) and compliance-by-design with evolving disclosure regimes (Liu et al., 2025), offering a practical roadmap for scaling ESG-oriented digital initiatives. Empirical evidence from companies such as Google, Tesla, and Unilever demonstrates that the adoption of AI-driven sustainability analytics and blockchain-based supply chain monitoring can improve ESG performance. However, these integrated models remain under-explored in peer-reviewed research (Shan & Ying, 2023).

To address this gap, this section proposes an integrated analytical framework that examines the convergence of digital capabilities, ESG priorities, and regulatory factors in the generation of strategic value. This framework constitutes the theoretical basis for empirical analyses, such as theories of digital transformation and organizational capabilities, sustainable digital transformation, organizational barriers to digital transformation, sustainability in convenience retail, digitalization in retail, and value creation; using this literature, the review should be expanded to two or three pages to strengthen the analysis. For small and medium-sized enterprises (SMEs), organizational barriers—such as budget constraints, resistance to cultural change, and low digital maturity—take on much greater relevance and require more context-specific approaches (Melo et al., 2023). Theories of organizational capabilities and sustainable digital transformation emphasize that success depends not only on technology but also on the organization's ability to reconfigure its internal resources and processes (see, for example, reviews on organizational barriers to digital transformation). However, few studies examine how SMEs in the retail sector can overcome these barriers to build viable solutions that integrate sustainability and digitization as pillars of competitiveness.

Despite significant progress in the literature on digital transformation and sustainability, relevant gaps persist that limit a comprehensive understanding of how organizations—especially smaller ones—can strategically and viably align both agendas in specific contexts.

First, there is a lack of deep integration between digitalization and sustainability. Although numerous studies highlight the potential of technologies such as artificial intelligence, blockchain, and big data to improve environmental, social, and governance (ESG) performance, most adopt fragmented approaches. Analyses focused on operational efficiency or isolated technological innovation predominate, without sufficiently exploring the organizational and cultural mechanisms that enable a genuine convergence between digital capabilities and ESG objectives (Liu & Jung, 2024). As Pizzi (2024) notes, the digitization of sustainability reporting processes can improve the quality and transparency of information; however, there is still a lack of evidence on how these tools translate into a holistic transformation that generates shared value beyond mere regulatory compliance.

Furthermore, there is a notable shortage of studies focused on small businesses. Most research concentrates on large multinational corporations, such as Google, Tesla, or Unilever, where financial, technical, and human resources facilitate the adoption of advanced solutions (Shan & Ying, 2023; Chen, 2024). In small and medium-sized enterprises (SMEs), organizational barriers—such as budget constraints, resistance to cultural change, and low digital maturity—take on much greater significance and require more context-specific approaches (Melo et al., 2023). Theories of organizational capabilities and sustainable digital transformation emphasize that success depends not only on technology but also on the organization's ability to reconfigure its internal resources and processes. However, few studies examine how SMEs in the retail sector can overcome these barriers to build viable solutions that integrate sustainability and digitalization as pillars of competitiveness.

Finally, there is limited empirical evidence in Latin American contexts. Most studies come from developed economies or large Asian markets, where regulatory, infrastructural, and cultural conditions differ substantially from the reality in Latin America (Cathles et al., 2022; OECD, 2026). In countries such as Colombia, convenience retail SMEs face particular challenges: uneven digital infrastructure, evolving regulatory pressures (especially regarding environmental issues and ESG reporting), and a strong reliance on traditional business models. Although the literature on retail digitization and value creation recognizes the potential of tools such as supply chain monitoring and data analysis to improve the customer experience and reduce environmental impacts (Díaz, 2022), there is a scarcity of analyses addressing how these initiatives adapt to environments characterized by high levels of informality, limited resources, and local consumption dynamics.

In this regard, this study contributes to the field by analyzing how a small-scale organization—specifically in the convenience retail sector within a Latin American context—can integrate sustainability and digitalization as strategies for competitiveness. By examining digital capabilities, ESG priorities, and organizational barriers in an integrated manner, the study seeks not only to identify alignment mechanisms but also to propose practical and realistic pathways to overcome common obstacles. In this way, the work enriches theories of sustainable digital transformation and organizational capabilities, offering contextualized evidence that can serve as a basis for future research and for the design of policies to support SMEs in the region. This approach helps to bridge, albeit partially, the identified gaps by moving from a general overview of technological opportunities to a more granular understanding of implementation processes in real-world, resource-constrained environments.



3. METHODOLOGY

The research is conducted using a mixed-methods approach, integrating qualitative and quantitative elements to obtain a comprehensive view of the current state and growth opportunities of the Plaza Pinar Center convenience store, located in Villa del Rosario, Norte de Santander. The qualitative component will provide an understanding of customers' perceptions, management practices, and expectations, while the quantitative component will provide measurable data to support strategic decision-making. The research is descriptive and propositional in nature. It is descriptive because it seeks to characterize the current management conditions, product offerings, and the store's positioning relative to local and regional competition; and it is propositional because, based on the findings, competitiveness strategies will be designed to achieve sustainable growth. The techniques and instruments for data collection include semi-structured interviews with the manager and store staff to understand internal management, direct observation of operational processes and the perception of strengths and weaknesses; and direct observation at the point of sale to analyze customer flow, product layout, and service conditions.

For the analysis of the information, strategic tools such as the PCI matrix (Internal Capacity Profile), the POAM (Environmental Opportunities and Threats Profile), and the SWOT (Strengths, Weaknesses, Opportunities, and Threats) analysis will be used, which will allow for the consolidation of a comprehensive diagnosis of the store and guide the formulation of competitiveness strategies. Additionally, a technical and economic feasibility analysis will be conducted to evaluate the implementation of sustainability and digitalization practices.

As for the research process, it will be carried out in three phases:

1. Strategic Diagnosis: characterization of the internal and external conditions

of Plaza Pinar Center using analysis matrices and the collection of primary and secondary data.

2. Information analysis: a critical review, based on the literature, of the main findings in the strategic diagnosis matrices, focusing on sustainability, digitalization, service innovation, and differentiation from the competition.

3. Strategy development: structuring a set of strategies tailored to the target store to ensure sustainable growth and competitiveness.

The selection criteria will focus on customers representing different consumption profiles (frequent, occasional, and potential) and on the participation of the store's administrative and operational team. The population consists of users from the ring road area who frequent the Plaza Pinar Center store, while the sample will be selected non-probabilistically for convenience, prioritizing a representative number of customers to obtain reliable information for the analysis. In this way, the methodology ensures the collection and systematic analysis of sufficient and relevant information to answer the questions arising from the problem formulation, meet the specific objectives, and design a strategic competitiveness plan that enables Plaza Pinar Center to achieve sustainable growth.

4. RESULTS

Strategic Diagnosis of Plaza Pinar Center

Introduction to the Strategic Diagnosis

The strategic diagnosis constitutes the fundamental basis for understanding an organization's current situation and guiding the formulation of competitive strategies that enable its sustainable growth. Various authors argue that strategic analysis constitutes the initial phase of the planning process, as it enables the identification of internal capabilities, environmental conditions, and critical success factors that determine a company's competitiveness (David & David, 2022; Wheelen et al., 2018).

Plaza Pinar Center, located in Villa del Rosario (Norte de Santander), operates in a volatile and erratic environment where factors such as the diversification of services at gas stations, the digitization of retail, and the emergence of consumers seeking more agile, comprehensive, and convenient shopping experiences converge. Therefore, conducting a comprehensive strategic diagnosis becomes an indispensable requirement for guiding decisions, designing differentiation strategies, and enhancing its long-term economic and operational sustainability. This chapter develops the strategic diagnosis of Plaza Pinar Center using three widely accepted tools in management literature: the PCI Matrix (Internal Capability Profile), the POAM Matrix (Profile of Opportunities and Threats in the Environment), and the SWOT Matrix. The analysis is constructed by integrating conceptual information, current studies of the convenience retail sector, and theoretical guidelines that support the diagnostic process.

Internal Diagnosis: PCI Matrix (Internal Capacity Profile)

The PCI Matrix is a tool that allows for the evaluation of internal strengths and weaknesses by assessing key factors related to management, processes, resources, product offerings, and organizational positioning (Carreño & Quiroga, 2021). Its purpose is to identify those elements that provide a competitive advantage and those that limit the organization's performance.

External Diagnosis: PIC Matrix INTERNAL CAPABILITY

COMPONENT: Leadership Capacity

Capacity	Strength	Impact	Weakness	Impact
Existence of a formalized strategic plan		✓		High
Level of strategic goal achievement	✓		Medium	

Average decision-making time	✓		High	
Clarity in mission, vision, and values			✓	Medium
Author development				

COMPONENT: Administrative and Organizational Capacity

Capacity	Strength	Impact	Weakness	Impact
Defined organizational structure			✓	Medium
Inventory control	✓		High	
Daily operational management	✓		High	
Process standardization			✓	High
Author's construction				

COMPONENT: Financial Capacity

Capacity	Strength	Impact	Weakness	Impact
Operating cash flow	✓		Medium	
Access to financing			✓	High
Cost control	✓		Medium	
Investment capacity			✓	High
Author's construction				

COMPONENT: Sales and Marketing Capability

Capacity	Strength	Impact	Weakness	Impact
Strategic location (high traffic)	✓		High	
Customer relations	✓		Medium	
Marketing strategies			✓	High
Service differentiation			✓	High
Author's construction				

COMPONENT: Technological Capacity



Capacity	Strength	Impact	Weakness	Impact
Use of billing systems	✓	Medium		
Process digitization			✓	High
Use of loyalty tools			✓	Medium
Technology integration			✓	High

Author's construction

COMPONENT: Human Resources

Capacity	Strength	Impact	Weakness	Impact
Customer service	✓	High		
Staff experience	✓	Average		
Ongoing training			✓	Medium
Staff turnover			✓	Medium

Author's construction

Operational capabilities and internal management

Convenience stores are characterized by three essential elements: their need for operational efficiency, agile logistics, and inventory management with high turnover (Levy et al., 2022). At first glance, at Plaza Pinar Center, internal management shows opportunities for improvement in areas such as process standardization. For example, the literature emphasizes that efficiency in convenience stores depends on reducing service times, optimizing the layout, and implementing operational protocols (Grewal et al., 2021). In addition to inventory management. An outdated or poorly segmented inventory can limit customer satisfaction and purchase frequency. Furthermore, it is worth noting the impact of staff capabilities. Employee training and motivation are directly related to the customer experience and service quality, which are critical elements in retail (Barros et al., 2020).

Authors such as Burt and Sparks (2020) note that consumers seek immediacy, availability, and products complementary to their mobility (snacks, beverages, personal care products, after-sales services). Plaza Pinar Center has strengths such as a

basic variety of high-turnover products (fast-food outlets, big-box stores like Ara, beverage section), and a strategic location in a regional transit area. However, weaknesses have been identified, such as a lack of segmentation of the offering toward specific audiences, the absence of differentiating products (gourmet, vegetarian, healthy, eco-friendly), and limitations in visual merchandising and display strategies.

In contemporary retail, digitalization has established itself as an essential component for improving operational efficiency, inventory traceability, customer interaction, and payment processes (Deloitte, 2023). Beyond being a mere technical tool, technology acts as a key catalyst for competitiveness, allowing organizations to respond with greater agility to the demands of an increasingly dynamic and demanding market. The Plaza Pinar Center store, the subject of this study, possesses certain strengths in its physical infrastructure that constitute a solid foundation for future digital developments. It features a functional and well-distributed space, a complex that facilitates customer flow and optimizes product display across its various stores. Furthermore, the high-quality lighting and overall visibility of the retail space contribute to creating a pleasant and attractive shopping experience—aspects that remain highly valued in convenience retail.

However, these strengths contrast with significant technological weaknesses that significantly limit the organization's competitive potential. The main limitation lies in the lack of integrated information systems, which prevents unified, real-time management of inventory, sales, and finances. This fragmentation hinders informed decision-making and leads to recurring operational inefficiencies. Added to this is the absence of basic sales analytics tools, which deprives management of valuable insights into consumption patterns, product turnover, and customer behavior. Finally, the lack of modern digital payment options and loyalty and after-sales systems represents a notable gap compared to current consumer expectations, especially among younger generations

who prioritize convenience and personalization in their shopping experiences.

A convenience store's positioning depends on consumer perceptions regarding accessibility, trust, quality, and shopping experience (Kotler & Keller, 2021). Plaza Pinar Center has an advantage due to its prime location, but the store has not yet established a solid positioning in the consumer's mind, which constitutes a competitive weakness.

External Diagnosis: POAM Matrix

The POAM Matrix evaluates opportunities and threats arising from the competitive, economic, technological, social, and environmental environments. This analysis is based on contemporary models such as PESTEL and recent studies of the retail sector associated with gas stations.

MARKET COMPONENT (Convenience Retail)

External Factor	Opportunities	Impact	Threats	Impact
Growth in "on-the-go" consumption	✓	High		
Higher expectations for speed and experience	✓	High	✓	High
Trend toward healthy products	✓	Medium		
Preference for eco-friendly products	✓	Medium		
Service customization	✓	Moderate		
Saturation of the local retail market			✓	High

COMPETITIVE COMPONENT

External factor	Opportunities	Impact	Threats	Impact
Expansion of chains such as Éxito Express, Oxxo, and Ara			✓	High

External factor	Opportunities	Impact	Threats	Impact
Positioning of well-known brands			✓	High
Differentiation through service and experience	✓	High		
Growth of stores at gas stations			✓	High
Penetration of delivery platforms			✓	Medium

ECONOMIC COMPONENT

External factor	Opportunities	Impact	Threats	Impact
High traffic volume (border area)	✓	High		
Increase in occasional consumption	✓	Medium		
Instability in purchasing power			✓	High
Variability in demand			✓	High
Cross-border economic dynamics	✓	Medium	✓	Medium

SOCIO-CULTURAL COMPONENT

External factor	Opportunities	Impact	Threats	Impact
High presence of transient consumers	✓	High		
Changes in consumption habits (speed)	✓	High		
Preference for shopping experiences	✓	Medium	✓	Medium
Price sensitivity			✓	High

TECHNOLOGICAL COMPONENT

External factor	Opportunities	Impact	Threats	Impact
Digitization of sales processes	✓	High		



Use of digital loyalty tools	✓	Medium
Technology-logistics integration	✓	Medium
Technological lag compared to large chains	✓	High

ENVIRONMENTAL COMPONENT AND SUSTAINABILITY

External factor	OpportunitiesImpact	ThreatsImpact
Implementation of sustainable practices	✓	Medium
Introduction of organic products	✓	Medium
Stricter environmental regulations		✓ Top
External factor	OpportunitiesImpact	ThreatsImpact
Energy transition (reduced fuel use)		✓ High
Author construction		

POAM matrix analysis.

The convenience store industry is undergoing rapid changes driven by digitalization, demand for differentiated experiences, and the rise of on-the-go consumption (PwC, 2023). Among the most significant trends are the growth of the “impulse shopping” channel associated with mobility, higher consumer expectations regarding speed and experience, and the rise of healthy and eco-friendly products. This is coupled with synergies between technology, logistics, and personalization. According to the matrix, these trends represent opportunities for Plaza Pinar Center, as they can be progressively integrated through innovation and strategic segmentation.

Another issue is competition, which is growing in the sector due to the emergence of mini-markets within gas stations, the expansion of chains such as Éxito Express, Oxxo, and Tiendas Ara, and greater penetration of delivery platforms. According to

NielsenIQ (2023), competition in neighborhood retail has increased the pressure on small- r stores, which must differentiate themselves through service, product assortment, and convenience. For Plaza Pinar Center, this phenomenon poses a direct threat, as competitors have greater logistical capacity, brand recognition, and established marketing strategies. Additionally, there is the social and territorial factor. The municipality of Villa del Rosario and its surrounding areas present relevant characteristics, such as constant vehicular traffic due to its status as a border zone, instability in purchasing power caused by macroeconomic fluctuations, and a high presence of transient consumers. These factors represent both opportunities (greater potential customer flow) and threats (variability in demand).

Therefore, the transition toward corporate sustainability is a global trend that directly affects gas stations (International Energy Agency, 2023). Integrating sustainable practices and digital tools can become a differentiator. Clear opportunities include the introduction of green products, the implementation of energy-efficient systems, and the digitization of processes. Conversely, threats include the accelerated energy transition that reduces dependence on fuel and stricter environmental regulatory requirements.

SWOT Matrix: Strategic Synthesis

By integrating internal and external assessments, the SWOT Matrix helps identify strategic relationships to guide the development of a competitiveness plan.

Strengths (S)

Strategic location along a major transportation corridor. Constant traffic of potential customers. Adequate physical space for retail. Key connection point between the city and its outskirts.

Weaknesses (W)

Lack of marketing and customer loyalty strategies. Lack of digitized processes and systems. Suboptimal inventory management. Weak positioning in the local market.

Opportunities (O)

Retail digitization. Trend toward healthy and sustainable products. Growth in convenience consumption. Synergies with regional mobility and transit.

Threats (T)

Extensive and established competition. Regional economic fluctuations. Energy transition transforming the station's role.

Strategic Approach

FO: Leverage the strategic location to introduce differentiated products and digital services.

DO: Reduce weaknesses through technology adoption and product assortment redesign.

FA: Strengthen the customer experience to address growing competition.

DA: Mitigate weaknesses through sustainable practices and greater service personalization.

5. CONCLUSIONS

The overall objective of this study was to analyze the feasibility of designing sustainability and digitalization practices as competitiveness strategies for Plaza Pinar Center, a convenience store located in Colombia. Based on the theoretical framework, contextual analysis, and strategic formulation, it is concluded that this objective is satisfactorily met, demonstrating that both dimensions are not only feasible but strategically necessary for the business's sustainability in the medium and long term.

Upon analyzing the conceptual framework and global trends in sustainability as applied to convenience retail, it is concluded that this type of establishment faces growing pressure to adopt responsible management models.

Approaches such as the Triple Bottom Line, shared value creation, and the green economy are fully applicable to small-scale stores, demonstrating that sustainability is not exclusive to large chains but rather a real source of competitive differentiation and operational efficiency. When evaluating the impact of digitalization on retail, the analysis shows that tools such as POS systems, digital inventory management, basic sales analytics, and digital payments generate significant improvements in operational efficiency, financial control, and the customer experience. Digitalization is therefore a key enabler for data-driven decision-making, even in contexts with limited resources.

Regarding the analysis of technical, economic, operational, and environmental feasibility for Plaza Pinar Center, it is concluded that the project is viable under an incremental approach. Although detailed primary financial information is not available, the use of comparable data from the retail sector in Colombia allows for the estimation of reasonable investments in U.S. dollars, consistent with the scale of the business. Technical and operational feasibility is reinforced by the availability of accessible technological solutions and the adaptability of staff, while environmental feasibility is supported by low-cost, high-impact practices, such as energy efficiency and responsible waste management. Finally, with the aim of designing a strategic competitiveness plan, it is concluded that the formulation of FO, DO, FA, and DA strategies is essential. This plan allows for aligning sustainability and digitalization with the business's commercial objectives, strengthening its competitive positioning in the face of an increasingly dynamic and demanding environment.

Thus, this study demonstrates that the strategic integration of sustainability and digitalization constitutes a viable and relevant alternative for strengthening the competitiveness of convenience stores such as Plaza Pinar Center, contributing to both economic and performance as well as social and environmental commitment, and generating value for customers, employees, and the community at large.



The strategic diagnosis shows that Plaza Pinar Center is at a turning point in consolidating its competitive position. Its strengths and opportunities are significant, particularly due to its strategic location on the ring road connecting Cúcuta to the outskirts and the growth of the convenience market. However, the store faces substantial weaknesses related to internal processes, digitalization, product assortment, and positioning. The findings reaffirm the need to design strategies that integrate innovation, sustainability, technology, and customer experience. This assessment serves as the fundamental basis for the following chapters, where the feasibility of sustainable practices will be evaluated and strategies aimed at sustainable growth will be formulated.

6. DISCUSSION

Sustainability, as a fundamental concept in modern business management, seeks to ensure a balance among economic, social, and environmental dimensions, so that current development does not compromise the ability of future generations to meet their needs (UN, 1987, as cited in Trejo & Ferrer, 2025). In the business context, sustainability goes beyond simply reducing environmental impact to incorporate comprehensive management that also considers social well-being and financial sustainability (Wikipedia, 2025). This systemic view recognizes that productive activities are interrelated with the social and natural environment and, therefore, must respond with strategies that integrate these dimensions in a coherent and sustainable manner.

In the retail sector, this definition takes on particular importance due to the strategic role that convenience stores play as intermediaries between suppliers and consumers. Sustainable retail involves not only isolated environmental mitigation actions but also structured processes of innovation and management that address sustainability in a cross-

cutting manner (Ruiz-Real et al., 2019). According to research on sustainability in retail, retailers are uniquely positioned to reduce, reuse, and recycle materials, while promoting socially responsible practices throughout their value chains (Journal of Retailing, 2021).

Likewise, globally, sustainability has established itself as a key strategic trend for the retail sector. The current market shows growing pressure from conscious consumers who value and demand eco-friendly and socially responsible alternatives in their shopping experience (MobilityPlaza, 2023).

In fact, recent studies indicate that a significant proportion of consumers prefer to purchase products in stores that offer a wide range of sustainable options, which constitutes a significant competitive advantage for retailers that integrate sustainable practices (MobilityPlaza, 2023).

In this regard, reports from the retail sector indicate that sustainability is no longer a mere marketing initiative, but a real requirement driven by the preferences of younger generations and the expectations of the global market (Deloitte, 2025 as cited in Retailers.mx, 2025). According to these analyses, a majority of business leaders have increased their investments in sustainability, focusing on strategies that include the circular economy, waste reduction, energy efficiency, and the incorporation of clean technologies. These actions not only mitigate environmental impact but also contribute to the resilience and competitive appeal of convenience stores in an increasingly demanding environment (Retailers.mx, 2025).

The most relevant conceptual models for integrating sustainability into convenience stores include:

Triple Bottom Line (TBL):

Developed by John Elkington, this model proposes that organizations manage their performance across three simultaneous dimensions: economic,

social, and environmental. Adopting the TBL allows companies to generate sustainable value—beyond financial profitability—by incorporating social and environmental responsibility criteria into their corporate strategy (Studocu, 2025; Wikipedia, 2025). In retail, implementing the TBL facilitates the alignment of business objectives with expectations of responsible consumption, strengthening the store's competitive positioning in active markets. (Trejo & Ferrer, 2025; Studocu, 2025).

Creating shared value:

Porter and Kramer (2011) propose that companies can generate positive economic impacts while addressing social and environmental needs through strategies designed to create shared value. This approach goes beyond traditional Corporate Social Responsibility (CSR) by integrating sustainability into the core of the business model itself, encouraging innovations in products, services, and operations that benefit both the company and its stakeholders (Aguilar, 2025).

Ecological economics:

Although it is not a single model, the ecological economy emphasizes the importance of operating within planetary boundaries and managing natural resources in a way that sustains biodiversity and long-term productivity. This approach promotes practices such as energy efficiency, waste reduction, the adoption of clean energy, and the promotion of local products or those with a smaller ecological footprint—all strategies that can be adapted to convenience stores to enhance their sustainability profile.

In this regard, digitalization has established itself as one of the main drivers of transformation in the retail sector, especially in convenience stores, where speed, operational efficiency, and the customer experience are critical factors for competitiveness. In the context of gas stations and retail, Deloitte (2023) notes that the adoption of digital technologies not only optimizes internal processes but also strengthens the

relationship with the consumer and enables better data-driven decision-making.

Furthermore, the impact of technology on retail manifests itself across multiple dimensions: operational, commercial, and strategic. According to McKinsey & Company (2022), digitalization enables retailers to improve operational efficiency by up to 30% through process automation, the reduction of human error, and real-time analysis of consumer behavior. In the specific case of convenience stores, these advantages are particularly relevant due to high product turnover, the volume of daily transactions, and the need for quick service.

As a result, digital transformation has changed consumer expectations, with shoppers now demanding faster, safer, and more personalized shopping experiences. NielsenIQ (2023) notes that customers increasingly value the integration of technological solutions that streamline payment, ensure product availability, and enhance brand interaction—even in quick-purchase or on-the-go shopping formats. In this sense, digitization is no longer an option but has become a basic competitive requirement. For convenience stores like Plaza Pinar Center, the technological impact translates into the ability to improve point-of-sale management, optimize inventory, reduce operating costs, and strengthen customer loyalty—factors that directly impact the business's economic sustainability.

Accordingly, Point of Sale (POS) systems form the technological foundation of modern retail. Beyond simply recording transactions, today's POS systems allow for the integration of information on sales, inventory, margins, and customer behavior, facilitating more efficient and strategic business management (PwC, 2023). In convenience stores, where product turnover is high and the margin per unit is typically low, having an efficient POS system is key to ensuring profitability. Digital inventory management, supported by integrated POS systems, allows for real-time monitoring of stock levels, reduces stockouts, and minimizes losses due to expiration or overstocking.



According to Deloitte (2023), the implementation of digital inventory systems can reduce costs associated with poor stock management by up to 20%. This is particularly relevant for high-turnover products such as beverages, snacks, and prepared foods, which are typical in convenience stores.

Furthermore, basic data analytics has become an accessible tool even for small and medium-sized businesses. The analysis of simple data—such as peak sales times, most-demanded products, and average ticket size—enables informed decisions regarding product assortment, pricing, and promotions (Kotler & Keller, 2021). In this regard, digitalization enables evidence-based management, moving beyond intuition as the sole decision-making criterion. Finally, digital loyalty programs represent a key strategy for strengthening customer relationships and increasing purchase frequency. According to PwC (2023), consumers who participate in well-designed loyalty programs tend to spend more and maintain a longer-lasting relationship with the brand. In convenience stores, these programs can be implemented through simple systems such as point accumulation, personalized discounts, or rewards for repeat purchases, supported by low-cost digital tools. Additionally, the adoption of digital payments—such as e-wallets, QR codes, and contactless payments—reflects a global trend driven by the pursuit of speed, security, and hygiene in transactions (GSMA, 2022). In Latin America, the growth of digital payments has accelerated, and their adoption in local retail () is associated with an improved customer experience and reduced service times (Inter-American Development Bank [IDB], 2022).

In the case of Plaza Pinar Center, the implementation of digital payments and loyalty programs would not only help modernize the shopping experience but would also allow for the collection of valuable information on customer consumption habits, strengthening the competitiveness and sustainability of the business in an increasingly digitized environment.

Critical Discussion.

While the combination of digitalization and sustainability offers significant potential to improve the competitiveness of convenience stores, it is not an automatic or universally valid equation. The literature warns that many initiatives fail when adopted under a technocentric approach—that is, one focused exclusively on incorporating digital tools or “green” practices without considering organizational maturity, available resources, or the local socioeconomic context (Melo et al., 2023; Rupeika-Apoga & Petrovska, 2022).

In the case of small businesses like Plaza Pinar Center, the barriers are particularly pronounced. Among the most common are capital constraints, cultural resistance to change, gaps in staff digital skills, and uneven technological infrastructure, especially in Colombia’s intermediate regions where connectivity and access to affordable solutions still pose challenges (Portocarrero-Sierra, 2025; OECD, 2021). Studies on SMEs in Latin America highlight that these constraints not only slow adoption but can create a vicious cycle: the lack of financial resources limits investment in technology, which in turn reduces the ability to generate data and efficiencies that could justify new investments (Gonzalez-Tamayo et al., 2023; CAF, 2023).

Additionally, some sustainability practices may entail short-term additional costs that put pressure on the profitability of businesses with narrow margins, such as those typical of convenience retail. The implementation of LED lighting, biodegradable packaging, or waste management systems, while generating savings in the medium and long term, requires an initial investment and an adaptation period that not all micro and small businesses can absorb without affecting their operating liquidity (Zaman, 2025; Shields, 2024). This tension between immediate costs and deferred benefits explains why many SMEs perceive sustainability more as a regulatory or image burden than as a true strategic opportunity.

Therefore, true competitiveness does not arise simply from “adding” sustainable technologies and practices, but from designing a strategic, gradual

integration that is deeply tailored to the organization's actual capabilities. In Latin American contexts, this integration must prioritize low-cost solutions, ongoing team training, and the building of local partnerships with suppliers, universities, or government support agencies (Vrontis et al., 2022; Portocarrero-Sierra, 2025). Otherwise, there is a risk that the digital and environmental gap will widen rather than close, leaving small businesses at a disadvantage compared to larger or better-positioned competitors. For the convergence of digitalization and sustainability to generate real value in contexts such as Colombia's, it is essential to adopt a holistic approach that combines strategic vision with a realistic understanding of internal and external constraints. Only then will these initiatives cease to be isolated projects and become genuine drivers of resilience and sustainable competitiveness.

Design of Competitiveness Strategies for Plaza Pinar Center.

According to David and David (2022), strategic planning enables organizations to define a clear direction, allocate resources efficiently, and respond proactively to changing conditions in the competitive environment. Therefore, this chapter proposes a comprehensive strategic model that combines innovation, sustainability, and digitalization as pillars of competitiveness, supported by financial and operational estimates based on comparable data from the sector in Colombia and Latin America.

Strategy Formulation

Based on the SWOT matrix developed in the previous chapter, FO, DO, FA, and DA strategies were formulated to leverage strengths, capitalize on opportunities, address weaknesses, and mitigate threats.

SWOT (Strengths–Weaknesses–Opportunities–Threats) Strategies: We propose introducing a differentiated product assortment with a focus on health and sustainability, leveraging the center's strategic location and high foot traffic. This includes adding healthy products, premium snacks,

functional beverages, and eco-friendly options. Additionally, we recommend implementing a cloud-based POS system with basic analytics to optimize sales, inventory, and product turnover. We expect an increase in the average ticket size of between 8% and 12%, along with improved turnover of strategic products.

SWOT Strategies To improve the current weak market position, we propose implementing a basic digital loyalty program based on point accumulation and repeat-purchase promotions, supported by the POS loyalty module. Additionally, efforts will be made to optimize digital inventory control to reduce stockouts and losses due to expiration. With these measures, an increase in purchase frequency of between 10% and 15% is projected, along with a reduction in operating losses of up to 20%.

SWOT (Strengths–Weaknesses) Strategies The customer experience will be strengthened as a competitive barrier against large chains by designing a fast, clear, and reliable purchasing process. This includes effective signage, immediate digital purchase options, and vending machines. Additionally, digital and contactless payments will be implemented via terminals with QR codes to reduce checkout times and increase convenience. A reduction in checkout time of between 15% and 25% is anticipated, along with increased preference from casual shoppers.

SWOT (Strengths–Weaknesses–Opportunities–Threats) Strategies Environmental sustainability practices will be gradually implemented to mitigate structural weaknesses in the face of the energy transition and growing market demands. Initial actions include switching to LED lighting, basic waste management, and the development of an interim recycling manual. At the same time, efforts will be made to reduce operational and energy costs through greater energy efficiency. These initiatives will reduce energy costs by 15% to 20%, in addition to improving the center's corporate image and environmental legitimacy.



According to Kaplan and Norton (2020), the effectiveness of this strategic plan depends on clearly defining indicators, responsible parties, timelines, and resources, so that strategies do not remain merely conceptual but are transformed into results-oriented operational actions. In the case of Plaza Pinar Center, the action plan is structured with a 12-month implementation timeline, featuring progressive goals that align with operational capacity and the incremental nature of the project.

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