

## Use of new technologies and their relationship with the quality of service in the retail trade

Uso de nuevas tecnologías y su relación con la calidad de servicio en el comercio minorista

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### ABSTRACT

In the last two years, due to the emergent sanitary measures due to the COVID-19 pandemic, the retail sector needed to evolve rapidly and many of them had to incur in the use of new technologies in order not to lose their customers. However, the literature recommends contemplating their relationship with the quality of customer service to minimize the investment risk. Determining this relationship is the main objective of this study within the context of the retail trade in the city of Guayaquil. For this purpose, a quantitative paradigm with a non-experimental design of descriptive and correlational scope is used, with a transversal cut using a sample of 340 cases. A measurement instrument based on the SERVQUAL model and adapted to the study context was applied to them. The results show that consumers are between 26 and 40 years old, more than half of them consume food and non-alcoholic beverages, and 94% are satisfied with the quality of service received. If there is a relationship between the use of new technologies and the quality of service, it is highlighted that empathy and tangible elements present the smallest gap with respect to consumer expectations; however, greater attention should be paid to their responsiveness.

**Keywords:** Qualitative, descriptive, business

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## RESUMEN

En los dos últimos años a causa de las medidas sanitarias emergente por la pandemia COVID-19, el sector de comercio minorista necesitó evolucionar aceleradamente y muchas incursionar en el uso de nuevas tecnologías para no perder a sus clientes. Sin embargo, la literatura recomienda contemplar su relación con la calidad de servicio al cliente para minimizar el riesgo de inversión. Determinar esta relación es el objetivo principal de este estudio dentro del contexto del comercio minorista de la ciudad de Guayaquil. Para esto, se acoge un paradigma cuantitativo con diseño no experimental de alcance descriptivo y correlacional, con corte transversal empleando una muestra de 340 casos. A ellos, se aplicó un instrumento de medición basado en el modelo SERVQUAL y adaptado al contexto de estudio. Los resultados reflejan que el consumidor se encuentra entre 26 y 40 años, más de la mitad consume alimentos y bebidas no alcohólicas, y el 94% se encuentra satisfecho con la calidad de servicio recibido. Si existe relación entre el uso de nuevas tecnologías y la calidad de servicio; se resalta que la empatía y los elementos tangibles presentan la menor brecha con respecto a la expectativa del consumidor, sin embargo, deben prestar mayor atención a su capacidad de respuesta.

**Palabras clave:** Cualitativa, descriptiva, empresa

## INTRODUCTION

This research uses two variables in the field of business administration, on the one hand, we have the quality of service, which has been well developed by researchers and marketing professionals; and, on the other hand, the use of new technologies that currently facilitates the constant communication of companies with their consumers.

In the last two decades, the retail perspective has evolved thanks to the growth of the Internet and the development of new technologies that facilitate the creation of new channels that modify consumer shopping habits and behavior, from viewing products on the web in the comfort of their home, to using digital devices as in-store shopping assistants (Juaneda, Mosquera & Sierra, 2016; Nielsen, 2016).

According to the World Economic Forum, the number of technological devices connected to the Internet exceeds the number of people, reflecting a surplus vertical increase since the entry into the fourth digital generation (Cutten & Cousins, 2021). In Ecuador, almost 67% of companies have invested in information and communication technologies, with the highest investment being in the commerce sector with around 74% according to the National Institute of Statistics and Census (INEC, 2015). In other words, new technologies are considered a fundamental resource for companies not only to maintain effective communication with their customers but also to identify their behavior and activity patterns in order to generate adequate information and key elements for decision making in strategic areas of the organization (Cutten & Cousins, 2021).

However, Cano (2018) mentioned three fundamental aspects for its implementation to generate positive effects in the organization: to have deep knowledge of the company's processes, to plan in detail the information technology needs, to incorporate new technologies gradually from the most basic.

Undoubtedly, the Customer Service area is strategic for any organization, responsible for building customer loyalty, since a satisfied customer is not very sensitive to offers from competitors (Mateos, 2019), is willing to pay a higher price and becomes a spokesperson for the company (Fernandez, 2014). However, today they are more demanding in their demand, because new technologies favor them in several aspects such as: efficient search for offers in national and international markets, interconnection with peers to share shopping experiences, similar product and service features. Aspects that make the quality of service, a preceding factor of customer satisfaction (Molina, 2008), a determinant of competitiveness, maintenance and survival of the organization (Sánchez-Hernández, Castro, Juárez, & Rivas, 2011).

There is extensive marketing literature on this factor applied to large and medium-sized companies from different productive sectors in terms of background, dimensions and measurements (Vieira, 2010). This, has allowed obtaining standardized measurement instruments such as SERVQUAL, SERVPERF, HiEdQUAL, Six Sigma, Image Model, Servuction, 4Q Model (Oliva & Gómez, 2014). In addition, authors emphasize the application of the SERVQUAL model as a valid instrument to evaluate the relationship of the use of information technologies with the perception of service quality (Contreras & Martínez, 2017; Moros, 2010; Servera, Gil & Fuentes, 2009). Some considering the use of ICTs as a moderating variable of the relationship and others as a predictor variable, but both with positive results on the perception of service quality.

However, for retail trade there are limited efforts to study this relationship between variables (Gil, Ruiz & Calderón, 2009; Molina, 2008; Vieira, 2010), which conclude that not all technological applications are valued equally by customers in the different sectors of retail activity. On the other hand, the authors warn of the danger of overinvestment in technology, with quality of service and customer satisfaction being fundamental indicators for determining the appropriate level of technology. In this sense, studies have been conducted to analyze satisfaction with web sites, the technology of service companies, and distribution logistics. In the end, researchers suggest the need to continue with field research, especially with specific technological development and a certain type of establishment (Gil, Ruiz & Calderón, 2009).

Therefore, this research will determine the relationship between the use of new technologies and the quality of service in commercial retail companies, since it is observed that adapting technology to the customer's needs will provide a better perception of service quality, a result that is expected to be confirmed with the data collected in the field of study.

Retail trade is defined as the retail trade of products. Some authors define the retailer as the intermediary between the consumer and the supplier (Vieira, 2010), the one that is not part of a base company and the owner makes the main management decisions

(Davies & Harris, 1990). Also, it refers to businesses with activities of selling goods and services directly to the final consumer for personal use (Kotler & Keller, 2016). In addition, a retailer is a business whose highest volume sales come primarily from retailing (Armstrong, Kotler, Merino, & Pintado, 2011).

On the other hand, authors Praharsi, Wee, Sukwadi and Padilan (2014), refer to retail as a chain of stores that are in cooperation with modern management techniques such as supermarkets, hypermarkets and minimarkets. These are made up of two or more outlets and centralize their purchases to take advantage of better volume prices (Armstrong et al., 2011).

According to the way in which the retailer approaches the customer to offer its products, De Vicuña (2008) grouped the retailer into four categories: traditional trade, where the owner directly sells and dispatches; self-service, when the product is on hangers and is paid at a cash register at the exit of the premises; automatic sale, with the use of product vending machines; and online sale, through digital technologies such as a website. Likewise, according to the qualities of the type of commerce performed, Kotler and Keller (2016) classified into six categories: specialized establishments, department stores, supermarkets, convenience stores, pharmacies and parapharmacies, and low-price retailers.

In summary, the literature offers definitions and categories for this productive activity that can be carried out by an individual or a group of establishments in joint cooperation to achieve competitiveness with large organizations, as well as the proliferation of suburban shopping centers and discount stores. Its current scope transcends borders, with the use of new technologies, supported by the global Internet platform, which facilitates the distribution of its products or services, not only to an immediate geographical environment, but also at an international level.

Globally, according to the 2021 report on the United Nations Conference on Trade and Development shows that, despite the decline in global gross domestic product declined to 4.3% in 2020, global retail trade increased 3% even though the retail trade index in the first half of the year showed a historical drop of 10.5 points below the average (Eustat, 2021). The confinement due to the pandemic accelerated the digital transformation through greater use of digital media overcoming the barriers of e-commerce, which led to an increase in online sales worldwide. The leaders in this sector are Amazon with a year-on-year growth of 34.8% by 2020, JD.com with 27.6% and Lowe's with 24.2%. In Latin America, MercadoLibre more than doubled its deliveries per day by 2020 compared to the previous year (Deloitte, 2021).

In Ecuador, statistics reflected in a study conducted by the Ecuadorian Chamber of E-Commerce indicate that 13 out of every 100 respondents started shopping online and 54% reported an increase in their purchase frequency since the COVID-19 emergency. They use new technologies to purchase their products such as messaging by WhatsApp 49%, mobile applications 44%, and by websites 35%. Among the most consumed products are food and non-alcoholic beverages 67%, medicine and health products 50%, prepared food in restaurants 42%. The means of payment selected are credit or debit

card 61%; and cash or bank transfer 37%. 55% of users have experienced that new technologies are useful for these transactions, assuring that they will continue shopping online after the pandemic by 40% and that they will increase their purchases by this means by 40% (CECE, 2020).

Other figures indicate that 46% of retailers in Ecuador are willing to change their modality of work towards e-commerce, but the lack of knowledge of the correct implementation and proper use of new technologies causes insecurity in meeting the quality expectations demanded by their customers and consequently disturbing their customer loyalty. This aspect can negatively affect the relationship between the variables of this study, which justifies the need to verify what type of relationship exists between the variables in the Ecuadorian context. For this, data will be collected in the city of Guayaquil because more than 75% of international trade transits through the Guayas River and the city's port (CCG, 2019). The research is carried out in the following phases: survey of the marketing literature referring to the two variables previously mentioned; field study using the SERVQUAL model measurement instrument adapted to the context; and data analysis in two stages, one descriptive and the other inferential, where the relationship between the variables is tested. The results will help retailers to develop better strategies for the use of new technologies in their businesses in order to ensure the quality of service expected by their customers.

## MATERIALS AND METHODS

This research is developed from the quantitative approach, starting from the literature review, data collection and analysis to contrast previously established hypotheses. It relies on numerical measurement and counting, and by means of statistical methods, patterns of behavior in a population are accurately established (Hernández, Fernández & Baptista, 2003).

Likewise, the scope of the study will be descriptive and correlational. Because it seeks to describe the properties, characteristics and profile of the consumer, and on the other hand it tries to verify the relationship between the use of new technologies with the perception of the quality of service.

The research design is non-experimental, since the independent variable was not deliberately manipulated, but the consumer was observed in the use of new technologies and his perception of the quality of service received. According to Hernández et al. (2003) this type is classified as documentary and field, the latter being the one used for data collection by means of the cross-sectional survey technique. The population considered is the economically active citizens of Guayaquil who are consumers of retail trade, who were identified with a question in the survey. Considering a 5% sampling error and a confidence level of 95%, a sample of 384 cases was obtained. These were collected over a four-week period, using an online survey using digital tools because people spent much of their time in COVID-19 pandemic confinement. Online surveys generate quick responses, but with a low participation rate of less than 10% (Smee & Brennan, 2000), which is why it was disseminated through various media such as mailings,

paid social media campaigns, and instant messaging contacts. In addition, compensatory measures such as expanding the sample, sending reminders, an attractive design Madge (2006).

The measurement instrument has content validity in the literature since it is based on the SERVQUAL theoretical model and adapted to the study context. It was revised in its structure and wording by three researchers in administrative sciences and tested in a pilot survey of 30 people. The observations collected were adapted to the questionnaire consisting of four sections: (1) type of business; (2) perception of the use of new technologies, such as websites, social networks, instant messaging and mobile applications; (3) perception and expectations of service quality measured on a 7-point Likert scale, from 1: strongly disagree to 7: strongly agree; and (4) demographic data of the respondent. The instrument was validated for internal consistency by means of Cronbach's alpha index, giving a result of 0.8, which reflects high reliability. In detail for the dimensions of service quality, we obtained: tangible elements 0.8, reliability 0.7, responsiveness 0.7, security 0.8, and empathy 0.99.

## RESULTS

For the analysis of the data collected, a descriptive phase and a correlational phase are described below. In the descriptive phase, frequency tables were generated to obtain the profile of the consumer and the study variables. It was found that 43% of the respondents were between 26 and 40 years old, and 37% between 18 and 25 years old. The three types of businesses of which they consume are food and non-alcoholic beverages 57%, miscellaneous items, technology and clothing 10%, household appliances 7%.

On the other hand, the arithmetic means of the service quality dimensions of perception and expectation were calculated, obtaining the following gaps: tangible elements 0.02, reliability 0.32, responsiveness 0.88, security 0.25, and empathy 0.10. This indicates that merchants should pay more attention to efficient customer service, use of technology, self-service, online chat. The dimensions in which expectations are met are tangible elements and empathy.

From the inferential point of view, hypotheses for each variable of the perception of the use of new technologies with the dimensions of the quality of service are presented as follows:

H1a: There is a relationship between the use of websites and tangible elements.

H1b: There is a relationship between the use of social networks and tangible elements.

H1c: There is a relationship between the use of instant messaging and tangible items.

H1d: There is a relationship between the use of mobile applications and tangible elements.

The Rho Spearman coefficient was used to test the hypotheses, since it is a measure of ordinal relationship that analyzes the degree of dependence between two qualitative random variables, its value ranges between -1 and 1, indicating whether or not a relationship exists.

At a theoretical significance level of 5% and a reliability level of 95%, Rho Spearman coefficients between 0.157 and 0.389 were obtained, i.e. low values of correlation



between the variables. On the other hand, the level of bilateral statistical significance of each correlation was in the range of 0.000 to 0.002, values lower than the expected significance. With this, it is concluded that the null hypotheses are rejected and the alternative hypotheses are accepted, i.e. there is a relationship between the variables of use of new technologies and the dimensions of service quality in the retail market.

## DISCUSSION

As Gil, Ruiz and Calderón (2009) concluded, there is a positive relationship between the intensity of implementation of information and communication technologies and customer satisfaction with such technology. After the results obtained in this study, it is reaffirmed that this relationship is valid for the retail trade in the city of Guayaquil, although with a low correlation value, perhaps due to the recent use or implementation as an emerging measure of survival to the crisis caused by the COVID-19 pandemic.

Along the same lines of Nielsen (2016), which concluded that today's customers have a digital touch built into the entire shopping process, from searching for products on the stores' website to using smart assistants during online shopping. Respondents to this study felt that service quality is related to the use of technological equipment, new communication channels, social networks and internet, credit/debit card service, security in online shopping, aspects that should be considered by the retailer to take competitive advantage of the market.

On the other hand, 44% of Ecuadorians use instant messaging such as WhatsApp and 49% use mobile applications. In this study the perceived use of instant messaging by the retailer was 52%, but they perceive that only 8% have a mobile application to interact with customers. The idea is to establish partnerships with companies that facilitate the development and implementation of these applications, which will provide them with greater opportunities to offer their products or services.

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