



Global skills and knowledge as drivers of small businesses in Los Mochis, Sinaloa

Habilidades y conocimientos globales como impulsores de las pequeñas empresas en Los Mochis, Sinaloa

Rosa Delia Aguilar Carvajal¹  , Salvador Acosta Haro¹  

ABSTRACT

Introduction: This study critically examines the management of organizational human capital, focusing on the cognitive constructs and practical skills that shape distinctive capabilities in owner-managers of food manufacturing SMEs in Los Mochis, Sinaloa.

Methodology: The investigation is based on a positivist paradigm using a quantitative design, operationalizing Hunter's global competency model through its matrix instrument of 26 indicators stratified into four interrelated domains: cognitive capital, operational skills, attitudinal dispositions, and experiential praxis. This contextually adapted methodological framework was implemented in a stratified sample of 37 local business units.

Results: The results showed that the global competencies that prevail among the respondents are the ability to communicate effectively across cultural and linguistic boundaries, as well as the ability to work in environments other than their country of origin. In addition, the ability to be aware of economic, political, and social change taking place in the world was found, as well as knowledge of global organizations and commercial activities carried out by their country with the rest of the world.

Conclusions: These two dimensions, skills and knowledge, organized the strengths needed to become globally competent.

Keywords: Business management, international economic relations, knowledge Management, skills development.

JEL Classification: D85, F25, L26.

RESUMEN

Introducción: Este estudio examina críticamente la administración del capital humano organizacional, enfocándose en los constructos cognitivos y habilidades prácticas que configuran capacidades distintivas en propietarios-gestores de PYMES manufactureras alimentarias de Los Mochis, Sinaloa.

Metodología: La indagación se sustenta en un paradigma positivista mediante diseño cuantitativo, operacionalizando el modelo de competencias globales de Hunter a través de su instrumento matricial de 26 indicadores estratificados en cuatro dominios interrelacionados: capital cognitivo, destrezas operativas, disposiciones actitudinales y praxis experiencial. Este marco metodológico, adaptado contextualmente, fue implementado en una muestra estratificada de 37 unidades empresariales locales.

Resultados: Los resultados arrojaron que las competencias globales que prevalecen en los encuestados son la capacidad para comunicarse eficazmente a través de fronteras culturales y lingüísticas, así como la capacidad para trabajar en entornos diferentes al de su país de origen. Además, se encontró la capacidad para estar consciente del cambio económico, político y social que acontece en el mundo, así como conocer las organizaciones globales y actividades comerciales que realiza su país con el resto.

Conclusiones: Estas dos dimensiones, habilidades y conocimientos, organizaron las fortalezas para lograr ser globalmente competentes.

Palabras clave: Administración de empresas, desarrollo de competencias, gestión del conocimiento, relaciones económicas internacionales.

Clasificación JEL: D85, F25, L26.

Received: 11-11-2025

Revised: 21-02-2025

Accepted: 02-05-2025

Published: 31-07-2025

Editor: Alfredo Javier Pérez Gamboa 

¹Universidad Autónoma de Sinaloa. Sinaloa, México.



INTRODUCTION

In recent years, Mexico has increased its presence in international markets through the import and export of goods. As a result, entrepreneurs urgently need more profound knowledge and skills about the foreign markets with which they interact, paying special attention to the problems that arise from these commercial transactions. In a context where we can all benefit from greater openness and connectivity, and where growing inequalities and radicalism are significant risks, citizens need skills to be competitive and prepared for a new world of work.

More importantly, they must develop the skills to address global issues such as the transition to a green and digital economy, and understand global and intercultural issues that enable them to identify the impact on employability and well-being at work. Likewise, technology is advancing, but education policies are not evolving at the same pace (Organisation for Economic Co-operation and Development [OECD], 2023).

In this regard, Jiaxin et al. (2024) mention that global competencies are essential to be incorporated into higher education programs, with the aim not only of being taught in the classroom, but also of being incorporated into practical activities by students and teachers. This is because both educational agents often lack in-depth knowledge of global issues and practical skills in complex contexts. According to the authors, these competencies take the form of intercultural dialogic skills such as multilingualism, cultural literacy, and empathetic adaptability in diverse sociopolitical environments. Therefore, competencies constitute a holistic construct where cognitive capital, operational skills, ethical dispositions, and situational learning converge to optimize intercultural co-construction.

The aim is for participants in competency development programs to promote a receptive attitude and an active attempt to understand cultural norms and expectations, which facilitates interaction, communication, and efficient work in international business environments (Hunter, 2004). Having global knowledge and skills is essential for companies to perform effectively in diverse environments. Understanding cultural nuances facilitates effective communication with international customers and partners, strengthening relationships and cooperation. This knowledge enables informed strategic decisions to be made, taking into account factors such as supply chains, market dynamics, and international regulations.

In addition, exposure to different cultures drives innovation by integrating diverse perspectives into the development of products and services that meet the demands of a global customer base. Global management skills enable the identification of opportunities and threats in different markets, positioning companies ahead of their competitors. They are also key to attracting and retaining diverse talent, fostering inclusive and satisfying work environments. Organizations with strong global management can establish strategic relationships with international actors, which are essential for knowledge exchange and business expansion.

Together, these capabilities strengthen communication, decision-making, and adaptability, which are crucial for business success in a competitive and interconnected environment (Steers et al., 2023). This represents an excellent opportunity for small businesses in the state of Sinaloa, which includes the municipality of Ahome, whose municipal capital is Los Mochis. This city has always been characterized as one of the main exporting areas in the northern region of the country. According to records from the Ministry of Economy (2025), in March 2025, the state of Sinaloa recorded international sales totaling US\$497 million, while international purchases amounted to US\$250 million.

The trade surplus of US\$208 million recorded is evidence of the region's productive and commercial strength, making it a key indicator of its competitive integration into global value chains. The export composition is ranked as follows: livestock products, phyto-genetic products, food manufacturing, and chemicals, revealing patterns of sectoral specialization. It should be noted that MSMEs make up 99.8% of the Mexican business fabric, functioning as the backbone of economic development by contributing 35% of the national GDP and operating as the primary driver of endogenous growth.

Focusing on small businesses, which are the focus of this research and defined as having 11 to 50 employees, they represent 4% of the MSME universe with 190 000 establishments. Significantly, 10% of these units are engaged in manufacturing activities (Ministry of Economy, 2024). According to the National Statistical Directory of Economic Units (DENUE), Los Mochis has 1754 small businesses distributed across the primary, secondary, and tertiary sectors, demonstrating productive diversification (National Institute of Statistics, Geography, and Informatics [INEGI], 2025).

The manufacturing subsector, the main focus of the study, comprises 88 local companies. Within this segment, those specifically dedicated to the food industry total 37 units, representing 42,04% of total manufacturing

(INEGI, 2024). This sectoral concentration suggests the formation of an agro-industrial cluster with comparative institutional advantages.

The research aims to examine the strategic management of organizational human capital, focusing on the knowledge and skills that function as core competencies in the owner-managers of food SMEs in Mochitenses. This delimitation is justified by the specific weight of the subsector (42,04% of the local manufacturing fabric according to INEGI, 2025), making it a privileged observatory for analysis. The ultimate purpose is to determine how these cognitive and competency assets operate as facilitators of global competencies, allowing local advantages to be articulated with transnational market demands through the synergistic integration of technical knowledge, adaptive skills, and intercultural literacy.

This raises the following research question: With the knowledge and skills possessed by managers and/or owners of small businesses in Los Mochis, Sinaloa, are they able to perform competently on a global level? The hypothesis proposed in this research is: The knowledge and skills of the owners and/or managers of small businesses in the food manufacturing industry in Los Mochis serve as a driving force for the development of global competencies.

It is important to note that this study is based on a preliminary approach to the phenomenon under study, published in a book chapter in 2024 (Acosta Haro et al., 2024). In the previous exercise, a comprehensive model was developed to analyze the five competencies suggested by Hunter (2004). However, the preliminary results led to the selection of the two dimensions considered most relevant according to the statistical and descriptive analysis, namely the skills and knowledge of managers of small food manufacturing companies in the city of Los Mochis.

The document consists of four sections. The first section presents a construct of the main concepts, such as global competencies, knowledge, and skills. The second section describes the methodology used in this work, which is based on a positivist paradigm with a quantitative approach and a descriptive research scope. This section details the application of descriptive statistics, Cronbach's alpha to test reliability, and normality tests to measure autocorrelation with the variables used. The fourth section includes the results and conclusions.

THEORETICAL FRAMEWORK

Global competencies

In 2004, William D. Hunter developed a study based on the DELPHI technique, bringing together 17 experts with the aim of defining the concept of "global competence." This technique focuses on constructing future scenarios based on the evolution and interaction of various factors. The experts concluded that being globally competent involves having an open mind, understanding other cultures, and applying acquired knowledge to interact effectively outside one's environment. This definition not only highlights cultural understanding but also the need for tangible results that can be measured through specific knowledge, skills, attitudes, and experiences.

To delve deeper, Hunter surveyed 42 human resources managers from transnational companies and 141 international university educators, seeking to identify differences in perceptions of what constitutes global competence. Based on the analysis, he developed a "Global Competence Checklist," which summarizes the key elements for achieving it. His findings challenge traditional approaches to university certification, which focus on short exchanges and learning a second language. He also questioned the relevance of a university degree or computer skills as essential components of global competence, finding them to be of little significance in the results (Lóor-Carvajal et al., 2020).

Mansilla and Wilson (2020) define global competence as a lifelong process that is cultivated within the framework of human capacity and willingness to understand issues in a global and cultural context, with the aim of collective well-being and sustainable development, enabling individuals to compete in a global environment. A globally competent person has had cultural and academic experiences abroad, must have cultural sensitivity, good interpersonal skills, and be familiar with the international business environment; this provides all the tools necessary to succeed in the present and the future.

Andrews (2021), in analyzing the OECD's term "global competence," echoes the observations of Sälzer and Roczen (2018) and indicates that the concept of global competence lacks conceptual clarity and has a variety of definitions, making it ambiguous. He concludes that this approach to global competence is not sufficiently inclusive, identifying it as "Anglo-Saxon and Western" and favoring people with greater cultural and linguistic abilities, which can lead to inequalities. For this reason, a unanimous definition of the term global competence has not yet been achieved in the field.

The construction of scientific theory for the development of global competence is relatively new; moreover, global issues must be considered dynamic scenarios for globally competent attitudes, mindsets, and behaviors that are subject to change. There is, however, a consensus on the assumption that global competence comprises the three dimensions of knowledge, skills, and attitudes, which are distinguished from the construct:

1. Knowledge: understanding of global issues, as well as intercultural knowledge and understanding.
2. Skills: especially analytical and critical thinking.
3. Attitudes: openness, global mindset, responsibility.

For this analysis, we will focus on the dimensions of knowledge and skills, which are explored in greater depth below.

Knowledge

García et al. (2021) conceptualize knowledge as an *intangible asset* embedded in the human, systemic, and relational dimensions of the organization, structured in three forms of intellectual capital:

- Human capital: endogenous knowledge (tacit/explicit) that emerges from individual practice, including cognitive matrices, procedural skills, experiential capital, and axiological codes.
- Structural capital: organizational architecture that institutionalizes knowledge through corporate cultures, regulatory protocols, information systems, and codified intellectual assets.
- Relational capital: collective intelligence generated at interfaces with external stakeholders, functioning as a connective tissue for the co-creation of value.

This theoretical framework takes on critical relevance in SMEs, where human capital operates as a *substrate for sustainability* by enabling operational optimization and the fulfillment of multi-temporal strategic cycles (Acosta Haro et al., 2022). Good management of these intangible resources, especially global competencies, is key to an organization's resilience. This is because it converts specific knowledge into skills to comply with regulations and adapt to different contexts.

The research explores how *cognitive exchange ecosystems* enhance successful innovations, focusing on the tacit-explicit knowledge dialectic. While the latter has been widely covered in academia, tacit knowledge, rooted in bodily practices, contextual intuitions, and implicit knowledge, remains an understudied epistemological territory. Its catalytic role in innovative processes is examined through three vectors: genesis, intra-organizational circulation, and transferability.

The analysis concludes that *sustainable competitive advantage* emerges when companies recognize the epistemic asymmetry between the two types of knowledge: explicit knowledge, being in the public domain, offers limited utility; while tacit knowledge, being inalienable, contextual, and difficult to imitate, functions as a distinctive core when valued through liberating management practices that democratize its critical appropriation.

Tacit knowledge can be a source of a vast range of opportunities and potential that constitute discovery and creativity. Today, staff mobility within or outside companies is a significant issue for organizations, especially if workers who leave their jobs take intellectual capital with them, making it necessary to hire and train new employees. However, these companies do not develop or use mechanisms to safeguard and preserve organizational work knowledge and are in a constant process of recruiting and training newcomers.

Job mobility currently presents a problem for companies that do not manage knowledge, mainly affecting the competence or experience that people have about organizational work and their work. It is therefore necessary to generate knowledge transfer mechanisms to ensure that the knowledge of workers who leave or change organizations is retained (Tauro, 2021). About the knowledge that constitutes global competence, Hunter (2004) established through a taxonomic instrument that this construct integrates: mastery of cultural codes and transnational expectations, reflective awareness of one's own culture, critical understanding of the globalizing phenomenon, analysis of the role of transnational entities, and knowledge of historical phenomena and global civilizational manifestations. If this knowledge is mastered by company managers, then they can be said to be globally competent, which will allow them to expand their business vision in the short, medium, and long term.

Skills

According to Mouboua et al. (2024), organizations need to establish ongoing training programs focused on

cultural skills, intercultural communication, and global leadership competencies, thus ensuring the retention of flexible and efficient employees in diverse cultural contexts. In this context, Bourn (2021) argues that contemporary companies operate in a globalized context. Global competencies enable workers to understand and adapt to different markets, cultures, and consumer behaviors, which is essential for the success of the company. This adaptability allows companies to tailor their products and services to meet the demands of different regions.

Given that teams are often spread across different countries, global competencies promote effective communication and cooperation among workers from diverse cultural backgrounds. This enhances collaborative work and innovation, as a variety of perspectives favors problem-solving and creativity. Ahmad et al. (2024) defined business skills as the ability to acquire conventional management skills through effort and adaptively carry out complex activities in the organization.

Furthermore, some previous studies have affirmed the significant relationship between organizational resources and strategic planning, but the appropriate relationship between entrepreneurial skills and strategic planning is still unclear. According to Hunter (2004), the essential skills for global competence in business managers include: linguistic proficiency in English or other strategic languages, cross-cultural competence for international residence, and the ability to collaborate interculturally on multinational projects. The acquisition of these skills broadens the corporate strategic perspective and facilitates the sustainable internationalization of the business.

Moreover, the required knowledge includes: cognitive mastery of one's own and other cultural norms, critical understanding of the globalization phenomenon, awareness of global historical dynamics, and current geopolitical issues. Operational skills include: effective participation in multicultural academic or professional projects, evaluation of intercultural performance in social and business settings, adaptability to living outside one's native cultural context, identification of cultural differences for global competitiveness, cross-cultural cooperation, and operational effectiveness in global social and work contexts.

METHODOLOGY

Type of study

The research is epistemologically based on a positivist paradigm, adopting a quantitative approach of a descriptive nature. This methodological choice is justified by its ability to collect and examine statistical evidence on variables, dimensions, or structural components of the phenomenon under study (Hernández-Sampieri & Mendoza, 2020). The census application of the instrument was carried out on the entire universe of companies in the food manufacturing sector, identified through the National Statistical Directory of Economic Units (DENUE) of the National Institute of Statistics and Geography (INEGI).

Techniques and instruments for data collection

To analyze global competencies, an adaptation of the measurement instrument developed by Hunter was used, consisting of 26 items and four dimensions: knowledge, skills, attitudes, and experiences. During the adaptation of the instrument, the authors added eight items of demographic and general data for the 37 managers and/or owners of the entities studied. A five-point Likert scale was used to measure global competencies; the responses to each item were structured as follows: "None" with a value of 1, "Poor" with a value of 2, "Intermediate" with a value of 3, 'Good' with a value of 4, and "Excellent" with a value of 5.

Reliability of the instrument

The internal consistency of the instrument was determined using Cronbach's alpha coefficient, yielding values of 0,774 for the "knowledge" dimension and 0,873 for "skills." According to Forero's criteria (2023), these indices indicate a very good level of reliability in the measurement of constructs.

Analysis techniques

The data were subjected to descriptive statistics and normality tests to rank critical dimensions as areas of managerial opportunity. According to Flores Tapia & Flores Cevallos (2021), this processing provides quantitative inputs for designing effective organizational systems that align processes with strategic objectives.

Although based on surveys, data collection incorporated subjective perspectives from managers and owners

using an instrument adapted from Hunter. This 26-item questionnaire assessed comprehensive competencies (knowledge, skills, attitudes, and experiences) in food manufacturing units in Los Mochis, Sinaloa.

RESULTS

Table 1 presents several descriptive statistics for the dimensions analyzed on global competencies. In terms of the mean, the knowledge and skills variables have similar results, with averages of 3,53 and 3,36, respectively. Regarding the median, values of 3,33 and 3,38 were obtained, and the mode was 3 and 4, respectively. These results show a “good” rating for the global competencies under analysis.

Table 1.
Descriptive statistics

Statistical	Knowledge	Skills
Mean	3,53	3,36
Median	3,33	3,38
Mode	3,00	4,00
Variance	0,91	1,28
Standard deviation	0,95	1,13
Standard deviation	0,20	-0,57
Kurtosis	-0,38	-0,45

Source: own elaboration based on the statistical program SPSS v19

The “knowledge” variable shows the least dispersion in managers’ responses, demonstrating homogeneity in their assessments. In contrast, the “skills” variable shows the most significant variability, reflected in a variance of 1,28 and a standard deviation of 1,13, indicating significantly heterogeneous responses. Regarding the distribution, positive kurtosis in knowledge (leptokurtic distribution) reveals a strong concentration of data close to the mean with few outliers. On the other hand, the skills variable has a platykurtic distribution, which means that there are more outliers and the data are not as concentrated near the mean (Barrantes-Aguilar, 2019).

Normality test

Determining the appropriate statistical test requires assessing the normality of the data. As detailed in table 2, this process included the Shapiro-Wilk test (recommended for samples <50 observations) and the Kolmogorov-Smirnov test (appropriate for large samples), following the criteria of Flores Tapia & Flores Cevallos (2021). Given that the study worked with 37 units of analysis, the Shapiro-Wilk test was applied for the dimensions of “skills” and “knowledge.”

Table 2.
Data normality

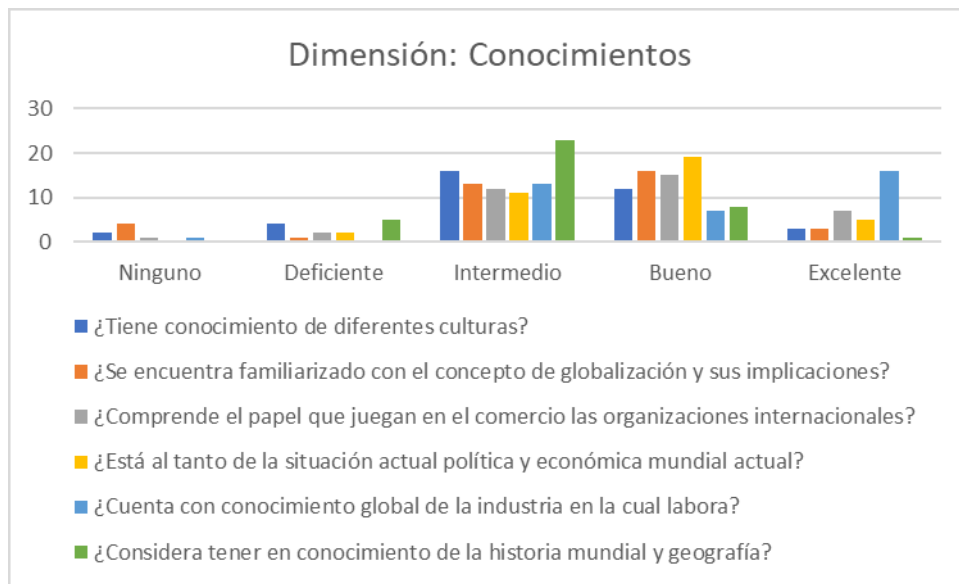
Dimensión	Kolmogorov-Smirnov (Valor p)	Shapiro-Wilk (Valor p)
Conocimiento	0,088	0,670
Habilidades	0,095	0,136

Source: own elaboration based on the statistical program SPSS v19

These results indicate that the normality assumption is met. Based on the above results and statistical analysis of the variables “skills” and “knowledge,” which are related to global competencies, it was found that these are the variables that present the most outstanding data due to their importance in the units studied, and they are described in detail below.

The “knowledge” dimension operates conceptually as the understanding of: cultural norms and global expectations, cultural self-awareness, fundamentals of globalization, roles of supranational entities, and world cultural events. In Hunter’s model, this construct is evaluated using six items applied to the 37 managers and/or owners of the companies studied (figure 1).

Figure 1.
Analysis of the Knowledge dimension



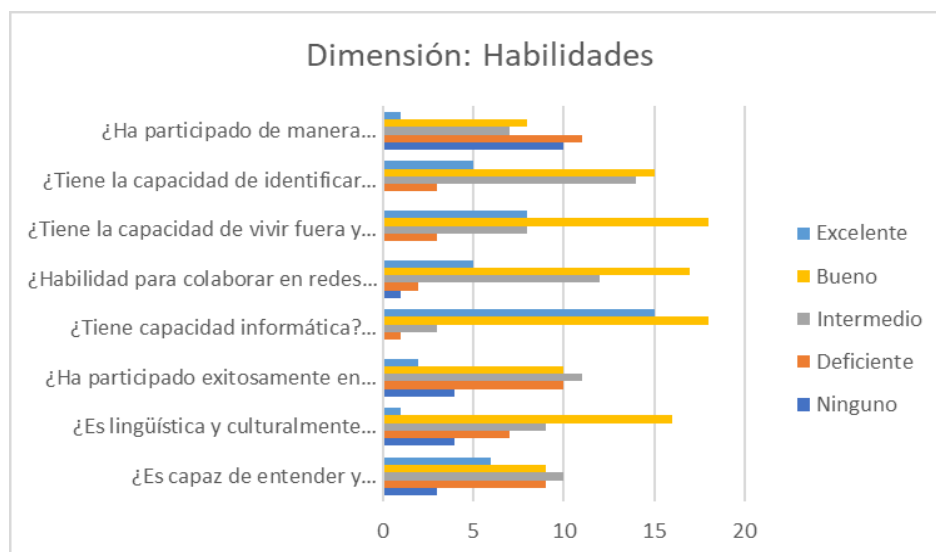
Source: own elaboration based on the results of the instrument used

Note: the figure is in its original language

Regarding the level of knowledge shown in figure 1, the “intermediate” level prevails among the most common responses, with 23 responses in the item on knowledge of history and politics. This finding is followed by awareness of the global political and economic situation, with 19 responses at the “good” level. The item on global knowledge of the industry in which they work also shows that 16 of the respondents considered it “excellent,” and knowledge of different cultures, with 16 responses at the “intermediate” level. These results show that they are concerned about understanding the social and cultural processes that are shaping our era, as well as being aware of what is happening globally in the political, economic, and cultural spheres of the industries in which they work.

The “skills” dimension encompasses distinctive skills of managers with global competence, including proficiency in English and an additional language, linguistic-cultural competence in foreign contexts, effective participation in intercultural projects, computer skills, intercultural performance evaluation, cross-cultural adaptation, and collaboration across cultures. The results of the items corresponding to this dimension, which consists of eight items, are shown below (figure 2).

Figure 2.
Analysis of the Skills Dimension



Source: own elaboration based on the results of the instrument used

Note: the figure is in its original language

Regarding the skill level of owners and/or managers of small businesses in Los Mochis, Sinaloa, it can be observed that the “good” level prevails in 5 of the 8 items. This result highlights their linguistic and cultural ability to speak at least one language other than their own, with 16 responses; computer skills, with 18 responses; ability to work in global professional networks, with 17 responses; ability to live abroad and adapt to other cultures, with 18 responses; and ability to identify cultural differences in order to compete globally, with 15 responses.

It is important to mention that in the item “Have you participated effectively in social and business environments in other parts of the world?”, ten of the respondents answered “none.” This finding may represent an area of opportunity that small business owners in Los Mochis, Sinaloa, should address. Contrary to this result, in the item on computer skills, 15 responses were rated “excellent.”

Among the items represented by the knowledge dimension, authors concluded that the managers and/or owners of the small businesses studied rated their global knowledge of the industry in which they work as “excellent” (43%), followed by the role that international organizations play in trade (19%). In terms of the “good” level, the majority are aware of the current global political and economic situation, represented by 51%, and at the “intermediate” level, knowledge of world history and geography, with 52% of those surveyed.

The above results show the interest and concern that the managers and/or owners of the small businesses surveyed have in these elements, which leads to the development of global knowledge competence, which is a strength of these companies. It should be noted that among the items with the greatest dispersion and lowest representation was the ability to understand and communicate in English, as only 10 of the respondents, representing 27%, answered that they had an “intermediate” level of proficiency.

Similarly, when asked if they had participated effectively in social and business environments in other parts of the world, 10 of them answered “none,” meaning that 27% of the sample had no experience in this type of event that leads to the acquisition of a skill. This need may be the main challenge or area of opportunity facing the group of entrepreneurs surveyed.

DISCUSSION

The objective of this study was to investigate human capital management within companies, with a special focus on knowledge and skills, which are identified as strengths among owners and/or managers of small businesses in the food manufacturing industry in Los Mochis, Sinaloa. These results are consistent with previous research by various authors who have conducted in-depth analyses of global competencies in different sectors. They start from the business world, which is revisited with particular interest, and extend to those developed in educational institutions with the aim of providing students with tools to improve their performance as future professionals.

The existing literature includes the work of Markasović et al. (2024), who, after reviewing recent research and publications on global leadership and the competencies of global leaders over the last decade, used bibliometric analysis to identify trends, key competencies, and propose future directions for research. The research focused on academic articles and studies published between 2018 and 2023 related to the competencies required of global leaders in economic and business contexts. Among the main findings, key competencies that distinguish the global leaders under study were identified, such as global mindset, emotional intelligence, high ethical standards, fairness, and the ability to empower and care for the team.

The competencies described have cross-cutting applicability in business and education sectors, optimizing the performance of managers and organizations in multicultural ecosystems. This premise is in line with the findings of the present study, where skills and attitudes show significant correlations, the latter being the dimension with the highest relative development in Mochitenses food SME owner-managers. Conversely, the experiential dimension shows the lowest quantitative development in the analyzed corpus, evidencing an epistemic discrepancy with the study by Markasović et al. (2024), where this variable lacks explicit referencing.

To visualize connections between key terms in the summaries of articles reviewed for this discussion, we selected the work of Yuwono and Ellitan (2024), who analyzed the role of global competencies in Indonesia in addressing the challenges and opportunities of international business in a context of global change. Their research seeks to highlight how these competencies contribute to business success in a dynamic and complex environment. To develop this, a comprehensive analysis was carried out on studies of multinational companies and professionals in the business field in the context of international business, as well as graduates seeking to enter the global market.

The main findings were that skills such as cultural sensitivity, adaptability, and cross-cultural communication are

essential to overcome challenges and seize opportunities; on the other hand, ethics and social responsibility are key to ensuring sustainability and long-term success. The importance of identifying and mitigating risks in the changing global environment to maintain business continuity is highlighted, and finally, higher education plays a key role in preparing professionals with relevant global competencies.

In relation to the present study, some similarities can be seen, such as the importance of intercultural skills, such as cross-cultural/intercultural communication as an essential skill; they emphasize adaptability to the global environment as key to professional success. Both recognize the need to understand the economic, social, and political changes in the global context and, finally, agree that these skills enable opportunities to be seized and challenges to be faced in an international environment. On the other hand, there are discrepancies in terms such as ethics and social responsibility as fundamental to sustainability, as this component is not mentioned directly in our study, nor is the identification and mitigation of risks in global contexts.

Christy and Lyau (2022) conducted research in Taiwan, specifically at the National Yunlin University of Science and Technology, where they sought to identify the future competencies needed by business education students in the context of the Fourth Industrial Revolution (Industry 4.0), in order to prepare graduates for changes in the labor market and the demands of society. A literature review was conducted, and the main findings agree that the most important global competencies for future professionals are: data analysis, computer literacy and digital skills, critical thinking, analytical skills, problem solving, creativity, and research skills. Specifically, communication, leadership, adaptability, and continuous learning skills are shown to be the most consistent with the findings of this research.

In the same context, Butum et al. (2022) analyzed students' perceptions of a university's internationalization activities and how they contribute to the development of global competencies, comparing two moments: before and during the COVID-19 pandemic. Two quantitative studies were conducted. The first, in 2019, included 148 students in their final year of a bachelor's degree at a business school in Bucharest. The second, in 2022, replicated the study with 179 students under the same conditions. The results showed changing perceptions, with students perceiving differences in how internationalization activities contributed to the development of global competencies before and during the pandemic.

The main findings highlight that skills such as cultural sensitivity, adaptability, and intercultural communication are essential for facing challenges and seizing opportunities in global environments. In addition, ethics and social responsibility are key to business sustainability. The importance of managing risks in a dynamic international context is also emphasized, and the fundamental role of higher education in training professionals with global competencies is recognized. In relation to the present study, both research projects agree that intercultural communication, sensitivity to other cultures, and adaptability are fundamental skills for functioning effectively in global environments.

They also recognize that training in global competencies is essential for professionals to face the challenges of the international arena, highlighting the importance of understanding and responding strategically to constant changes in the global environment. In contrast, the research by Butum et al. (2022) places special emphasis on concepts such as ethics, social responsibility, and risk management, aspects that were not considered in our research, which could be relevant for future research.

CONCLUSIONS

The results presented based on the studies analyzed are oriented toward concluding that global competencies are a successful way to enter international markets. Companies that, through their managers and/or owners, possess these competencies report significant support when facing this internationalization process. These skills not only broaden the employment horizons and market positioning of these companies but also promote innovative practices, contributing to their participation in a much more competitive market and to a long-term vision of business development, growth, and consolidation.

The knowledge and skills acquired and developed by the owners and/or managers of small businesses are vitally important for achieving global competencies in the markets in which they operate. Therefore, this research highlights the level of self-recognition that these actors have in terms of the level they possess, with an emphasis on small businesses in the food manufacturing industry, with results from the instrument applied to 37 managers of economic units registered in this sector in Los Mochis, Sinaloa.

By subjecting the data to statistical analysis and focusing this research on the results obtained in terms of knowledge and skills, due to their greater relevance to the authors of this research, it was found that these dimensions represent a strength for small companies in the food manufacturing industry in Los Mochis, Sinaloa, as they have a positive impact on the acquisition of global competencies.

In this sense, the skills that, according to Hunter, are necessary to achieve global competencies were analyzed, highlighting in 5 of the eight items the level of “good” recognized by the sample population, which recognizes that 43% of managers and/or owners of small businesses have the linguistic and cultural ability to know at least one language and culture other than their own, 49% of them have computer skills, 46% demonstrate the ability to collaborate in global professional networks, 49% have the ability to live abroad, and in the item referring to the ability to identify cultural differences in order to compete globally, 40% considered themselves to be at the aforementioned level. This finding means that the above skills acquired by entrepreneurs are a strength for their organization.

Authors empirically corroborated the hypothesis as the knowledge and skills of managers in Mochitense food SMEs are catalysts for global competencies. This validation emerges from the instrumental reliability analysis, where both dimensions registered “optimal” levels in the statistical evaluation of global competence. Quantitatively, the knowledge and skills variables show parallelism in their arithmetic means. Concerning measures of central tendency, skills and attitudes show homogeneity in median and mode, while knowledge shows modal discrepancy with a value of 3.

It is concluded that global competencies are the ability to communicate effectively across cultural and linguistic boundaries, to have the knowledge that allows one to be aware of global economic, political, and social change, as well as the ability to work in environments other than one’s own, and to know global organizations and commercial activities. Skills in general refer to having a global perspective, local responsiveness, transition and adaptation, and intercultural interaction, which ensure the long-term success of the organization. Therefore, knowledge and skills are fundamental pillars of global competence.

REFERENCES

- Acosta Haro, E., Aguilar Carvajal, R. D., & Alvérez Díaz, M. D. R. (2024). Competencias globales de las pequeñas y medianas empresas de la industria manufacturera de alimentos en Los Mochis, Sinaloa. En *Estudios económicos y sociales. Tomo I* (pp. 13-38). Astra Ediciones. <https://doi.org/10.61728/AE24002332>
- Acosta Haro, E., Palacios Valenzuela, C. A., Aguilar Carvajal, R. D., Soto Medina, N., & Cortez Parra, Y. D. (2022). Capital humano y la permanencia empresarial en las PyMEs: Una revisión de literatura. *INCEPTUM: Revista de Investigación en Ciencias de la Administración*, 17(33). <https://doi.org/10.33110/inceptum.v17i33.423>
- Ahmad, I., Ahmad, S. B., & Alam, B. (2024). Skills and Strategic Planning: Unveiling the Nexus in SMEs - A Case Study. *Journal of Intercultural Communication*, 24(1), 43-62. <https://doi.org/10.36923/jicc.v24i1.94>
- Andrews, T. (2021). Bourdieu’s Theory of Practice and the OECD PISA Global Competence Framework. *Journal of Research in International Education*, 20(2), 154-170. <https://doi.org/10.1177/14752409211032525>
- Barrantes-Aguilar, L. (2019). Diferencias en la estimación del coeficiente de curtosis en diferentes softwares estadísticos. *Revista E-Agronegocios*, 5(2). <https://doi.org/10.18845/rea.v5i2.4456>
- Bourn, D. (2021). Conversations on Global Citizenship Education. En *Global Skills and Global Citizenship Education* (1.^a ed., pp. 75-88). Routledge. <https://doi.org/10.4324/9780429346897>
- Butum, L. C., Nicolescu, L., & Stan, S. O. (2022). Developing Global Competences via University Internationalization Activities—A Comparative Analysis of Business Students’ Opinions before and during the COVID-19 Pandemic Crisis. *Sustainability*, 14(21), 14581. <https://doi.org/10.3390/su142114581>
- Christy, N. N. A., & Lyau, N.-M. (2022). Identification of Future Competencies Required for Business Education Students. *The 5th International Conference on Vocational Education Applied Science and Technology 2022*, 10. <https://doi.org/10.3390/proceedings2022083010>

- Flores Tapia, C. E., & Flores Cevallos, K. L. (2021). Pruebas para comprobar la normalidad de datos en procesos productivos: Anderson-darling, ryan-joiner, shapiro-wilk y kolmogórov-smirnov. *Societas*, 23(2), 83-106.
- Forero, C. G. (2023). Cronbach's Alpha. En *Encyclopedia of Quality of Life and Well-Being Research* (pp. 1505-1507). Springer International Publishing. https://doi.org/10.1007/978-3-031-17299-1_622
- García, V., Trujillo, D. y Estrada, L. (2021). Gestión del conocimiento empresarial en la Internet de las cosas. *Revista Ibérica de Sistemas e Tecnologías de Informação*, (E42), 568-578. <https://www.proquest.com/openview/bf09afd72a0cfbb921cc96447148a732/1?pq-origsite=gscholar&cbl=1006393>
- Hernández-Sampieri, R., & Mendoza, C. (2020). *Metodología de la investigación: Las rutas cuantitativa, cualitativa y mixta*. <https://www.inegi.org.mx/app/mapa/denue/default.aspx>
- Hunter, W. D. (2004) *Knowledge, Skills, Attitudes, and Experiences Necessary to Become Globally Competent* [Tesis doctoral, Lehigh University]. <http://dx.doi.org/10.13140/RG.2.2.15289.93289>
- Instituto Nacional de Estadística, Geografía e Informática [INEGI]. (2025). Directorio Estadístico Nacional de Unidades Económicas.
- Jiaxin, G., Huijuan, Z., & Md Hasan, H. (2024). Global competence in higher education: A ten-year systematic literature review. *Frontiers in Education*, 9, 1404782. <https://doi.org/10.3389/feduc.2024.1404782>
- Loor-Carvajal, G., Rezabala-Encalada, Y., Sánchez-Briones Y. y Pozo-Rodríguez J. (2020). El método Delphi: Una aproximación a su utilización en la evaluación del desempeño en Ecuador. *Revista científica dominio de las ciencias*, 6(4), 1462-1483. <http://dx.doi.org/10.23857/dc.v6i4.1560>
- Mansilla, V. B., & Wilson, D. (2020). What is Global Competence, and What Might it Look Like in Chinese Schools? *Journal of Research in International Education*, 19(1), 3-22. <https://doi.org/10.1177/1475240920914089>
- Markasović, D., Podrug, N., & Aleksić Fredotović, A. (2024). Global leading and competencies of global leaders. *Naše gospodarstvo/Our Economy*, 70(1), 50-60. <https://doi.org/10.2478/ngoe-2024-0005>
- Mouboua, P. D., Atobatele, F. A., & Akintayo, O. T. (2024). Cross-cultural competence in global HRD: Strategies for developing an inclusive and diverse workforce. *International Journal of Science and Research Archive*, 12(1), 103–113. <https://doi.org/10.30574/ijrsra.2024.12.1.0765>
- Organisation for Economic Co-operation and Development [OECD]. (2023). *OECD Skills Outlook 2023: Thriving in a Digital and Global World*. OECD Publishing. <https://doi.org/10.1787/e11c1c2d-en>
- Sälzer, C. & Roczen, N. (2018). Assessing global competence in PISA 2018: Challenges and approaches to capturing a complex construct. *International Journal of Development Education and Global Learning*, 10 (1), 5–20. <https://doi.org/10.18546/IJDEGL.10.1.02>
- Secretaría de Economía. (2024). *Mipymes mexicanas: motor de nuestra economía*. https://www.gob.mx/cms/uploads/attachment/file/923851/20240626_Dosier_MIPYMES_SALIDA_Interactivo_5.pdf
- Secretaría de Economía. (2025). *Data México, acerca de Sinaloa*. <https://www.economia.gob.mx/datamexico/es/profile/geo/sinaloa-si?timeNetTradeSelector=Year>
- Steers, R. M., Osland, J. S., & Szkudlarek, B. (2023). Developing Global Management Skills. In *Management Across Cultures: Challenges, Strategies, and Skills* (pp. 25–48). Cambridge University Press.
- Tauro, D. A. (2021). *Strategies for retaining organizational knowledge from retiring employees* (Doctoral dissertation, Walden University). Walden Dissertations and Doctoral Studies. <https://scholarworks.waldenu.edu/dissertations/10468>
- Yuwono, M. A., & Ellitan, L. (2024). The role of global competence in addressing challenges and opportunities in international business in the era of global change. *ULIL ALBAB: Jurnal Ilmiah Multidisiplin*, 3(8), 740-746.

FINANCING

None.

DECLARATION OF CONFLICT OF INTEREST

None.

AUTHOR CONTRIBUTION

Conceptualization: Rosa Delia Aguilar Carvajal and Salvador Acosta Haro.

Data curation: Rosa Delia Aguilar Carvajal and Salvador Acosta Haro.

Formal analysis: Rosa Delia Aguilar Carvajal and Salvador Acosta Haro.

Research: Rosa Delia Aguilar Carvajal and Salvador Acosta Haro.

Methodology: Rosa Delia Aguilar Carvajal and Salvador Acosta Haro.

Project management: Rosa Delia Aguilar Carvajal and Salvador Acosta Haro.

Resources: Rosa Delia Aguilar Carvajal and Salvador Acosta Haro.

Software: Rosa Delia Aguilar Carvajal and Salvador Acosta Haro.

Supervision: Rosa Delia Aguilar Carvajal and Salvador Acosta Haro.

Validation: Rosa Delia Aguilar Carvajal and Salvador Acosta Haro.

Visualization: Rosa Delia Aguilar Carvajal and Salvador Acosta Haro.

Writing – original draft: Rosa Delia Aguilar Carvajal and Salvador Acosta Haro.

Writing – proofreading and editing: Rosa Delia Aguilar Carvajal and Salvador Acosta Haro.