

**Digital technology and job performance: a case study in self-service stores in Los Mochis, Sinaloa**

Tecnología digital y desempeño laboral: un estudio de caso en tiendas de autoservicio en Los Mochis, Sinaloa

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[brenda.liera@uas.edu.mx](mailto:brenda.liera@uas.edu.mx)**Cómo citar:**Liera Caro, B. K. y Acosta Navarro, Y. I. (2026). Digital technology and job performance: a case study in self-service stores in Los Mochis, Sinaloa. *Integración*, 10(1), 11-19. <https://doi.org/10.36881/ri.v10i1.1282>**Fuente de financiamiento:** No financiado.**Declaración de conflictos de interés:** Los autores declaran no tener conflictos de interés.**Resumen**

El objetivo de este estudio fue analizar la relación entre el uso de tecnologías digitales y el desempeño laboral de los colaboradores en tiendas de autoservicio en Los Mochis, Sinaloa. La investigación se desarrolló bajo un diseño de estudio de caso con un enfoque mixto, que combinó encuestas a 108 colaboradores y entrevistas a responsables de tienda y personal operativo. Este enfoque permitió recopilar datos cuantitativos sobre el uso de herramientas digitales, capacitación y percepción de impacto, así como información cualitativa sobre experiencias y retos en la integración tecnológica. Los hallazgos muestran que la tecnología digital ha contribuido a mejorar la eficiencia, la organización y la calidad del servicio, gracias a sistemas de punto de venta, aplicaciones de inventario y reportes automatizados. Sin embargo, persisten desafíos relacionados con la necesidad de capacitación continua y el fortalecimiento del uso de herramientas de comunicación interna para optimizar los procesos laborales y la coordinación.

**Palabras clave:** Tecnología digital, desempeño laboral, tiendas de autoservicio, capacitación, transformación digital.**Abstract**

The objective of this study was to analyze the relationship between the use of digital technologies and the job performance of employees in self-service stores in Los Mochis, Sinaloa. The research was conducted using a case study design with a mixed-methods approach, combining surveys of 108 employees and semi-structured interviews with store managers and operational staff. This approach made it possible to gather quantitative data on the use of digital tools, training, and perceived impact, as well as qualitative information on experiences and challenges in technological integration. The findings show that digital technology has helped improve efficiency, organization, and service quality through the use of point-of-sale systems, inventory applications, and automated reports. However, challenges remain regarding the need for ongoing training and the strengthening of the use of internal communication tools to optimize work processes and coordination within the stores.

**Keywords:** Digital technology, job performance, self-service stores, training, digital transformation.**OPEN ACCESS**  
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## Introduction

The use of digital technology has become an essential factor in the transformation of work processes in retail, particularly in self-service stores. The incorporation of point-of-sale systems, inventory management platforms, shift management applications, and internal communication tools has significantly modified operational, administrative, and customer service activities.

This modernization process has improved efficiency, optimized resource use, and enhanced service quality—aspects that are fundamental to maintaining competitiveness in a dynamic economic environment. As the Economic Commission for Latin America and the Caribbean (ECLAC, 2020) points out, the digitization of processes is key to increasing productivity and meeting the challenges of today's markets.

The relevance of this study lies in the need to understand how the use of digital technology impacts the job performance of employees in this sector, given that the success of digital transformation depends not only on the availability of technological tools but also on the level of adoption, appropriation, and effective use by those who employ them. The literature indicates that this process requires not only investment in technology, but also the creation of an organizational culture focused on innovation, continuous training, and employee support (Telefónica Foundation, 2020). This is essential to avoid gaps in technology use and ensure that its implementation truly contributes to improving individual and collective performance.

In this context, the present research aims to analyze the relationship between the use of digital technology and the job performance of employees in self-service stores in the city of Los Mochis, Sinaloa. Through a mixed-methods field study, it seeks to identify how digital tools influence variables such as productivity, motivation, and work quality. The results are intended to provide useful evidence to strengthen training strategies, technology management, and optimization of the work environment in the retail sector.

## Digital Technology

Currently, the concept of digital technology has evolved to encompass a set of tools, processes, and systems that enable the creation, storage, processing, and transmission of information through electronic devices and interconnected networks. According to Area (2009), digital technology is defined as “the set of resources,

tools, equipment, and programs used for the processing, management, and distribution of information through technological devices.” This type of technology not only includes devices such as computers and smartphones, but also platforms, applications, and services that promote innovation and efficiency in various productive and educational sectors.

For their part, Prado (2025) emphasizes that digital technology is “a dynamic ecosystem of interconnected tools and services that enable new forms of social interaction, learning, and knowledge generation in a globalized environment” (p. 78). This definition highlights the importance of digital technology as a driver of social and economic change in the contemporary context, where digital transformation is key to sustainable development and competitiveness. In this sense, digital technology is not limited to being a set of support tools, but has become the core of the growth and adaptation strategies of modern organizations.

## Digital Technology in Self-Service Stores

The incorporation of digital technology in self-service stores has allowed for the automation of multiple processes that previously depended on manual intervention. Point-of-sale systems, inventory control platforms, and human resource management applications not only streamline tasks, but also offer real-time data that facilitates strategic decision-making (Peñate et al., 2021). These tools also contribute to improving the customer experience by reducing wait times and operational errors, thus strengthening companies' competitiveness in an increasingly dynamic market.

## Job performance

Job performance is understood as the set of actions, behaviors, and results that contribute to the achievement of an organization's objectives. It is not limited to the execution of assigned tasks but also encompasses commitment to institutional values and support for the overall functioning of the work team. According to Merchán et al. (2023a), job performance involves both effectiveness in formal tasks and the display of behaviors that strengthen the organizational climate. Similarly, Bautista et al. (2020) emphasize that performance includes those behaviors and actions that help achieve business objectives, reflecting a component of responsibility and proactivity on the part of the employee.

In this context, digital technology plays a key role in enhancing performance in self-service stores,

as it facilitates task management, optimizes processes, and allows for greater precision in daily activities. As ECLAC (2020) points out, the integration of digital tools in work environments contributes to improving productivity, service quality, and employee satisfaction by simplifying their functions and reducing operational errors.

**Technology and Job Performance**

The relationship between the use of digital technology and job performance is key in today's organizational environments. The incorporation of tools such as point-of-sale systems, inventory management platforms, and

internal communication applications helps optimize processes, reduce time, and facilitate tasks, thus improving the individual and collective performance of employees. According to ECLAC (2020), digitalization in the workplace boosts productivity and service quality, as well as promoting inclusion in the work environment. However, the positive impact of technology is not automatic; to achieve it, organizations must accompany its implementation with training processes and support strategies that prevent technological overload and job stress. As Merchán et al. (2023b) point out, the proper management of these factors is essential for technology to truly enhance employee performance and engagement.

**Table 1**  
*Presents studies related to digital technology and job performance*

Author and Year	Title	Objective
Pinto and Suárez (2021).	Study to determine the effects of implementing Information and Communication Technologies on job performance at Banco Davivienda in the city of Tunja.	The objective of this research was to determine the effects of implementing Information and Communication Technologies (ICTs) on job performance at Banco Davivienda in the city of Tunja. The study employed a descriptive qualitative approach, using a case study applied to 60 employees from the operational and commercial areas. Surveys, interviews, and structured observation with electronic tools were used to collect the information. The results showed that ICTs improved operational processes, benefiting the bank and its clients, and led to increased employee performance. However, they also generated job insecurity due to automation, highlighting the need to reorient staff profiles toward more specialized tasks and to maintain employee motivation to ensure service quality.
Godoy (2024).	Use of digital transformation in job performance.	The purpose of this research was to examine the advances and referenced theoretical perspectives, and at the same time, contribute to the design of a training pathway on digital transformation and job performance. This methodology involved a literature review of specialized literature, scientific research, and technical studies. The literature was compiled by searching databases such as Scopus, SciELO, and Google Scholar. The results showed that the new era of digital transformation and the process of new learning have been the focus of many researchers over the years, each of whom has made significant contributions and created new educational concepts, as well as gradually replacing traditional teaching methods with technological teaching aids.
García and Millones (2023).	Acceptance of technology and its relationship to the job performance of teleworkers.	The objective of this research was to determine the relationship between technology adoption and the job performance of teleworkers. A cross-sectional, descriptive, and quantitative study was conducted, applying self-administered surveys via Google Forms to 308 people working remotely in Lima, Peru, from May to October 2021. The data were analyzed using Spearman's rho coefficient and validated with reliability and validity tests. The results showed a positive and significant relationship between technology acceptance and job performance, highlighting the need for training and technology awareness programs to improve performance and reduce job uncertainty in remote work.

## Methodology

This research was conducted to analyze the use of digital technologies in the job performance of employees at self-service stores in the city of Los Mochis, Sinaloa. This approach allowed for examining the phenomenon within its real-world context, facilitating an understanding of organizational dynamics and individual experiences related to technology use in the workplace. As Hernández et al. (2021) point out, the case study is suitable for addressing complex phenomena because it allows for capturing the interaction of multiple variables in a specific scenario.

The research adopted a mixed-methods approach, combining quantitative and qualitative techniques to achieve a broader understanding of the phenomenon. In the quantitative phase, structured surveys were administered to collect data on the frequency of use of digital tools, the level of technological training, and the perceived impact of these tools on productivity. In the qualitative phase, semi-structured interviews were conducted to delve deeper into the employees' experiences and perceptions regarding technology use and its implications for their daily work. This methodological integration allowed for data comparison and enriched the analysis of the results.

The analysis of quantitative data was conducted using descriptive and correlational statistics, employing tools such as SPSS and Excel to obtain frequencies, percentages, and measures of relationship between variables. Qualitative data were processed using thematic content analysis, identifying categories and subcategories aligned with the research objectives. The instruments were previously validated and pilot-tested to ensure their clarity and relevance.

The target population consisted of approximately 940 employees. A group of 80 to 100 was surveyed using convenience sampling, and 8 to 12 employees were interviewed intentionally to ensure a diversity of perspectives. As highlighted by ECLAC (2020), the incorporation of digital technologies in work environments requires strategies that combine access to infrastructure and training programs to bridge gaps and maximize their impact on performance.

## Results and Discussion

The results obtained from interviews with employees of various self-service stores in the city of Los Mochis reveal that the implementation of digital technologies has generated significant improvements in their work

activities. Tools such as point-of-sale (POS) systems, barcode scanners, inventory control applications, and digital management platforms streamline processes, reduce errors, and simplify routine tasks, resulting in greater operational efficiency and better customer service.

This finding coincides with that of Vásquez (2025), who highlights that automated technologies improve internal management, free up staff from routine tasks, optimize operational management, and contribute to faster and more personalized customer service. The testimonies gathered during the research indicate that the use of automated systems facilitates customer service, improves product control, and reduces the operational burden associated with manual record-keeping, reinforcing the key role of technology in the individual and collective performance of employees.

From an organizational perspective, the incorporation of digital technologies in self-service stores can be analyzed through sociotechnical theory, which posits that any modification to an organization's technology inevitably affects its tasks, structure, and the people who comprise it (Chiavenato, 2011). The adoption of these technologies transforms forms of interaction, work routines, and the distribution of responsibilities, generating a comprehensive impact on the work environment.

Likewise, knowledge management, supported by information technologies, facilitates the collection, distribution, and use of organizational knowledge, promoting real-time decision-making by employees and supervisors (Nonaka & Takeuchi, 1995). However, this process is not without its challenges, since, as Chiavenato (2011) and Kotter (1996) point out, technological implementation can provoke resistance to change, generate stress, and demand a constant effort in training and adaptation from employees.

During the interviews, various institutional perceptions regarding these transformation processes were gathered. An operations manager from one of the stores stated that the incorporation of technology has been a significant advancement that, although it has involved a process of trial and error, has simplified work and improved the quality of results. He emphasized that technology is a tool that will remain and continue to evolve, making it essential for employees to develop adaptability and maturity to face these changes. This view aligns with Kotter's (1996) argument that the success of organizational change processes depends largely on the willingness and attitude of the staff. The testimony also highlighted technical challenges, such

as connectivity issues in certain areas, demonstrating that the benefits of technology are contingent upon the available infrastructure and do not depend solely on the willingness of employees.

Furthermore, the survey administered to more than 100 employees of self-service stores yielded quantitative information that complements these findings. The survey results show a marked trend toward the integration and daily use of digital tools in the performance of their activities, highlighting the positive impact on operational efficiency and customer service quality. The figures below are results obtained from this research.

Figure 1 relates to the age of employees in self-service stores, showing a diverse distribution across age levels, which demonstrates the presence of different generations in the workplace. The largest group is comprised of employees over 40 years old, at 30.8%, followed by those between 21 and 30 years old, who also represent 30.8%. The 27.1% of the workforce is between 31 and 40 years old, while 11.2% are between 18 and 20 years old. This generational diversity is a key factor in the analysis, as age can influence the levels of acceptance, adaptation, and proficiency with technological tools—elements that directly impact job performance in the stores.

**Figure 1**  
*Age of employees in self-service stores*

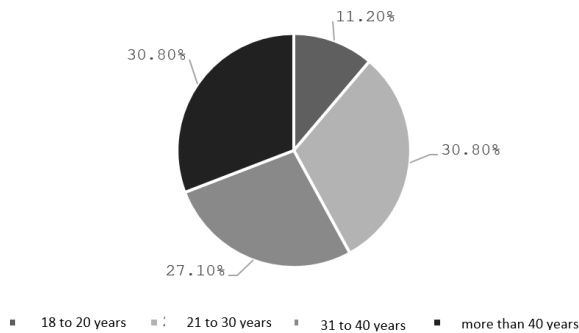
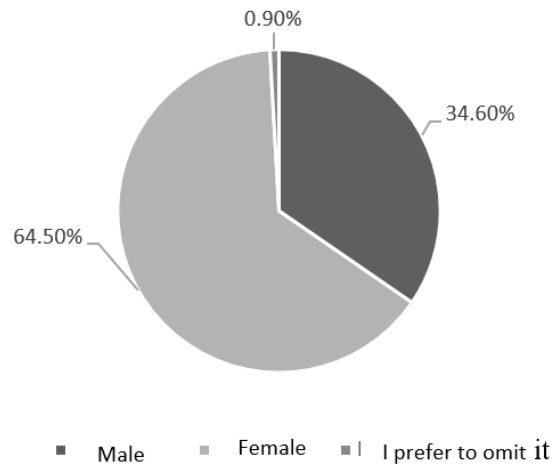


Figure 2 shows the gender distribution of the 108 employees surveyed in the self-service stores. The results show a majority of female participants, at 64.5%, compared to 34.6% who identified as male. This composition of the work teams is a relevant element for the analysis, since the dynamics of adoption and use of digital technologies can vary according to gender, which influences how these tools are integrated into employees' daily work.

**Figure 2**  
*Gender*



The survey was administered to employees in various roles within the operation of self-service stores, providing a broader perspective on the impact of technology in the work environment. As shown in Figure 3, the distribution of respondents' positions reveals that 41.7% are store managers, 27.8% are general assistants, and 23.1% hold other positions. This variety of roles is key to analyzing how the use of digital tools can affect performance differently, depending on each employee's responsibilities. Job position is a factor that influences interaction with technology and organizational processes (Chiavenato, 2011). store leader, cashier, general assistant

**Figure 3**  
*Employee Positions*

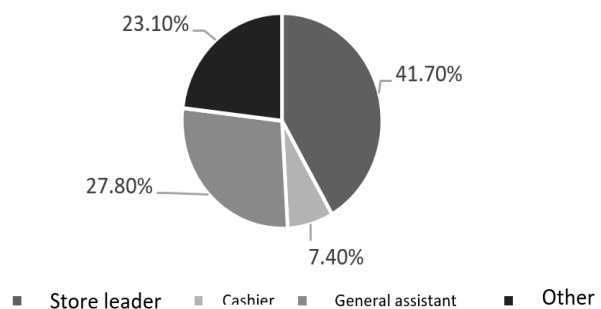


Figure 4 shows the distribution of respondents according to their length of service at the self-service stores. 47.2% of employees have been with the company for more than three years, 23.1% have between one and three years of service, 14.8% have less than six months, and 14.8% have between six months and one year. This data is significant, as almost half of the sample has a long history with the organization, which could influence their perception of technology use due to their greater experience in change processes and technological implementation. Conversely, the 29.6% of employees with less than one year at the company provide a more recent and still-integrating perspective, allowing for a comparison of different levels of adaptation and familiarity with digital tools.

**Figure 4**  
*Time in the company*

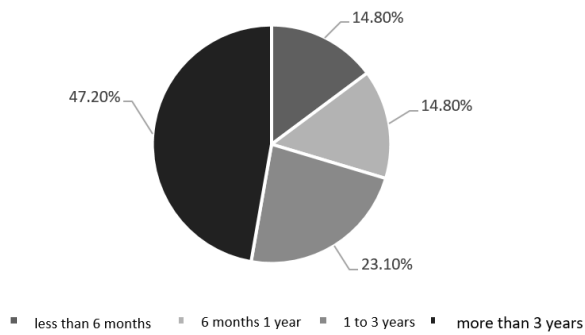
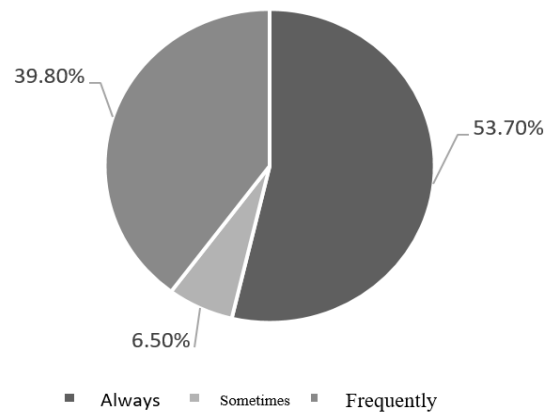


Figure 5 shows that 53.7% of the employees surveyed in self-service stores use digital tools consistently during their workday, while 39.8% use them frequently, and only 6.5% indicate using them occasionally. Taken together, these data show that more than 93% of workers regularly use digital technologies, demonstrating a strong technological presence in their daily activities.

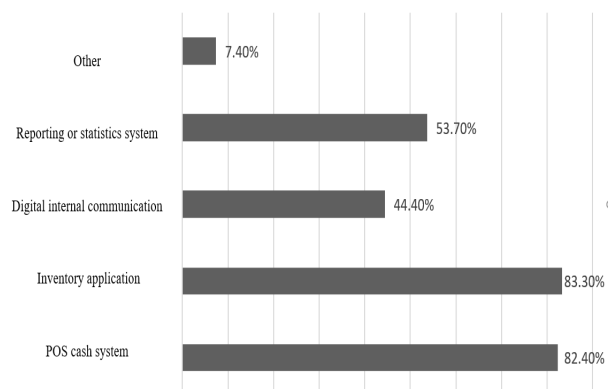
This high adoption rate aligns with recent trends in organizations, where studies indicate that digital transformation based on automated tools and integrated systems significantly improves operational efficiency and the customer experience (Kothapalli, 2022). The need to operate with automated processes, digitized inventories, electronic checkouts, and digital reports fosters greater control and performance, positioning self-service stores as environments with advanced technological integration and their employees as active users of these tools.

**Figure 5**  
*Digital tool management always sometimes frequently*



The data in Figure 6 reveals that in self-service stores, the most frequently used digital tools are inventory management applications (83.3%) and POS systems (82.4%), reflecting the priority given to sales operations and stock management. The use of reporting systems (53.7%) to support strategic decisions is also noteworthy. In contrast, digital internal communication has lower adoption rates (44.4%), possibly due to in-person or informal practices. 7.4% use other tools, suggesting specific needs. These results support the findings of Kane et al. (2019), who state that digital transformation typically focuses first on operational processes before collaborative tools.

**Figure 6**  
*Most Frequently Used Digital Tools*



As shown in Figure 7, the majority of employees surveyed in self-service stores are at an intermediate (42.6%) to advanced (35.2%) level in the use of digital tools, representing 77.8% with solid skills to perform in technological environments. In contrast, 22.2% consider themselves at a basic level, highlighting the need to strengthen their digital skills through training programs. It is noteworthy that no participant perceives themselves as lacking training (0%), reflecting a work environment with high digital inclusion.

This scenario aligns with the findings of the Economic Commission for Latin America and the Caribbean (ECLAC, 2020), which emphasizes that training in digital skills is essential for productive inclusion, increased productivity, and reducing gaps in the labor market. In this regard, the group with a basic level should be considered a priority to avoid internal inequalities and ensure that the entire team can contribute effectively in a digitized work environment.

**Figure 7**  
*Level of training in the use of digital tools*

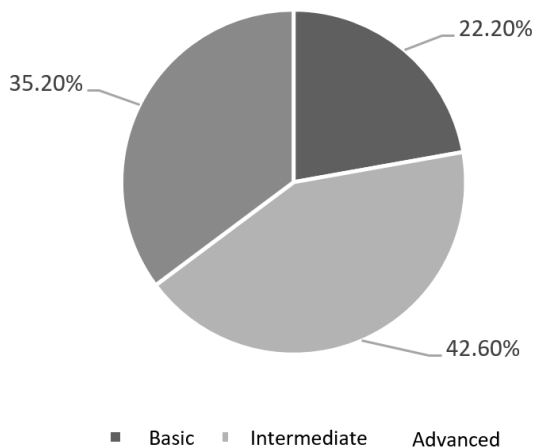
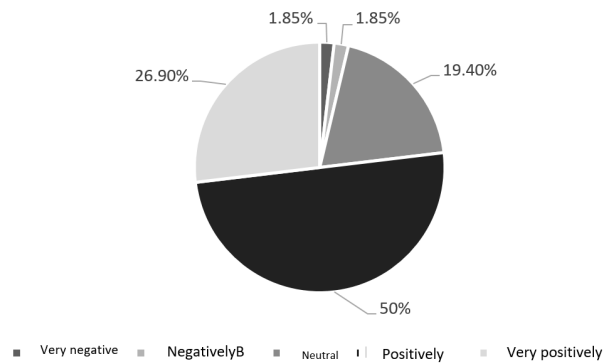


Figure 8 shows that 76.9% of employees surveyed in self-service stores perceive that digital technology has a positive or very positive impact on their job performance, highlighting benefits related to efficiency, organization, communication, and productivity. 19.4% adopt a neutral stance, while 3.7% express a negative or very negative perception, possibly due to technical difficulties, lack of training, or digital saturation.

This result is consistent with the findings of Ramírez et al. (2024), who point out that the impact of technology in work environments is diverse and conditioned by factors such as the level of digital training, infrastructure, and the support strategies deployed by organizations. Thus, the data confirm that, in general terms, digital

tools contribute to optimizing processes and facilitating work, although challenges remain that require attention through technology inclusion policies and continuous training programs.

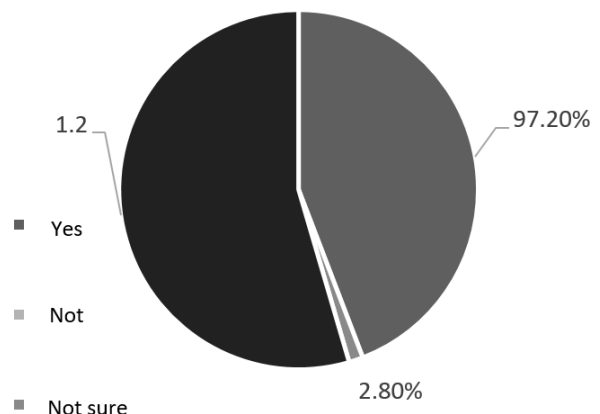
**Figure 8**  
*Impact of the use of digital technology on job performance*



As shown in Figure 9, 97.2% of respondents stated that digital technology has facilitated their daily tasks, demonstrating a positive and widespread impact on aspects such as process automation, instant communication, and agile access to information. Only 2.8% reported difficulties, possibly stemming from barriers such as lack of access, low digital literacy, or resistance to change.

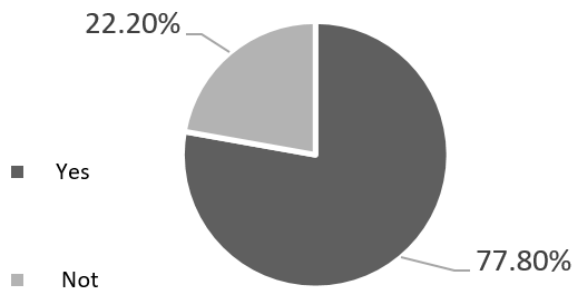
This result aligns with the findings of the Economic Commission for Latin America and the Caribbean (ECLAC, 2020), which highlights that digitalization in the workplace can improve productivity and efficiency, but requires inclusive strategies to overcome access and skills gaps. The existence of this minority group underscores the importance of implementing policies and training programs that ensure the benefits of technology reach all employees, without exception.

**Figure 9**  
*Digital technology in daily tasks*



As shown in Figure 10, 77.8% of the surveyed employees reported having received formal training in the use of digital tools, while 22.2% have not had access to this type of training. This data reflects that the majority have had structured learning, which promotes a more efficient and secure use of technologies in the workplace. Formal training is key to improving digital skills, reducing errors, and strengthening the professionalization of work, as noted by the Telefonica Foundation (2020), which highlights that the development of digital skills through training programs is essential for inclusion and competitiveness in new work environments. The fact that 22.2% have not received formal training underscores the need to strengthen training opportunities to avoid gaps in technology use.

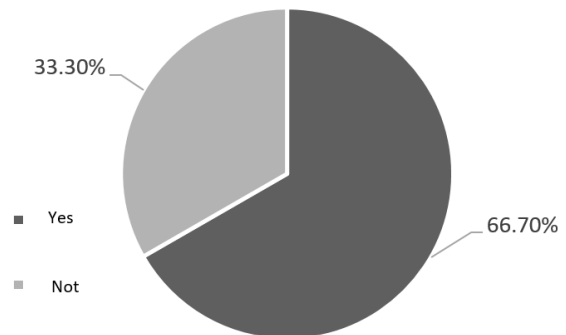
**Figure 10**  
*Formal training in the use of digital tools*



As shown in Figure 11, 66.7% of surveyed employees believe they need more training to improve their performance in using digital technologies, while 33.3% believe it is not necessary. This result reflects that the majority recognize the importance of updating and strengthening their skills to face the challenges posed by the current technological environment.

The need for continuous learning is essential to adapt to the evolution of digital tools and respond effectively to the demands of the labor market, as noted by the National Institute of Educational Technologies and Teacher Training (INTEF, 2020), which states that ongoing training in digital skills is key to employability and professional development in the knowledge society. The majority demonstrates a proactive attitude toward technological advancement, while the group that believes it does not require more training could face risks of stagnation in a context of accelerated digital transformation.

**Figura 11**  
*Capacitación continua a colaboradores*



**Conclusions**

The results of this research reflect that the incorporation of digital technologies in self-service stores in Los Mochis has generated significant positive impacts on employee job performance. Tools such as point-of-sale (POS) systems, inventory applications, barcode scanners, and management platforms have streamlined processes, reduced errors, improved product control, and optimized customer service. This technological integration has fostered operational efficiency, task organization, and service quality, reinforcing the strategic role of technology in the operation of these establishments.

However, the findings also highlight significant challenges, such as the need to strengthen ongoing training for all employees, which could limit future research, especially for those with a basic level of digital skills. Furthermore, areas of opportunity were identified in the use of digital internal communication tools, which still show lower adoption rates compared to other technological systems. Therefore, it is concluded that technological advancement must be accompanied by training policies, organizational support, and infrastructure improvements, so that all workers can fully integrate into a digitized and highly competitive environment.

**AI Usage Statement**

**Tool used: ChatGpt**

Purpose of use: To support the drafting, spelling, and grammar correction of the text before submission. The final content was reviewed and modified by the author; the tool was not used to generate new content or alter the meaning of the original text.

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