

THE DIGITAL ECONOMY IN RESTAURANTS IN GUAYAQUIL: A DESCRIPTIVE STUDY

LA ECONOMÍA DIGITAL EN LOS RESTAURANTES DE GUAYAQUIL: UN ESTUDIO DESCRIPTIVO

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ABSTRACT: The digital economy has transformed purchasing behavior, promoting greater adoption of digital platforms and online payment methods. The objective of the current study was to describe how the digital economy has influenced the operations and purchasing behavior of restaurant customers in Guayaquil, Ecuador. To achieve this, an empirical, cross-sectional, and quantitative research study with a descriptive scope was conducted. A 14-question survey was used, answered by 384 restaurant consumers in Guayaquil. The sampling was non-probabilistic and convenience-based, and the data were analyzed using descriptive statistical techniques. The study highlights that transaction security remains a concern for consumers. Therefore, for restaurants to fully leverage the advantages of the digital economy and foster consumer trust, it is important to implement robust security measures and ensure their proper dissemination. This will enhance the consumer experience and strengthen the competitive position of restaurants in an increasingly digitalized market.

Keywords: *Digital Economy, Digital Marketing, Digital Transformation, Cybersecurity, Restaurants.*

RESUMEN: La economía digital ha transformado el comportamiento de compra de las personas, promoviendo una mayor adopción de plataformas digitales y métodos de pago en línea. el objetivo del actual estudio fue: describir cómo la economía digital ha influido en el funcionamiento y en el comportamiento de compra de los clientes de restaurantes en Guayaquil – Ecuador. Para esto, se desarrolló una investigación empírica, transversal y cuantitativa, con un alcance descriptivo. Se utilizó un cuestionario de 14 preguntas, respondido por 384 consumidores de restaurantes en Guayaquil. El muestreo fue no probabilístico y a conveniencia, y los datos fueron analizados mediante técnicas estadísticas descriptivas. El estudio subraya que la seguridad en las transacciones sigue siendo una preocupación por parte de los consumidores, entonces, para que los restaurantes puedan

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aprovechar las ventajas de la economía digital y fomentar la confianza del consumidor, es importante implementar medidas de seguridad fuertes con su debida difusión, esto, mejorará la experiencia del consumidor y fortalecerá la posición competitiva de los restaurantes en un mercado cada vez más digitalizado.

Palabras clave: *Economía Digital, Marketing Digital, Transformación digital, Ciberseguridad, Restaurantes.*

INTRODUCTION

Globalization and post-globalization driven by information and communication technologies ICT's, play a fundamental role in the economic development of nations, thanks to the reduction of border barriers, this has allowed commercial organizations to have a greater scope in their business activities. In this sense, Acosta (2020) adds that the success of organizations will not only depend on the scope that the company can have thanks to the use of technologies and the Internet but also on the quantity, quality, and information management skills that the organization can have.

Despite the negative effects caused by the pandemic in 2020, it is important to recognize that this situation also positively and significantly affected the progress of e-commerce globally, boosting the digital economy (DE) as a whole and positively transforming the behavior and predisposition of consumers towards the use of digital media and platforms (Ortega-Vivanco, 2020). In this context, the digital economy is perceived as an economic transformation that brings with it the strong implementation of technologies in marketing, communication, distribution, and business management activities (Cueva Estrada and Sánchez-Bayón, 2024).

The advent of digitization has reduced costs in business processes, promoting automation, efficiency, and customization of activities, thus capturing the attention of the consumer due to the benefits that this suggests, which has allowed the strengthening of the business relationship (Company - Consumer - Company) in all areas, proposing a solid foundation for the development of the digital economy (Tobías Macías et al., 2024). Digitalization also transformed traditional marketing activities, proposing new forms of communication and forcing business leaders to rethink strategies to captivate the attention of their customers, thus emerging different aspects such as content marketing, influencers, and digital, among others

(Marín and Lozano, 2017; Riaño-Solano, et al., 2024; Verdugo-Ochoa and Ordoñez-Espinoza, 2024).

In Ecuador, to boost e-commerce and promote the development of the digital economy, in 2021 the Ministry of Telecommunications and the Information Society proposed a law on the use of digital platforms and e-commerce. This proposal sought to boost improvements in social welfare and encourage the adoption of technology in the daily activities of Ecuadorians, promoting commercial activities by digital means, as well as the development of the Ecuadorian digital economy.

In view of the above, the current study aims to describe how the digital economy has influenced the operation and purchasing behavior of restaurant customers in Guayaquil - Ecuador. With the research, the authors seek to present results that allow restaurant owners to make better decisions to promote their competitive position in the context proposed by the digital economy.

DEVELOPMENT

Digital Economy

Digitalization began its exponential growth with the appearance of smartphones or smartphones, which marked a milestone in the technology market and the activities of society. This growth has led people and companies to perceive digitalization as a necessity, since it automates and improves the efficiency of activities, in addition to allowing fast and ubiquitous access to information, opening up a range of possibilities for commercial and service organizations (Ortega Palacios and Suasti Alcivar, 2024).

Aguila Obra et al. (2001) describe the digital economy as an economic sector that encompasses goods and services, where development, production and marketing depend directly on the use of digital technologies, which has also transformed the way in which these services or goods are consumed. This form of economy is characterized by the digitization of operational, commercial, and strategic business processes due to the extensive interconnection structure and intensive use of data, allowing companies of all sizes to

participate in different markets globally (Lopez, 2023; Criveanu, 2023). All this includes everything from e-commerce, artificial intelligence, and the Internet of Things, which has transformed business interactions on a global scale (Salgado-García et al., 2024).

The digital economy involves different aspects such as the information economy, which has as its main focus the use of information and knowledge for economic decision-making (Zapata, 2024). Network economy, which is based on analyzing how the value of a company is exponentially increased thanks to its networks of users or customers (Ortiz and Herrera, 2024). A collaborative economy is described as an economic model where people rent or share goods and services through digital platforms, which promotes the efficient use of resources (Díaz and Barrero, 2024). All these economic forms interact in a new technological ecosystem promoting new forms of work, business, and exchanges, consolidating the digital economy as a whole.

Dimensions of the digital economy

The Comisión Económica para América Latina y el Caribe (CEPAL, 2013) describes three main dimensions that enable the development of the digital economy:

Broadband networks and specialized infrastructure are essential elements of DE since they provide the necessary technological basis for data transmission, including local, national, and international connections and public access points that encourage communication and data exchange on a global scale. The high speed of this service allows the proper functioning of digital applications, social networks, and e-commerce, which promotes economic growth. Without this component, DE would not be able to maintain its business operations (Aguado et al., 2015; Cordero, 2019; Seminario, 2020; Romero et al., 2024).

The technology industry is another foundation of the DE, which includes a diverse range of elements that determine its operation. Hardware refers to physical devices such as servers and mobile devices; software involves applications, operating systems, CRM systems for customer service (Onassis and Utama, 2024), ERP for the integrated management of organizations (León and Arteaga, 2024), and even executive support systems for decision making. All these applications allow the automation of each of the operations within all

business processes. They also provide adequate management and distribution of information at all business levels, allowing the generation of knowledge, an intangible and strategic asset within the company, which drives creativity and innovation, essential elements in the knowledge society. All this allows for increasing competitiveness and motivates digital transformation in various sectors (Weingartner and Estevão, 2023).

Users, which include businesses, individuals, and government, are important elements of DE. Organizations create and offer products and services using digital technologies strategically, which promotes innovation and competitiveness. People are consumers and content creators, providing diffusion to the benefits of technologies. The government proposes regulations that support the development of digital infrastructures. Together, these users improve productivity, increase employment, and boost important sectors such as public services, medicine, and education, contributing to the growth of DE (Cueva Estrada and Sánchez-Bayón, 2024; Fernandes et al., 2024).

The above is supported by the use of resources and platforms that strengthen the digital economy: cloud computing, social networks, and mobility generate large amounts of data that are then transformed into information through online software and artificial intelligence. This becomes a supply for the creation of business strategies based on information, which improves decision-making.

It is important to mention the intervention of the State as the main basis for sustaining and developing the digital economy, considering that the use of technologies is of general interest and that it cuts across all activities of society. Therefore, government intervention must materialize in making the benefits of technologies reach all citizens through investment in infrastructure, training, and regulations that take care of the common interest and minimize the digital divide.

Important additional elements in the digital economy

Cybersecurity is relevant to DE because it protects the integrity and confidentiality of online data and systems. Without robust cybersecurity regulations, transactions and information exchange would be vulnerable to cyber-attacks, which diminishes user confidence and

stymies economic growth. A secure digital environment promotes trust in DE operations (Arroyo et al., 2020; Diego and Fernandez, 2020).

Digital marketing is another factor of interest for ED, as it allows companies to reach and attract a global audience in an efficient and personalized way. Through media such as social networks, strategic content, and online advertising, organizations can increase their visibility. Driving sales and business development (Mejía-Giraldo, 2020; Cueva Estrada et al., 2021; Mera-Plaza et al., 2022).

Digital payment methods in DE promote fast and secure transactions for businesses and consumers. Technologies such as e-wallets, mobile payments, and digital currencies improve the efficiency of e-commerce, expanding access to global markets and simplifying the buying and selling process (Vidal Pino et al., 2024). These payment methods have allowed improving the customer experience in DE, offering a personalized, efficient, pleasant, and intuitive interaction on digital platforms, through ubiquitous and real-time attention. All this offers at the same time increased servitization in companies, which can offer additional services, improve customer value, and generate new revenues thanks to the benefits of technologies (Cueva Estrada et al., 2021; Soellner et al., 2024; Vendrell-Herrero et al., 2024).

Digital economy in Ecuador

The arrival of the COVID-19 pandemic was a growth opportunity for e-commerce in Ecuador, given that it increased the use of technology and the adoption of e-commerce; however, a challenge in this regard for Ecuadorian companies and entrepreneurs was to transmit confidence to the consumer at the time of the commercial transaction (Espinosa Vélez and Armijos-Buitrón, 2022). Regarding the state of DE in Ecuador, the results of the Information and Communication Technologies report, developed by the Instituto Nacional de Estadística y Censos [INEC] (2023a), are shown below.

Regarding technological equipment in Ecuadorian households in 2022, 40.4% had a desktop computer, laptop or Tablet, while in 2023 this percentage decreased to 33.1%. However, the proportion of people with an active cell phone in the same year was 59.6%, while the

percentage with a smartphone was 55.6%, which from the perspective of the authors shows a trend towards mobility and ubiquity of elements of interest for the growth of DE.

The percentage of households with internet access in 2022 was 60.4%, while in 2023 it increased to 62.2%. The Internet is mainly used for telephone communications by 79.2%, followed by entertainment activities (9.6%), education and learning (7.7%), for work reasons (1.8%), obtaining information (1.0%), and others (0.7%) corresponding to e-commerce, cloud storage, online government procedures, reading books and newspapers online, electronic banking, medical appointment scheduling. Finally, the report states that in 2023 digital illiteracy was 7.6%. The figures shown show an appropriate scenario for the development of DE in Ecuador, especially in terms of mobile technology and Internet use. But it also shows a technology gap that the Ecuadorian government must solve, by the figures shown about digital illiteracy and the low percentage of Ecuadorians who use the internet for work, study, and e-commerce activities.

In the Study of non-face-to-face transactions in Ecuador (Universidad Espíritu Santo and the Ecuadorian Chamber of Electronic Commerce, 2023), with a sample of 4,696 respondents, 91% stated that they had made purchases online, and this study reveals promising figures for DE. The country is in fifth place among South American countries in terms of Internet penetration, reaching a share of 86% with 71% of active Internet users. At the same time, this agency mentions that Ecuador achieved a 10% increase in online sales participation, compared to an initial projection of 2.7%, representing 62.4 million e-commerce transactions, compared to a total of 323 million digital transactions. Table 1 below shows the distribution of commercial transactions in Ecuador.

Table 1*Distribution of digital transactions in Ecuador*

Category	2022	2023
Food, Beverages and Tobacco	57%	65%
Personal Goods	52%	75%
Entertainment	35%	52%
Home	32%	42%
Health and Medicine	62%	66%
Services	50%	78%
Technology and Appliances	30%	48%

Source: Universidad Espíritu Santo y Cámara Ecuatoriana de Comercio Electrónico (2023).

The transition to DE in Ecuador has changed the shopping perspective of customers, which has led companies to invest in research and development, with the aim of providing consumers with a pleasant, intuitive, and ubiquitous experience from their digital platforms. According to Alvarado-Gastiaburo and Vergara-Díaz (2018), the cities with the highest incidence of digital transactions are Cuenca, Quito, and Guayaquil. In these cities, consumers show a preference for online shopping in the clothing and footwear category, which represents 33% of the total, compared to other categories (technology, food and supplies, home, among others).

Digital transactions in Ecuador have become a target for cyber-attacks. Kaspersky's report (2023) shows that there were 2.3 million attacks on smartphones and tablets in Latin America, during August 2022 to August 2023. This reflects more than 6,300 attacks per day, which represents an average of 5 attacks every minute. The most affected nation was Brazil, which also ranks fifth in the world, followed by Mexico in eighth position and Ecuador in twenty-third position. This leaves a pending duty on the part of the Ecuadorian State to guarantee data protection (Aguilar et al., 2023).

The digital economy in food service

According to data published by the Banco Central del Ecuador (2023), there are 136,223 companies in active status, of which 3,531 belong to the accommodation and food service

sector; of this group, 2,058 companies are related to the restaurant sector, representing 1.5% of the total number of active companies in the country, with a significant economic growth of 12.2% in 2022.

Along the same lines, the Study of non-face-to-face transactions in Ecuador (Universidad Espíritu Santo and the ECámara Ecuatoriana de Comercio Electrónico, 2023) shows that the applications most used by Ecuadorians are Uber Eats, McDonald's; Kfc; Sweet & Coffee and PedidosYa, concluding that restaurant brands should focus on generating a pleasant experience for their customers from their digital platforms, considering the preference of Ecuadorians for the use of mobile devices.

Salazar (2023) argues that consumers who visit restaurants or cafeterias in Ecuador do so between two and five times a month. They mainly consider desire, emotion, availability, accessibility and product advertising, characteristics where the benefits of technology could make inroads and improve the consumer experience. Although there are many shopping options, consumers prefer to consume food at home. In view of the above, the current study seeks to describe how the digital economy has influenced the operation and purchasing behavior of restaurant customers in Guayaquil - Ecuador.

METHODOLOGY

The research conducted was empirical, of cross-sectional design, and with a quantitative approach and descriptive scope (Hernández and Mendoza, 2018). A questionnaire composed of 14 questions was designed, taking into account the dimensions of DE described in the previous section, answers with multiple options and a Likert scale were used. This questionnaire was answered by consumers of the following restaurants in the city of Guayaquil: Eddy's, Michael's Rukito, and Pique & Pase selected for their positioning and acceptance in social networks, especially on platforms such as Instagram and TikTok. These restaurants belong to the medium-high range and have positive perceptions according to consumer reviews and ratings.

According to the Instituto Nacional de Estadísticas y Censos (INEC, 2023b), the economically active population (EAP) in the city of Guayaquil is 1.2 million people, which was used as the population reference for the study. A statistical formula was applied to determine the sample size, with a margin of error of 5% and a confidence level of 95%. The resulting sample size was 384 consumers, selected from the aforementioned restaurants (Lind et al., 2012).

Sampling was non-probabilistic and convenience sampling, as participants were chosen voluntarily based on their availability at the selected locations. To improve the validity and reliability of the study, experts in digitization and marketing were consulted and the questionnaire was pilot-tested before its final application, adjusting the questions according to the comments received to ensure clarity and relevance (Lind et al., 2012). In addition, descriptive statistical analysis techniques were employed to interpret the data collected, using specialized software.

RESULTS AND DISCUSSION

The profile of the sample (n=384) used for the study is described below. Regarding gender, 58% identified themselves as female, while 42% identified themselves as male. Table 2 shows the age distribution of the respondents.

Table 2

Sample distribution by age

Age	Female	Male
18 to 28 years	129	57
29 to 39 years	44	67
40 to 49 years	29	25
50 and older	22	11
Total, general	224	160

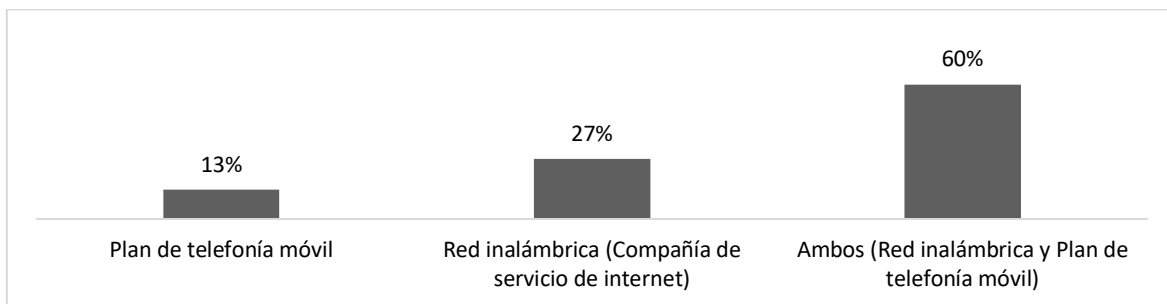
Source: own elaboration.

Figure 1 below shows respondents' preferences for Internet access. As can be seen in the figure, 60% of the respondents claimed to have both a cell phone plan and a wireless internet

connection at their disposal. The most commonly used mobile device for online transactions is the smartphone, with a majority preference of 65%, as opposed to the use of computer/laptop 34% and Tablet 1%. The results found in the current research are in complete agreement with those obtained by INEC (2023a), which ratifies the existence of the necessary foundations for the growth of DE in Ecuador, evidenced by the use of mobile devices and ubiquity.

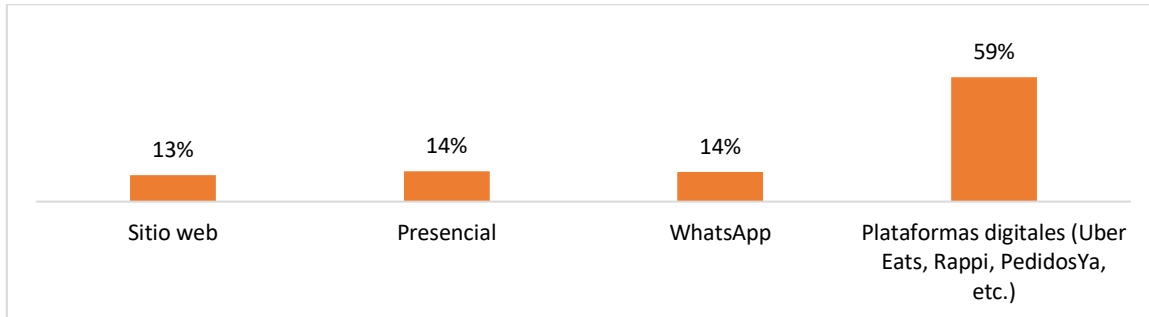
Figure 1

What is your main means of accessing the Internet?



Source: own elaboration

Figure 2 clearly shows the tendency of Guayaquileños to place orders through digital platforms; however, it is important to analyze this finding with the results of the Universidad Espíritu Santo y la Cámara Ecuatoriana de Comercio Electrónico (2023), which conclude that the purchase of products and services is the activity least performed by Ecuadorians, which coincides with the findings of INEC (2023a). Despite there is a predisposition to use digital media to make purchases, this activity is performed infrequently. In line with the above, only 25% of respondents stated that they always make online purchases in restaurants in Guayaquil.

Figure 2*How do you prefer to place your food orders?*

Source: own elaboration

In this order, Instagram, email, and TikTok are the digital media where respondents claim to receive more offers and promotions from restaurants. In this sense Moreira-Avilés et al. (2023), add that social networks have allowed a dynamic interaction between company and consumer, considering the challenges of digital business strategies and new business models, managing to capture the attention of customers through promotions or offers. In this same line, Cueva-Estrada et al. (2020) consider that one of the digital strategies most applied by companies is influencer marketing. They describe it as a type of marketing that aims to convince the target audience, through the use of influencers who make the brand known.

Within the digital platforms preferred by guayaquileños to order food in restaurants, the order was as follows: PedidosYa (39%), Uber Eats (26%), restaurant's own home delivery service (18%), Rappi (17%) and other platforms (1%). It is important to note that Uber Eats was again mentioned by respondents as one of the preferred platforms, in line with research by Universidad Espíritu Santo y la Cámara Ecuatoriana de Comercio Electrónico (2023). However, unlike that study, on this occasion, respondents mentioned PedidosYa as the most used platform.

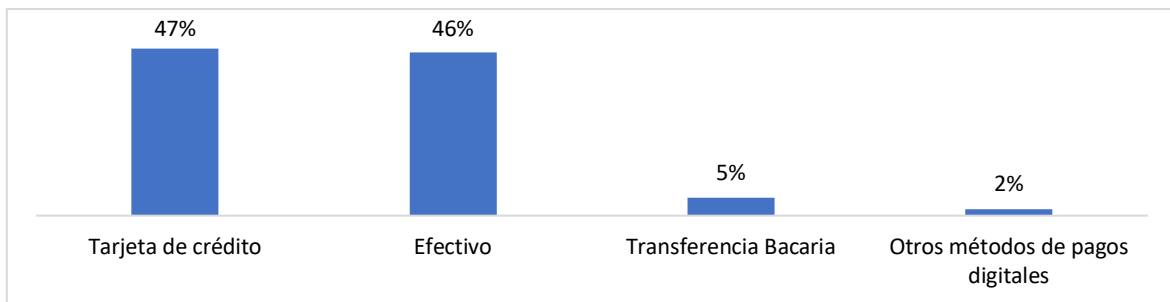
Regarding the factors that influence the selection of a digital platform for food orders, the values in percentage are shown below: Agility and efficiency 15.67%; Convenience 18.73%; Security 32.60%; Price and offer 33.00%. The first factor that influences their decision is price and offer, a characteristic traditionally used by marketing strategies to captivate the attention of customers (Flores-Rueda et al., 2024). On the other hand, there is security, a factor

that was analyzed in the previous chapter and that is a component of the digital economy that the Ecuadorian State must address to improve trust in digital transactions (Arroyo Guardado et al., 2020; Diego et al., 2020).

There is no significant difference between respondents when paying in restaurants with credit card or cash (see Figure 3), however, if the percentages of credit cards, bank transfer and other digital payment methods are combined, they add up to 54% compared to the traditional means of payment in cash. This result is in line with the findings of the study conducted by the Universidad Espíritu Santo y la Cámara Ecuatoriana de Comercio Electrónico (2023), which allows visualizing an adequate outlook for DE growth.

Figure 3

What is your preferred payment method when consuming in restaurants?



Source: own elaboration.

In terms of platform security, 86% of respondents said they feel more confident if restaurants display security certificates on their digital platforms. Also, the presence of security filters such as two-step authentication, sending codes and text messages after purchase influences their perception of security and trust.

Finally, respondents were asked about their online shopping experience in restaurants, Table 3 shows the distribution of the results.

Table 3*Customer experience during online transactions*

Description	Very inefficient	Inefficient	Average	Efficient	Very efficient
Online support	6%	16%	30%	20%	28%
Security in online transactions	3%	18%	43%	21%	15%
Speed in the arrival of the product	1%	6%	34%	39%	20%
Attention to the specific requirements of the order	1%	3%	25%	34%	37%
The delivery application has sufficient options for the transaction	1%	10%	41%	26%	22%

Source: own elaboration.

The implementation of digital platforms and delivery applications improves the efficiency and speed of transactions, but there is a strong distrust in what has to do with data security when transacting. Also, from the respondents' point of view, there is a need to improve the intuitive experience in the use of applications when placing orders.

CONCLUSIONS

The adoption of digital platforms in the processes and services of restaurants in Guayaquil, positively improves the consumer experience, giving way to fast and convenient purchasing processes. But there is a need to improve data security when making online transactions to increase consumer confidence, this is a duty of the Ecuadorian State and an obligation on the part of companies. Despite the widespread adoption of digital payment methods, security remains a major concern among consumers. Therefore, restaurants should not only focus on adopting advanced digital technologies and applications but also on strengthening the security infrastructure and promoting consumer education on the information security measures implemented.

Consumers in Guayaquil show a clear preference for ordering through digital platforms such as PedidosYa and Uber Eats. This trend highlights the importance for restaurants to improve their digital marketing strategies, usability of applications, and increase their portfolio of services (servitization), to meet consumer expectations and ensure their loyalty. However, it is concluded that online purchases in restaurants are made very infrequently, so there is also a pending task for organizations to motivate the use of digital media, without forgetting to offer the necessary security for transactions, a situation that would boost the DE as a whole.

The integration of technologies in restaurants has improved the competitive position of these organizations by offering personalized services. However, to sustain this advantage, restaurants must invest in innovation and constant development to adapt to the new demands of the digital market, thus ensuring an enriching, optimal, and safe experience for the consumer. In this context, mobile applications are a source of development and innovation for restaurants, taking advantage of the benefits suggested by ubiquity and given that the smartphone is the most used medium by Guayaquileans.

The researchers recognize certain limitations in this research, mainly that it was carried out in only one city in Ecuador and that its scope is exclusively descriptive. Therefore, future research at the national and international levels is suggested, as well as the use of stronger statistical methodologies that allow inferable results to be obtained.

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