



FOREIGN TRADE AND INTERNATIONAL COMPETITIVENESS: FOR FOOTWEAR SMES IN LEÓN, GUANAJUATO, MEXICO, IN THE GLOBAL MARKET

COMÉRCIO EXTERIOR E COMPETITIVIDADE INTERNACIONAL: PARA AS PMES DE CALÇADOS DE LEÓN, GUANAJUATO, MÉXICO, NO MERCADO GLOBAL

COMERCIO EXTERIOR Y COMPETITIVIDAD INTERNACIONAL: PARA LAS PYMES DE CALZADO DE LEÓN, GUANAJUATO MÉXICO EN EL MERCADO GLOBAL

 <https://doi.org/10.56238/edimpecto2025.057-016>

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ABSTRACT

Mexican small and medium-sized enterprises (SMEs) in the footwear sector face significant challenges in competing internationally, while opportunities exist in the global market. This study analyzes the challenges (e.g., lack of logistics knowledge, limited financing, import competition) and opportunities (trade agreements, local clusters, nearshoring) that impact the international competitiveness of Guanajuato-based SMEs in the footwear industry. A structural equation model is developed to evaluate how internal factors (innovation, quality, and internationalization capacity) influence the international competitiveness of these companies. Using a quantitative approach with a survey of a sample of SMEs, the results show that innovation and quality in production processes have significant positive effects on international performance, while foreign trade preparedness (logistical, financial, and digital capabilities) is key to taking advantage of global opportunities. Finally, implications for managers and policymakers are discussed, and future lines of work are suggested to strengthen the presence of Mexican footwear SMEs in international markets.

Keywords: Foreign Trade. International Competitiveness. SMEs. Footwear Industry. Structural Equations.

RESUMO

Pequenas e médias empresas (PMEs) mexicanas do setor calçadista enfrentam desafios significativos para competir internacionalmente, enquanto existem oportunidades no mercado global. Este estudo analisa os desafios (por exemplo, falta de conhecimento em logística, financiamento limitado, concorrência de importações) e as oportunidades (acordos comerciais, clusters locais, nearshoring) que impactam a competitividade internacional das PMEs sediadas em Guanajuato no setor calçadista. Um modelo de equações estruturais é desenvolvido para avaliar como fatores internos (inovação, qualidade e capacidade de internacionalização) influenciam a competitividade internacional dessas empresas. Utilizando uma abordagem quantitativa com uma pesquisa com uma amostra de PMEs, os

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resultados mostram que a inovação e a qualidade nos processos de produção têm efeitos positivos significativos no desempenho internacional, enquanto a preparação para o comércio exterior (capacidades logísticas, financeiras e digitais) é fundamental para aproveitar as oportunidades globais. Por fim, são discutidas as implicações para gestores e formuladores de políticas, e são sugeridas linhas de trabalho futuras para fortalecer a presença das PMEs mexicanas do setor calçadista nos mercados internacionais.

Palavras-chave: Comércio Exterior. Competitividade Internacional. PMEs. Indústria Calçadista. Equações Estruturais.

RESUMEN

Las pequeñas y medianas empresas (pymes) mexicanas del sector calzado enfrentan desafíos significativos para competir internacionalmente, a la par que existen oportunidades en el mercado global. Este estudio analiza los retos (por ejemplo, falta de conocimiento logístico, financiamiento limitado, competencia de importaciones) y las oportunidades (tratados comerciales, clúster local, nearshoring) que inciden en la competitividad internacional de las pymes guanajuatenses en la industria del calzado. Se desarrolla un modelo de ecuaciones estructurales para evaluar cómo factores internos (innovación, calidad y capacidad de internacionalización) influyen en la competitividad internacional de estas empresas. Mediante un enfoque cuantitativo con encuesta a una muestra de pymes, los resultados muestran que la innovación y la calidad en procesos productivos tienen efectos positivos significativos en el desempeño internacional, mientras que la preparación en comercio exterior (capacidades logísticas, financieras y digitales) resulta clave para aprovechar oportunidades globales. Finalmente, se discuten implicaciones para gestores y formuladores de políticas, y se sugieren líneas de trabajo futuras para fortalecer la presencia de las pymes mexicanas del calzado en los mercados internacionales.

Palabras clave: Comercio Exterior. Competitividad Internacional. Pymes. Industria del Calzado. Ecuaciones Estructurales.

1 INTRODUCTION

Mexican SMEs constitute the backbone of the national economy, contributing more than 50% of GDP and about 70% of employment (Panorama Latino, 2025). However, their participation in foreign trade is relatively low: only 16% of them carry out export or import activities, and it is even estimated that only 1% of Mexican SMEs export regularly, contributing around 11% of the total value exported (Organización para la Cooperación y el Desarrollo Económicos, 2024). This limited international insertion is due to multiple factors. On the one hand, SMEs face internal obstacles such as scarce financial resources and shortages in technical knowledge to export. For example, many companies lack experience in logistics, regulations and customs processes, which makes it difficult to comply with certifications and regulations of foreign markets (Mondragón, 2025). The lack of experience in foreign trade represents a key challenge: in Guanajuato it is calculated that no more export and import opportunities are pierden for the insufficient understanding of this area (El Sol de León, 2025a). Asimismo, limitaciones en financiamiento y digitalización restricten la internacionalización de las pymes. The traditional financial infrastructure is expensive and delays international transactions (e.g., transfers that take days, 3–7% foreign exchange costs) and the absence of tools such as multi-currency accounts for their competitiveness.

On the other hand, there are external factors that plant significant straights. La apertura comercial y la globalización han expuesto a las pymes del calzado a la competencia directa con productores de bajos costos en Asia. Mexico is the new footwear producer worldwide (Government of the State of Guanajuato, 2021), and Guanajuato in particular is the national leader with 80% of production (132 out of 165 million pairs in 2020). However, the entry of imported footwear – mainly from China – has generated an intense competence in precios. By 2024, Mexico imported 117.45 million pairs (55% from China) compared to 39.18 million exported (Cámara de la Industria del Calzado del Estado de Guanajuato, 2024), providing trade defense measures. De hecho, the Mexican government has led to imposing compensatory costs of up to 78% on imports of Chinese footwear to protect the local industry (El Sol de León, 2025a). Esta competencia global ha presionado a las smemes a mejorar su productividad y eficiencia. However, previous studies suggest that productivity by itself does not guarantee international competitiveness; For example, in León's zapaterous SMEs we did not find a direct relationship between greater internal productivity and its competitiveness

in the market (Cruz Guzmán, 2014), which indicates that other strategic factors are determinant.

Despite the challenges, the global market also offers important opportunities for SMEs in the market. Mexico has free trade treaties (such as the T-MEC with EE. UU. and Canada, and agreements with Europe and Asia) that open up opportunities to new markets. The Mexico-United States-Canada Treaty (T-MEC) includes for the first time a chapter dedicated to SMEs (chapter 25) and another to competitiveness (chapter 26), recognizing the need to integrate the commercial flows of the block (Moscoso Vargas, 2024). Si bien el T-MEC ofrece oportunidades –por ejemplo, facilitar que las symes participen como proveedoras en cadenas regionales automotrices o vendan al gobierno de EE. UU.– It also requires overcoming knowledge rights, financing and compliance with international standards.

In the post-pandemic context, there has been a demand for the *nearshoring phenomenon*, where global corporates reuse operations in Mexico to take advantage of their geographical proximity with EE. UU. This environment creates opportunities for local SMEs as providers of inputs and services to these multinationals, allowing them to be incorporated into international value chains (BBVA, 2024). Guanajuato, not being a border state, but having a logistics infrastructure and a consolidated automotive and footwear industry, has benefited from investments derived from *nearshoring*. For the SMEs of the calzado, this implies potential access to new foreign customers who value the fast delivery from Mexico (48 hours by land to EE. U.S., vs. weeks since Asia). However, taking advantage of these opportunities requires that SMEs scale their productive capacity and meet demanding international quality standards (e.g. ISO certifications) to qualify as providers of large companies.

In Guanajuato there is an industrial ecosystem that can launch the competitiveness of SMEs. León has been named the *"World Capital of the Lime"* to concentrate one of the *most complete cuero-calzado clusters in Latin America* (INEGI, 2024). The geographical agglomeration of manufacturers, suppliers and institutions of support in this cluster facilitates collaboration, the transfer of knowledge and open innovation between local companies (Panorama Latino, 2025). Estudios han mostrado que las empresas en *clúster* tienden a innovar más y ser más competitivas globalmente gracias a sinergias compartidas. Additionally, local organizations such as the *Coordinator for the Promotion of Foreign Trade (COFOCE)* and the *Chamber of Commerce (CICEG)* offer training and specialized support. For example, the state government launched the "Valor Guanajuato" initiative, which includes workshops such as *"Financial instruments for export"* distributed to dozens of SMEs in

strategic sectors (footwear, cuero-moda, etc.) to strengthen their internationalization capacities (Government of the State of Guanajuato, 2025). Thanks to this type of public-private efforts, Guanajuato has recently consolidated itself as the first national place in exports between states on the border, reflecting the entrepreneurial dynamism of the region.

Considering the above, it is clear that there is a need to increase the international competitiveness of the SMEs in the footwear so that they can take full advantage of the global market. International competitiveness is defined here as the ability of a company to offer products of superior value and perform successfully in foreign markets against its competitors. Its competitiveness depends on multidimensional factors, but rather than the price, which have been identified in the literature. For example, KPMG (2014) was once key factors apart from cost, highlighting among them the quality of the product and management, innovation and technological development (R+D+i), design and brand, effectiveness in logistics and distribution, financing capacity, and the formation of strategic alliances, an opinion later shared by Gutiérrez et al (2023); Aguilar-Tortosa, et al (2024); Sarabia-Alonso et al (2024). En el caso del calzado guanajuatense, muchos de estos elementos son cruciales. Differentiation for quality and design is essential to compete in international niche markets, given that it is difficult for Mexican SMEs to be able to match Asian producers at low costs. La capacidad de innovación –ya sea en producto, proceso o modelo de negocio– permite generar ventajas competitivas sostenibles en entornos de cambio tecnológico acelerado. The business orientation of the directors also played a role: a study with 170 SMEs in León that companies with a greater propensity for risk and innovation (dimensions of business orientation) show better performance, but that aggressive competitiveness (in prices) did not result significantly (Álvarez, López-Torres & Álvarez-Rodríguez, 2018; Barragán-Hernández et al, 2024; Sarabia-Alonso et al, 2024; Maldonado-Guzmán et al, 2024). Esto refuerza la idea de competir mediante diferenciación e innovación más que solo por costo.

Asimismo, the company's internationalization capacity – understood as the set of knowledge, skills and resources to operate in foreign markets – is decisive. Those companies that come to know international regulations, develop global distribution channels (for example, through electronic commerce) and integrate with business networks, have greater export success possibilities (UPS & Secretaría de Economía, 2025). The accelerated adoption of e-commerce during the last few years has opened an accessible route for SMEs to reach global consumers: in 2024 retail sales in line in Mexico will reach 20%, reaching 790

million pesos. However, to take advantage of international *e-commerce*, SMEs need to be digitized and strengthen their logistics processes, overcoming the technological gap that still persists. Companies that manage to co-create value with foreign customers and adapt their products to their needs generate more solid relationships and competitive advantage; For example, research on Chilean SMEs shows that co-creation of value with customers has a direct and indirect positive impact on competitiveness, explaining up to 58% of its variance (Cabana, Cortes & Peña, 2024).

In summary, the international competitiveness of quality SMEs depends on internal factors (innovation, quality, managerial and internationalization capacities) and external factors (policy environment, production chains, market conditions). There are no important gaps that limit your participation in global trade – from financial and technological deficiencies to structural obstacles in the business environment – but there are also strategies and initiatives aimed at subsidizing. On this basis, the present study plants a research model to analyze how some of these key factors relate to the international competitiveness of the rural SMEs of Guanajuato. In this way, it seeks to provide evidence and recommendations that guide actions both at the business and public policy levels, so that this important regional sector takes advantage of the opportunities of the global market and improves its performance in foreign trade.

2 THEORETICAL FRAMEWORK

The literature on international competitiveness of SMEs is multiple theoretical approaches to understand its determinants. Un primer enfoque proviene de la economía industrial y la estrategia competitiva (Barragán-Hernández, & Aguilar-Fernández, 2024; Esparza, 2025; Heredia Pérez et al, 2023). Michael Porter (1990) introduces the notion of *sustainable competitive advantage*, emphasizing that a company is internationally competitive if it can create superior value for its customers in comparison with its foreign rivals, as well as through leadership in costs or differentiation in quality, service, innovation, etc. In the case of SMEs in emerging countries, achieving competitive advantage suele implicar estrategias de diferenciación dado que competidor únicamente en costos las coloca en desventaja frente a productores masivos de economías de escala (por e.g., fabricantes asiáticos). Hence the importance of factors such as product quality and innovation.

Quality has been identified as a fundamental pillar: a company that aspires to be competitive abroad must demonstrate consistent quality in its products/processes and in its

management, complying with international standards and expectations of the global consumer. On the other hand, innovation – conceptualized as the introduction of new products, process improvements, new forms of commercialization or other significant changes – is often cited as the engine of competitiveness. Estudios a nivel global muestran que la innovación es crucial para que las desarrollen ventajas competitivas sostenibles en entornos de mercados abiertos y cambio tecnológico acelerado. Schumpeter's theory argues that continuous innovation allows firms to implement "creative destruction" processes that keep them at the forefront, introducing new products, more efficient methods or exploiting new markets (Schumpeter, 1934 cited in Organización para la Cooperación y el Desarrollo Económicos, 2024).

Another relevant theoretical framework is the *Resource-Based View*, which postulates that competitiveness comes from possessing valuable, rare, unimitable, and organized internal resources and capacities (VRIO). In the context of SMEs, resources such as specialized human capital, technological know-how, organizational flexibility and learning capacity can be part of international competitive advantage (El Sol de León (OEM). (2025b). For example, SMEs with experienced management teams in international business, the highly skilled staff in footwear design and engineering, will be better positioned to compete globally. La orientación emprendedora de la organización –que abcompass la propensión a la innovación, la proactividad ante oportunidades y la disposición al riesgo también se ha asociado a un mejor desempeño exportador. In the Guanajuato body industry, Álvarez-Torres et al. (2018) analyzed this construct through a model of structural ecuaciones and found that companies with greater business orientation (especially in innovation and risk taking) achieved better performance, but that competitive aggression did not contribute better (Álvarez-Torres, López-Torres & Álvarez-Rodríguez, 2018). Esto sugiere que cultivación interno una cultura emprendedora e innovadora es beneficioso, pero competir agresivamente en precios no necesariamente mejora la competitividad en este sector, alineado con la idea de diferenciarse más que apegar guerra de precios.

From the perspective of international administration, the literature on *international business and internationalization of SMEs* provides other explanatory factors. The theory of Uppsala describes internationalization as a gradual process of accumulation of knowledge and commitments in foreign markets. The SMEs started to export sporadically to neighboring countries (ej. las zapateras guanajuatenses vendiendo a EE. UU. o Centroamérica) and, according to his experience, increase his international commitment (Han, Goxe & Freeman,

2024; Liesch & Welch, 2024). An affinous concept is the capacity of absorption: SMEs with greater capacity to acquire and assimilate knowledge from abroad (by training, consultancy or alliances) can adapt better to international requirements. The importance of networks (*networking*) is also highlighted: according to the network approach, relationships with customers, distributors and foreign partners are key assets that facilitate entry and expansion in foreign markets. Por ejemplo, la colaboración en alianzas estratégica puede ayudar a memes a compartir costos y riesgos de internacionalización (KPMG, 2014), así como acceder a canales de distribución establecidos. For the footwear SMEs, integrating into the global value chains of major brands or *retailers* (via proveneeduría) represents a way to grow internationally, although it requires compplir estándares estrictos y ajustar procesos internos (Cao & Jayasinghe, 2024; Riemens et al, 2023; Rossi et al, 2024).

In the institutional and policy environment, trade facilitation is a critical external factor. The theory of trade facilitation suggests that the reduction of tramites, customs costs and technical barriers can significantly increase the participation of SMEs in exports (OECD/WTO, 2015). Mexico has advanced in some areas (single winds, free trade treaties), but there are still areas of improvement in logistics and financing. The national logistics infrastructure focuses on competitiveness: reliable delivery times and reasonable transport costs are necessary for SMEs to compete in *just-in-time* markets. In the same way, access to financing under appropriate conditions (credit for working capital, export insurance, financing for foreign buyers, etc.) is fundamental. According to KPMG (2014), the financing adapted to size and company projects is one of the first factors to export ((KPMG, 2014). Instituciones como NAFIN y Bancomext en su momento desarrollaron productos específicos, pero actualmente, los existentes aún son limitados entre pymes. A report from the National Institute of Entrepreneurship showed that Mexican mipymes face challenges in access to credit, technological adoption and training, requiring comprehensive public policies to overcome these gaps (INADEM, 2018).

Based on this review, three key dimensions were identified on which our theoretical model was constructed: Innovation, Quality in management, and Capacity for internationalization. La Innovación encapsula la habilidad de la pyme para desarrollar nuevos productos, mejorar procesos productivos y adoptar tecnología. It includes R+D, adoption of information technologies, and collaborations to innovate (e.g. with providers or research centers). It is to be hoped that SMEs with greater innovative orientation will obtain products

with greater added value, differentiated and adjusted to global trends, which would translate into better international competitiveness (Panorama Latino, 2025).

The second dimension, Quality and internal management, includes quality management practices, production efficiency, certifications (ISO 9001, etc.), personnel training and general management capabilities to operate efficiently. This factor reflects that so much *"good hecha"* is in the company inside the country, something essential to sustain exports consistently. Several studies cite it as a determinant: Bonales et al. (2020) study agricultural exporting companies and found that variables such as product quality and personal training were associated with better export performance (Hair, Ringle, & Sarstedt, 2014). Asimism, KPMG (2014) points out that the demonstrated quality of good service, along with a professional management, is mandatory to compete externally.

Finally, we define the capacity of internationalization of SMEs as a construct that encompasses its level of knowledge of foreign markets, management of export procedures, degree of digitalization (use of *e-commerce*, international digital marketing), and level of integration in business networks or global chains. This factor reflects that so much prepared is there company to *jump fronteras*. For example, to know and take advantage of foreign trade tools (incoterms, financing, insurance) and to count on contacts or strategic alliances to facilitate insertion in global markets (Moscoso Vargas, 2024). También incorpora la adopción de plataformas digitales para ventas internacionales, un aspecto cada vez más necesario en la era del comercio electrónico transfronterizo. Se espera que, a greater capacidad de internacionalización, medida en estos términos, mayor sea la competitividad global de la SME.

Con estos tres ejes conceptuales se puede modelar la competitividad internacional de las spymes. Distinguished authors have employed modelos de ecuaciones estructurales to examine similar relations. For example, Cabana et al. (2024) evaluated Chilean SMEs finding that co-creation with clients (an aspect of relational capacity) had a strong influence on competitiveness (Cabana, Cortes & Peña, 2024). Bonales et al. (2020) built a PLS-SEM model for exporting companies identifying latent variables of competitiveness associated with quality, price, technology, capacity and distribution. Based on the theory and revised evidence, in this study we propose a model that relates the dimensions of innovation, quality/management and capacity of internationalization with the international competitiveness of SMEs (see Figure 1, where each construct is measured by several

observable items). Continuation, the objectives of research and the corresponding hypotheses to contrast this model were planted.

Figure 1

Theoretical model PLS-SEM propuate. The arrows represent hypotheses H1, H2 and H3 that indicate the positive effect of INN, CAL and INT on IC

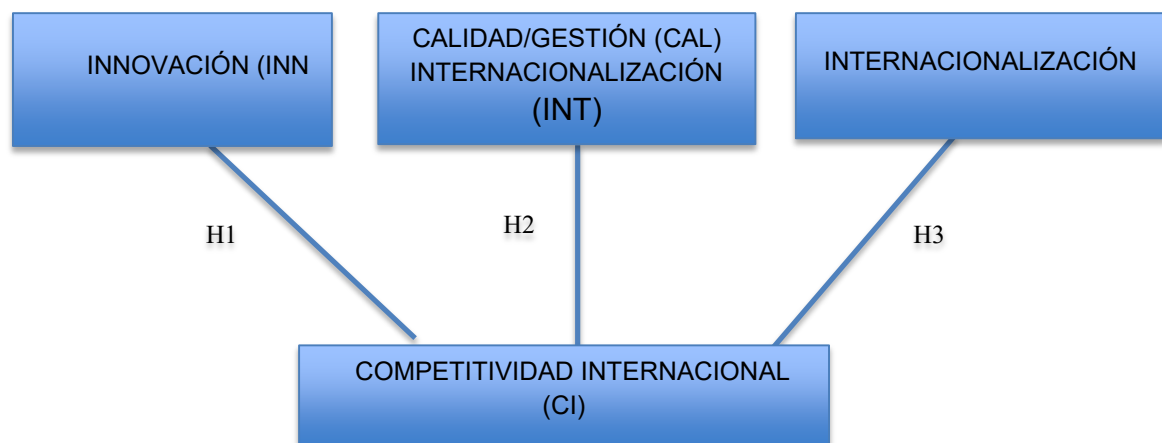


Figura 1. Modelo teórico PLS-SEM propuesto. Las flechas representan las hipótesis H1, H2 y H3 que indican el efecto positivo de INN, CAL e INT sobre CI.

Fuente: Elaboración propia

Nota: Modelo de ecuaciones estructurales (PLS-SEM) que relaciona los constructos: Innovación (INN), Calidad/Gestión (CAL) y Capacidad de Internacionalización (INT) con la Competitividad Internacional (CI) de las pymes del sector calzado en Guanajuato.

2.1 RESEARCH OBJECTIVES

1. To determine the influence of the innovation capacity of SMEs in the sector worked in Guanajuato on its international competitiveness, evaluating itself as a greater propensity to innovate translated into better performance in global markets.
2. Analizar el impacto de la gestión de calidad y las capacidades interna (eficiencia operativa, capacitación, certificaciones) en la competitividad internacional de las smemes, identificando en que medida las mejoras interna se reflejan en ventajas competitivos externas.

3. Evaluar el efecto de la capacidad de internacionalización (conocimientos de comercio exterior, adopción de herramientas digitales, redes de negocio) en la competitividad internacional de las smemes, determinando si las empresas más preparadas e comunicadas internacionalmente achieve superiores niveles de éxito exportadorador.

2.2 HYPOTHESES OF RESEARCH

Derivados de los objetivos anteriores y del marco teórico, se proponen las siguientes hipótesis:

- **H1:** The capacity for SME innovation has a significant positive effect on its international competitiveness. Es decir, companies with greater innovative intensity (development of new products, improvement of processes, technological adoption) will present better results in exports, market penetration and global competitive position.
- **H2:** Internal quality management and better practices continue to have a positive influence on the international competitiveness of SMEs. Those companies with high quality standards, efficient processes and qualified personnel achieved greater international customer satisfaction, business repetitiveness and reputation abroad, increasing their global performance.
- **H3:** The company's internationalization capacity has a significant positive effect on its international competitiveness. SMEs that have knowledge and skills in foreign trade, logistics/export management, use of e-commerce and participation in networks or global chains, will achieve a superior international performance among those less prepared in these aspects.

Estas hipótesis serán contrastadas mediante un modelo de ecuaciones estructurales, described en la siguiente sección, con el fin de identificar la significancia y magnitud de cada relación propuesta.

2.3 DISEÑO DE LA INVESTIGACIÓN USANDO ECUACIONES ESTRUCTURALES

To prove the hypotheses planted, a quantitative investigation with a model of structural ecuaciones (SEM) de tipo confirmatorio was disdesigned. The theoretical model consists of three exogenous latent variables – Innovation (INN), Quality (CAL) and Internationalization Capacity (INT) – and an endogenous latent variable – International Competitiveness (CI). Each latent construct was defined based on multiple observable indicators, measured by

means of items in a body, representing arrows from INN, CAL and INT to CI, reflecting the hypothetical causal relationships H1, H2 and H3 respectively.

Dado que se trata de un modelo con constructos multidimensionales y el estudio se realiza con un tamaño muestral relativamente limitado (característico en estudios de spymes a nivel regional), it was decided to employ the technique of modeling structural studies of partial minimum cuadrados (PLS-SEM). This focus is appropriate in exploratory or predictive contexts, with small to moderate samples, and when the model includes many indicators or is not fully fulfilled, assumptions of normality (Bonales et al. (2020). The PLS-SEM method allows to simultaneously estimate the validity of the measurement model (relationship between indicators and its construct) and the structural relationships between latent constructs, optimizing the explained variance of dependent variables (Hair et al., 2014). Se utilizó software especializado (por ejemplo, SmartPLS v4) para la estimación del modelo.

In the design of the study, scales previously validated in the literature, adapted to the context of the shoe, were included. For Innovation (INN), items on the frequency of energy of new designers, percentage of inverted revenues in product development, adoption rate of new production technologies, etc. (adapted from measures used in innovation studies in manufacturing companies) (Panorama Latino, 2025). The variable quality management (CAL) was related to items such as: level of quality certifications obtained (ISO 9001 or others), existence of continuous improvement programs, percentage of personnel trained annually, indicators of internal productivity, among others (Cruz Guzmán, 2014). For International Logistics Capacity (INT), it includes feedback on: knowledge of export standards and resources, previous experience in exports, use of e-commerce platforms or international marketplaces, management of English or other languages in the company, participation in international trade shows or commercial missions, connections with distributors or foreign customers, and digitalization (use of management systems, digital marketing) (Mondragón, 2025).

Finally, International Competitiveness (CI) –variable depending– was evaluated through performance indicators and external position: percentage of exported production, number of destination markets served, rate of growth of international sales, margin of profitability in foreign markets, and a comparative self-evaluation with respect to foreign competitors (e.g., perception of advantage in quality, design or service). Algunos de estos indicadores son objetivamente verificables (ej. exportaciones como % de ventas), mientras

que otros son de percepción; therefore, CI was modeled as a mixed construct of objective and competitive performance (Cabana, S. R., Cortes, F. H., & Peña, M. A. (2024).

The museum design contemplated the SME manufacturers of footwear in the state of Guanajuato. According to the 2019 Economic Census of INEGI, there are approximately 4,700 economic units dedicated to housing in Guanajuato (out of 9,000 at the national level) (Government of the State of Guanajuato, 2021), concentrated mainly in León, San Francisco del Rincón and Purísima. For the purposes of this investigation, the unit of analysis was defined as the company (SME) and the accountant's response was preferably the general manager, director or dueño with broad knowledge of the firm's operations and strategies. The survey was planted with a sample stratified by subregion (León vs. other municipalities) and company size (micro, small, median), seeking to include companies of different scales within the SME definition (micro: 1-10, small: 11-50, median: 51-250 employees, according to the Mexican law). It was estimated that a sample of 150 companies would be suitable to apply PLS-SEM with the proposed model (considering the rule of having at least 10 times the number of indicators per most complex construct, or 10 times the number of relations directed to the most connected construct).

Se lograron recolectar datos de 120 pymes mediante entrevistas directas y formulario en línea. Prior to structural analysis, descriptive analysis was carried out and the validity and reliability of measurement scales were examined. Cronbach's coefficient was calculated and the reliability of the construct was calculated, verifying values greater than 0.70, indicating satisfactory internal consistency. Convergent validity was also evaluated through the AVE (Average Variance Extracted), obtaining values higher than the threshold of 0.50 for all constructs, which suggests that the indicators share sufficient common variance (Hair et al., 2016). The discriminant validity was proven with the Fornell-Larcker criterion and the HTMT matrix, confirming that each construct is distinguishable from the demás (for example, the cuadrada root of the AVE of each factor was greater than its correlaciones con otros factores). Estos pasos aseguran que el modelo de medida es solid, condición necesaria antes de interpretar el modelo estructural (Bonales Valencia, Ortiz PPaniagua, & Zamora Torres, 2020).

En el modelo estructural, the relationships H1, H2 and H3 were estimated initially without restrictions. Se empleó un algoritmo de estimación PLS con 5,000 *bootstraps* para obtener los pesos de caminos (path coefficients) y sus significancias. Additionally, we reviewed the R^2 determination coefficients to evaluate the proportion of the variation in

international competitiveness explained by the model, and the Stone-Geisser Q^2 prediction indices to confirm predictive ability. It is worth mentioning that, in the differential of SEM based on covariances (CB-SEM), PLS-SEM does not provide global adjustment indices such as Chi-cuadrado o RMSEA; In its place, the SRMR (Standardized Root Mean Residual) was considered for the estimated model, obtaining an $SRMR < 0.08$ that suggests an acceptable fit between the matrix of observed correlations and the reproduced by the model.

In short, the research design combines a theoretical-empirical review with an SEM model applied to field data, which allows to quantitatively probar the hypotheses planted on the basis of the literature. The results obtained from the application of this design are presented, followed by their analysis.

3 RESULTS APPLYING STRUCTURAL STUDIES

Continuing, the main results obtained are summarized after applying the model of PLS-SEM structural studies to the sample of footwear SMEs in Guanajuato ($N \approx 120$).

Calidad del modelo de medida: Todos los constructos latentes mostraron adecuados niveles de confiabilidad y validez. The reliability indices were 0.88 for innovation, 0.91 for quality/management, 0.84 for internationalization capacity and 0.89 for international competitiveness, surpassing the threshold of 0.70. The AVE of each construct oscillated between 0.56 and 0.68, indicating sufficient convergent validity. La validez discriminante quedó establecida; For example, the maximum correlation between constructs was 0.55 (entre Innovación y Capacidad de internacionalización), mientras que la raíz de AVE de cada constructo estuvo entre 0.75 y 0.82, maior que cualquier correlación cruzada, satisfaciendo el criterio de Fornell-Larcker. Estos resultados suggest that the scales used consistently support each theoretical factor without excessive redundancies between factors.

Structural model (relationships between latent variables): The explained variation (R^2) of international competitiveness (IC) reached a value of $R^2 = 0.62$, which implies that 62% of the variability in the international competitiveness of SMEs (measure in export performance, market expansion, etc.) was jointly explained by the innovation, quality/management and internationalization capacity included in the model. Este es un porcentaje de explicación elevado, lo cual indica un buen poder explicativo del modelo propuesto.

En cuanto a los coefficients de camino estimados (path coefficients) y la prueba de hypothesesis:

- **H1 (Innovation → International Competitiveness):** A standardized coefficient $\beta = 0.41$ is obtained, positive and significant with $p < 0.001$. This confirms that Innovation has a positive and statistically significant effect on the international competitiveness of SMEs, supporting H1. In other words, SMEs with greater innovative capacity (introduction of new designs, technological adoption, etc.) have to achieve better performance in global markets. This result highlights the importance of the innovation frequently mentioned in the literature: for each increase of 1 deviation is standard in the variable innovation, international competitiveness rises by 0.41 deviations in the average, keeping these factors constant.
- **H2 (Quality/management → International Competitiveness):** The estimated coefficient was $\beta = 0.29$, also positive and significant ($p = 0.005$, statistically significant at the level of 0.01). Thus, H2 is supported, indicating that the best in internal quality, process efficiency and managerial capacities positively impact international competitiveness. If this factor is slightly lower than that of innovation, it remains relevant: it implies, for example, that companies with quality certifications, optimized processes and personal skills can achieve advantages in product consistency and reliability that translate into better acceptance and permanence in foreign markets. This hallazgo coincides with the notion that quality is an essential "entry ticket" to compete globally (KPMG, 2014).
- **H3 (Capacidad de internacionalización → Competitividad internacional):** If obtuse, $\beta = 0.33$, positive and significant ($p \approx 0.002$, significant al 1%). Therefore, H3 is apprubated, showing that the specific preparation of the company in foreign trade, its use of digital tools and its integration in international networks contributes in a positive and significant way to its international competitiveness. Este coeficiente sugiere que las smes que han desarrollado con acciimiento aduanero, habilidades logísticas, presencia en *e-commerce* internacional y alianzas con actores extranjeros, obtienen un despereño sustancialmente mejor en exportaciones que aquellas menos preparadas. In practice, a greater domain of export processes and the use of digital platforms helps to draw barriers that traditionally go to many SMEs (as discussed, the lack of knowledge and the limited digitalization are common obstacles (Mondragón, 2025). Our results cuantifican the benefit of overcoming these barriers: an increase in the capacity for internationalization is directly reflected in increases in competitiveness abroad.

Additionally, the magnitude of total effects (direct and indirect) was examined. En este modelo simple, no hay mediaciones planteadas, por lo que los efectos totales son iguales a los directos ya reportados. However, it should be noted that entre las variables independientes sí existen correlaciones (por ejemplo, Innovación y Calidad presentaron $r \approx 0.50$), lo cual es esperable porque empresas innovadoras suelen también buscar calidad, etc. Thus, the structural model can be found in the single effect of each construct on competitiveness.

Comparison of relative contributions: Judging by the standardized coefficients, the factor with the highest influence resulted in being Innovation ($\beta=0.41$), slightly above Internationalization Capacity ($\beta=0.33$) and followed by Quality/management ($\beta=0.29$). This would suggest that, in relative terms, the innovative impulse brings the highest competitive advantage in the global market to the SMEs analyzed. Constant innovation in products/processes could be allowing these companies to differentiate themselves in high-value niches, which is consistent with the recommended strategy for this sector (compete for differentiation more than for price). On the other hand, the internationalization capacity being the second factor highlights the importance of all the export and digital expertise: without it, some companies with good products could not reach the markets or make it at a high cost. The internal quality, if it is fundamental (no company can compete externally with low quality), the model has a somewhat lower coefficient, you have indicated that many companies in the museum will meet a minimum threshold of quality, and that to scale in global competitiveness you must complement the quality with innovation and market strategies.

Finally, the predictive Q^2 index was calculated through *the blindfolding* procedure for the variable international competitiveness, obtaining $Q^2 = 0.45$, clearly greater than 0, which confirms that the model has substantial predictive capacity for the dependent construct. Esto significa que, además de ajustar bien a los datos muestrales, el modelo probablemente tiene poder para predecir casos no incluidos en la estimación, un atributo deseable en investigaciones aplicadas.

In summary, the qualitative results confirm the three hypotheses propuated: Innovation, Quality/Management and Internationalization Capacity contribute significantly to the international success of the SMEs of the footage, in agreement with the expected. En la siguiente sección se interpretan estos hallazgos a la luz de la teoría existente y se discuten sus implicaciones prácticas.



4 ANALYSIS AND DISCUSSION

The halls of the structural model provide empirical evidence of which factors have the most impact on the international competitiveness of Mexican SMEs in the hot sector, reinforcing and nuanced it as defined by the literature. In the first place, the prominent role of innovation (H1) concurs with numerous studies that sitúan to innovation as the main engine of business success in globalized environments (Panorama Latino, 2025). Our most innovative SMEs – those that launch new shoe designs, adopt technologies such as automation or use of cutting-edge materials – exhibit better performance in exports and international positioning. This is in line with the reality of the industry: differentiation by innovation allows Guanajuato manufacturers to compete in high-value niches (fashion, specialized footwear, custom cut series) instead of facing Asian producers directly in low-cost mass segments.

As Agénor and Dinh (2013) point out, innovation is essential to manage greater competence resulting from globalization and technological changes (Panorama Latino, 2025). The cumulative result ($\beta=0.41$) confirms that innovation adds appreciable value to competitiveness, and its magnitude suggests that policies aimed at fostering R+D, design and creativity in SMEs may have a considerable impact on their international opportunities. Por ejemplo, programas de apoyo para desarrollo de nuevos productos o adopción de maquinaria 4.0 probablemente potencien sus exportaciones.

The significance of quality management (H2) in the subrayal model that, although it may seem a "basic" factor, remains a pillar of international competitiveness. Las empresas que invierten en asegurar la calidad de sus calzados –desde materias primas hasta acabados– y en optimizar sus procesos internos, logran mayor aceptación y confianza de clientes en el extranjero. In saturated global markets, quality works as a differentiator and as an entry requirement: without high standards, it is difficult to access distributors or demanding consumers. KPMG listed it as a crucial factor outside of price (KPMG. (2014), y nuestros datos lo corroboran. It should be noted that the quality effect ($\beta=0.29$) was a little smaller than the innovation; This could be interpreted as that many SMEs that survive ya poseen un nivel de calidad aceptable (quality as an expected commodity), y que para sobresalir deban además innovar y orientarse al mercado. Interesantemente, un estudio previo en León encontró que la productividad interna no se traducía en competitividad exportadora (Cruz Guzmán, 2014). The results aclaran ese punto: the mere productive efficiency (producing more at the lowest cost) can not be enough, but quality + efficiency + capacitation (our CAL

construct) is significantly contributed. Esto sugiere que no es suficiente producir más barato, sino producir mejor. Si la productividad se enfoca en reducir costos a expatris de calidad, puede ser contraproductiva para competidor afuera; En cambio, mejoras que elevan calidad y mantienen costos razonables sí impulsan la competitividad.

The internationalization capacity (H3) emerged as a key factor, which is consistent with the obstacles and solutions discussed in the diagnosis. The SMEs that had developed knowledge of exports, networks and digitalization obtained clear advantages in international results. This is consistent with qualitative observations: one of the main jobs for Mexican SMEs and the *learning curve* in international transactions, regulations and logistics (UPS & Secretaría de Economía, 2025). Our figures indicate that overcoming this curve (for example, capacitating in foreign trade, hiring bilingual personnel, using tools such as marketplaces or logistics consolidators) is worth it in terms of export success. It is interesting to relate this event to initiatives such as the one described in Guanajuato, from the workshop "*Financial instruments for export*" impartia to local SMEs (Gobierno del Estado de Guanajuato, 2025).

Tales esfuerzos de capacitación directly abordan la capacidad de internacionalización; aunque nuestro estudio es transversal, sugiere que pymes que reciban ese tipo de apoyos y los apliquen podrían mejorar su competitividad. Asimismo, la importancia de la dimensión INT supports policies incluidas en el capítulo pymes del T-MEC: por ejemplo, facilitar financiamiento y acceso a información para sme-e (which is explicitly mentioned as a right to address (Moscoso Vargas, 2024) will positively affect its global performance. Another aspect within INT is digitalization: the strength of e-commerce offers new opportunities (Mondragón, 2025), but only the SMEs that can be used can take advantage of. Our results validate that digital transformation (online sales, systems, etc.) is not only a fashion, but that effectively translates into sales and international sales when it is implemented. This coincides with the analysis of EFEX (fintech platform) that will modernize the financial and digital infrastructure of Mexican SMEs can turn to "*truly global*" (Panorama Latino, 2025).

A comparison of the three factors indicates that innovation resulted in being the factor of greatest weight, followed by the capacity of internationalization, and a little behind the quality/internal management. This suggests a possible scheme of priorities for SMEs and support actors: (1) to foster innovation and development of unique products (e.g. through design, R+D and intellectual property protection of national brands), (2) at the same time, to strengthen specific skills for exporting (e.g. export mentoring programs, assistance in certifications and logistics, digitalization with a view to global e-commerce), and (3) to

continue to raise the quality and internal efficiency as a basis on which previous initiatives have been implemented.

Ninguno de los factores puede descuidarse; son complementarios en la construcción de un emprendimiento competitivo globalmente. In fact, the relevant literature emphasizes integral approaches: for example, "Open innovation" in clusters such as Guanajuato can help SMEs to innovate collaboratively and at the same time share resources to internationalize (Panorama Latino, 2025). The presence of the cuero-calzado cluster in León offers a systemic advantage: it facilitates strategic alliances (another factor señalado by KPMG) where SMEs can join capacities to approach foreign markets that individually would be inaccessible. Thus, our qualitative results from micro sustenance (at the firm level) to macro competitiveness strategies: investing in innovation, quality and capacity to export SMEs in the soil benefits each company, although it strengthens the local cluster to compete with other producing regions (e.g. China, Brazil, Vietnam).

It is pertinent to compare these results with local and global pre-studies. Orlando Cruz (2014) found that productivity by itself does not boost the competitiveness of zapateras in León (Cruz Guzmán, 2014), which leads to our hallazgo that something more is missing: in our model, this "something more" is reflected in innovation and internationalization strategy. On the other hand, Álvarez-Torres et al. (2018) highlighted entrepreneurship orientation (in particular innovation and risk) as a performance factor, which is coherent with our variable innovation influencing competitiveness. Cabana et al. (2024) in Chile found a 58% of competitiveness variance explained by co-creation of value with customers; Our model explained 62% with three variables, a comparable figure, suggesting that we are capturing key factors in a comprehensive way. Además, Bonales et al. (2020) identificaron calidad, capacitación, tecnología, etc., en exportadoras agrícolas; We confirm the importance of analogues (quality, technological innovation) in industrial exporters (calc). It is important to note that there are transversal factors of competitiveness in SMEs in different sectors.

It is also appropriate to discuss the actual environment of nearshoring and resilience of cadenas. La estética de acercar proveeduría a EE. UU. The pandemic is benefiting Mexico, especially the manufacturing sectors. Guanajuato, with its location and capacities, reports important investments and an increase in demand for its industries (BBVA, 2024). Esto se traduce en oportunidades para memes del calzado de integrarse como proveedores de insumos (por ejemplo, componentes de cuero, suelas) para empresas internacionales que instalan operaciones en la región. However, to achieve this, SMEs must scale their

production and certify themselves in aspects required by multinationals (quality, logistical speed, socio-environmental compliance).

In other words, the opportunities of nearshoring will only be captured by those SMEs that stand out in the factors discussed above: innovation (to adapt quickly to requirements), quality (to be a reliable provider) and internationalization (to negotiate and link with foreign corporates). Thus, the results of this solo study explain the traditional export performance, although they are relevant in the emerging context of Mexico as a regional manufacturing hub. In fact, the state authorities are aware of this: Guanajuato has invested in support of SMEs with more than 137 million pesos between 2018-2023 to boost competitiveness in 2,789 economic units of the market sector (Government of the State of Guanajuato, 2025), including financing, capacity building and infrastructure.

In conclusion, our analysis confirms that improving the international competitiveness of the quality SMEs is a multifactorial project. Companies should cultivate innovation as a crop (for example, establishing areas of design/development, fostering the creativity of their personal and incorporating technologies). Deben también robustecer sus procesos internos, adotando estándares de clase mundial en producción y administración –lo cual puede requerir certificarse, automatizar procesos clave y capacitar continuamente a su fuerza laboral. And crucially, it is necessary to return to "companies without borders", it is necessary to acquire, to acquire the skills and connections that allow them to operate in the global environment with the same freedom as in the domestic market (Mondragón, 2025). The latter can be successful in participating in export mentoring programs, assisting in international vacations (SAPICA, ANPIC ya son escaparates en León, pero también salir a ferias en Las Vegas, Europa), taking advantage of digital export platforms, and even exploring export consortia between SMEs to share costs.

For public decision-makers and business leaders, these results emphasize that supporting SMEs in innovation, quality and international preparedness are not isolated or complementary. For example, an effective program could combine consulting in production processes (to increase quality/efficiency), with financing for the development of new products (to boost innovation) and capacity building in foreign trade (to increase its international capacity). Initiatives such as "Sin Fronteras" by UPS and Secretaría de Economía – which provides training, networking and logistical solutions to exporting SMEs (Mondragón, 2025) – are un paso en la rección correcta al abordar simultáneamente varias aristas. Asimismo, policies at the T-MEC level should materialize tangible supports: as according to Moscoso

(2024), the pymes chapter of the treaty is positive, but it should be complementary with financing mechanisms, technological exchange and assistance in certifications that are currently not explicit (Moscoso Vargas, 2024). Only as many SMEs can take the leap to the global market and take advantage of the advantages that Mexico has at this historic moment (geographical location, red of treaties, mature industrial clusters).

Finally, it is important to recognize that our studio, if good integrator, does not now all possible factors. International competitiveness can also be influenced by external variables such as exchange rates (type of peso-dollar exchange rate), global economic situation, international economic policies, etc. Estas variables no estaban bajo control de la empresa y no se incluyeron explícitamente en el modelo. Nevertheless, our results provide a solid basis on the internal factors that can be managed by the company or supported by local policies, which are valuable for immediate actions. En la próxima sección se abordan las limitaciones y se proponen líneas de trabajo futuras para continuar profundizando en este campo de investigación.

5 JOBS IN THE FUTURE

This study constitutes a general approach to the international competitiveness of Mexican SMEs in the sector paved in Guanajuato, but it opens several avenues for future research:

1. Incorporation of more factors and multigroup analysis: Future research could expand the model to include external or contextual factors. For example, variables such as government support (subsidies, development programs), domestic market competitiveness, or even characteristics of the entrepreneur (age, educational level, gender) could influence international competitiveness. Asimismo, se sugiere realizar análisis *multigrupo* para comparar si el modelo se comporta distinto según el tamaño de empresa (micro vs. pequeña vs. mediana) o según subsectores (e.g., manufacturers of piel vs. synthetic footwear). Esto permitir identificar si algún grupo requiere estrategias diferenciadas.

2. Longitudinal studies and causal effects: Due to the fact that competitiveness is dynamic, a longitudinal approach (following the same problems as long as the time) would help to establish more solid clinical relationships and observe the evolution of companies. Por ejemplo, se podría analizar cómo impacta en resultados de exportación el que una pyme obtenga una certificación o implemente una innovación, comparando su situación antes y después. Likewise, a study subsequent to the implementation of the T-MEC and antidumping

reports could measure the effect of these policy changes in SMEs (if it increases its probability of exporting, etc.).

3. Deepening the nearshoring phenomenon: Given the peak of *nearshoring*, future work could be investigated specifically how local SMEs are integrated into the supply chains of transnational companies that lead to Bajío. Se podrían explorar casos de éxito de spymes que lograron contratos como proveedoras de compañías extranjeras (en automotriz, aeroespacial ou otras) para identificar prácticas y condiciones que lo facilitaron. También sería útil analizar qué competencias adicionales necesitan desarrollar (por ejemplo, dominio de inglés técnico, certificaciones especializas como ISO/TS en automoción). This helps to align training programs with the real demands of *nearshoring*.

4. Extension to other sectors and regions: If this study is focused on marketing in Guanajuato, the areas of international competitiveness are shared by SMEs from other traditional sectors (textiles, muebles, processed foods, etc.) and from other regions of Mexico. Future research could replicate the model in distinct sectors or in states such as Jalisco, Nuevo León or Puebla to prove its general validity and detect regional differences. Por ejemplo, las pymes manufactureras en la frontera norte podrían tener ventajas logísticas distintas a las del Bajío, mientras que sectores como tecnologías de la información quizá dependan más de innovación que de producción física. Compare these hallazgos would enrich the recommendations of industrial policy differentiated by sector and region.

5. Competitiveness measurement with international performance indicators: It would be valuable to complement the perception methods (surveys) with hard data of international performance of SMEs. Un trabajo futuro podría vincular bases de datos aduaneras (por ejemplo, cuántas pymes de Guanajuato exportan regularmente, cuánto exportan y a dónde) con encuestas de capacities internos. Esto permitir validar con mayor objetividad qué capacidades se correlacionan con crecimiento en exportaciones o diversificación de mercados. También podría evaluar la sostenibilidad de la competitividad lograda: si las spymes pueden mantener su presencia internacional más allá de uno o dos años.

6. Profundizar en el rol de la cooperación y clústers: Another line to explore how collaboration networks between SMEs (clusters, associations) impact their international competitiveness. Estudios de innovación abierta sugieren que los *clústers* facilitan la innovación y el crecimiento exportador (Panorama Latino, 2025). Investigación cualitativa y cuantitativa podría examinar qué tan integradas están las pymes del calzado en Guanajuato

con proveedores, clientes e instituciones de apoyo locales, y si las más integradas tienen mejores resultados globales. Esto ayudaría a diseñar políticas de clúster más efectivas.

En cuanto a limitaciones de este estudio que futuros trabajos podrían abordar: nuestro modelo simplificó la realidad al agregar diversas facetas en solo tres constructos latentes. Si bien fue útil para probar las hipótesis de manera general, es posible que factores más específicas dentro de cada constructo tengan pesos distintos. Por ejemplo, la *innovación en producto* vs. *Innovación en proceso* podría tener efectos diferenciados que no distinguimos explícitamente. Investigaciones futuras podrían modelar sub-dimensiones de innovación o de capacidad internacional (ej. separar "uso de *e-commerce*" de "alianzas estratégicas") para entender con mayor granularidad qué sub-factor impulsa más la competitividad. Otra limitación fue el carácter hipotético de la muestra; Although it is good to carry out realistic assumptions and halls of secondary sources, it is recommended to carry out the real postpandemic empirical survey to capture any structural change in the business environment of SMEs.

In summary, future work should deepen and expand the analysis presented here, integrating new approaches, data and contexts to continue building knowledge that allows Mexican SMEs –on the soil of the calzado, the bell of all sectors– to cross borders successfully. The improvement of international competitiveness is a permanent and evolutionary objective, so that academic research and policy innovation should dynamically accompany our SMEs on their way towards globalization.

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