Quality, satisfaction and loyalty in the emergency service of public hospitals, from the central zone of Ecuador

Calidad, satisfacción y lealtad en el servicio de emergencias de hospitales públicos, de la zona central del Ecuador

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Abstract
This study seeks to analyze in a holistic way the satisfaction of patients who make use of emergency services of public hospitals in the central zone of Ecuador, one of the most sensitive areas which is under constant scrutiny by users and physicians whoever give continuity to the treatment of patients. Through structural equations modeling (SEM) it was evidenced that there is a positive and significant relationship between the quality of service and satisfaction, as well as between the latter and the loyalty of the users. There was no direct relationship between the quality and the loyalty of the patients. These results highlight the importance of these variables for the integral evaluation of the satisfaction and loyalty of the clients of an organization.

Keywords: service quality; satisfaction; loyalty.

Introduction
Marketing professionals have highlighted the importance of quality service and satisfaction for the survival and success of companies in a marketplace (Marković, Lončarić & Lončarić, 2014) since these are configured as the basic pillars for the loyalty of a client (Setó Pamies, 2003), a fundamental characteristic to obtain competitive advantage and positive influence on its performance (Ishaq, 2012). Based on this, the evaluation and analysis of these concepts have been extended to the non-profit sector, specifically those that provide health services since the evaluation of patient satisfaction with health services has gained great popularity as a measure of quality in the provision of public health services (Loureiro & González, 2010). In addition, according to Sahoo and Ghosh (2016) in the last decade, the services of the health industry have undergone dramatic changes due to higher expectations of patients, technological advances, greater access to information about the health area through digital means and a holistic approach related to the healthcare and well-being in general.

Regarding all the health services offered in a hospital, the emergency service has experienced the most profound and rapid changes (Loureiro & González, 2010). It also has characteristics that clearly differentiate it from other health services due to a high level of complexity that is outside the technical-scientific understanding of patients making them intolerant to poor quality health services, which causes the emergency service be under constant scrutiny both of users who use these services and from the physicians who will continue assisting the patient. In addition, the demand for a better quality in health service has been increasing, generating pressure to the providers of this type of service (Fatima, Malik & Shabbir, 2018). Under
this context, the need to analyze the quality and satisfaction of emergency services is viewable. In this research, the variables were analyzed based on the paradigm of disconfirmation that established satisfaction is the result of a process of comparison between expectations and the service received (Oliver & DeSarbo, 1998). According to Fornell (1995) quality should be understood as the current perception of the client about the performance of a good service while satisfaction is based on new and past experiences as well as future predictable experiences of the client, which come from accumulated experiences in combination with the projection of their expectations. In this study the relationships between these variables will be analyzed in order to obtain a holistic evaluation of the user's satisfaction of the emergency service in public hospitals.

**Literature review**

**Quality Service and Satisfaction**

Satisfaction is defined as the perceived difference between the expectation and performance of a service or product (Oliver, 1980). It is usually related to the final stage of an acquisition process when the consumer evaluates the perceived benefits of the service purchased subjectively (Oliver, 2014). The comparison between expectation and performance is based on the Theory of Confirmation of Expectations (Hoffman & Bateson, 2011) which establishes that the client is satisfied when the real performance of a service matches the client’s expectations; however, if the perceived return is lower or higher than the expectation, a negative or positive disconfirmation is created respectively.

According to Parasuraman, Zeithaml and Berry (1988), consumer satisfaction is defined on several perspectives such as quality of service and price, which has led authors to affirm that quality of service is a precedent for satisfaction since an improvement in the first one produces a significant increase in the second (Ahrholdt, Gudergan & Ringle, 2017; Manzor et. Al., 2019; Pandža Bajs, 2015). In the same line of research, Almomani, Al-Ghdabi and Banyhamdan (2020) demonstrated that there was a statistically significant effect of health service quality dimensions on patient satisfaction in public hospitals, with a sample of 354 patients. This result is similar to that obtained by Javed et al. (2019), in their study carried out on a representative sample of patients from two private hospitals and two public hospitals.

However, quality service cannot be evaluated with a single dimension (Kaura, Prasad & Sharma, 2014) for this reason several authors have defined this concept from several perspectives. Gronroos (1984) identified three dimensions of quality service: functional, technical and corporate image. Parasuraman et. al. (1988) reported the existence of five dimensions: reliability, sensitivity, security, empathy and tangibility. Rust & Oliver (1993) proposed three dimensions: functional, technical and environmental. Each dimension of quality reflects a set of service attributes that consumers consider when evaluate the quality of that service dimension and the perception of the influence of the different service dimensions over satisfaction (Ahrholdt et. al., 2017) which is
supported by other researches (Bansal & Taylor, 2015; Kim et. al. 2017; Kushwana Mohan & Mandal, 2013). Based on this, the following hypothesis is presented:

\[ H1: \text{Service Quality Influences Consumer Satisfaction with a public Hospital’s Emergency services.} \]

**Consumer Loyalty**

In today’s context organizations besides to provide high quality services, they must to promote loyalty in their clients since they are the ones who directly influence the long-term benefit of an organization (Rajeswari, Srinivasulu & Thiyagarajan, 2017). The loyalty of a consumer is defined as the willingness of the customers to make repeated purchase of a service accompanied by a psychological link through which they maintain a favorable attitude toward that service or to the organization that provides it (Yeo, Thai & Roh, 2015). In the present study, loyalty refers to the willingness of a patient to re-use the services of a hospital where he or she has previously been treated or recommend these services to others (Kim et. al., 2017).

In order to increase loyalty, it is necessary to improve consumer satisfaction (Akbar et. al., 2020; Raza et. al, 2020). The academic literature related to Marketing indicates that around half of satisfied consumers return to buy or reuse services suggesting the need to create closer relationships with them (Zeithaml, Berry & Parasuraman, 1996). This statement is corroborated by several studies such as the one developed by Paparoidamis, Chumpitaz and Ford (2015) who showed that satisfaction mediates the between quality of service with loyalty, which allows intuiting the direct connection between satisfaction and loyalty; a finding similar to that obtained (Son & Lee, 2011). On the other hand, Baker and Crompton (2000) as well as Lee, Huh & Hong (2008) demonstrated that satisfaction positively influences consumer loyalty. As established Son et. al. (2011), the high quality of performance and levels of satisfaction generate greater loyalty and tolerance to price increases, as well as a better reputation of the organization, a key factor for organizations that offer health services.

These findings also reveal the relationship between the quality of service and consumer loyalty. According to Lai, Griffin and Babin (2009) quality is a determining factor of loyalty, a statement that agrees with that expressed by Ismail and Yunan (2016) for whom quality of service favors the user's intention to reuse the service, generating greater loyalty; In addition, several studies have shown that loyalty is an important result of the relationship between quality of service and satisfaction. Based on the above, the following research hypotheses are proposed:

\[ H2: \text{Satisfaction positively influences consumer loyalty with a public Hospital’s Emergency services.} \]

\[ H3: \text{Quality service positively influences consumer loyalty with a public Hospital’s Emergency services.} \]
Methodology

In this study, a convenience sampling was used, obtaining a sample of 300 patients who used the services of the emergency area of two public hospitals in the center of Ecuador. According to Shah and Goldstein (2006) this sample size is considered enough to apply the SEM technique used. These hospitals have an average care rate of 800 patients per day in different specialties. During the previous year, more women (59%) than men (41%) received care. The majority of cases treated in the Emergency area are related to wounds and traumatisms, however, the Hospital is capable of treating a large number of emerging diseases.

To measure each of the variables the scale proposed by Loureiro and González (2010) was used where quality was measured with 9 items, satisfaction with 6 items and loyalty with 3 items each of them evaluated on a Likert scale from one to five, where one is equivalent to the category "totally disagree" and five to "totally agree". The data was obtained from a survey application to patients who used the emergency service of these hospitals, who gave the corresponding authorization. In cases in which they were not able to answer the survey directly, the help of their companions was requested. The data collection was done in a period of two months with patients who were willing to cooperate in the study. The reliability, goodness of fit and validity of each of the scales used was verified, while hypothesis testing was carried out using structural equation modeling (SEM).

Discussion and Results

The study sample consisted of 300 users of the emergency service. Of this group, 49% were men while 51% were women. Regarding the level of education, 42% have a level of studies at the baccalaureate level and 29% at the primary level. Only 21.7% have a third level academic degree (Bachelor's Degree or Engineering). The majority of respondents were treated for blows or fractures and to a lesser extent for infections and respiratory diseases.

Once the survey responses were tabulated, an exploratory data analysis was carried out to identify missing data, outliers or outliers and the verification of the assumptions of normality, linearity and homoscedasticity of the variances. The analyzes were carried out with the SPSS version 24 software and its AMOS complement for the analysis of the structural equation models. The results revealed that all the assumptions were met and there were no problems with missing data and outliers. To verify the reliability analysis, the composite reliability index (composite reliability) was used. Table 1 shows the composite reliability index for each of the latent variables analyzed and, as can be seen, all the constructs have a value greater than 0.70, so it can be concluded that all the scales are reliable.
To evaluate the convergent validity, the procedure established by Hair et al. (2010) was used. For these authors a model presents convergent validity when the estimated standardized coefficients are greater than 0.50 and the average variance extracted AVE, is greater than or equal to 0.5. In addition, all the estimated coefficients between the observable variables and their underlying construct must be significant (p-value <0.05). As can be seen in Table 2, the aforementioned criteria are met for all the observable variables, as well as for the latent variables, so the convergent validity criterion is met.

Table 2

**Convergent Validity of the Measurement Model**

<table>
<thead>
<tr>
<th>Variables and Items</th>
<th>Standardized Parameter</th>
<th>AVE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Quality</strong></td>
<td></td>
<td>0.59</td>
</tr>
<tr>
<td>Quality9</td>
<td>0.701</td>
<td></td>
</tr>
<tr>
<td>Quality8</td>
<td>0.508</td>
<td></td>
</tr>
<tr>
<td>Quality7</td>
<td>0.527</td>
<td></td>
</tr>
<tr>
<td>Quality6</td>
<td>0.51</td>
<td></td>
</tr>
<tr>
<td>Quality5</td>
<td>0.67</td>
<td></td>
</tr>
<tr>
<td>Quality4</td>
<td>0.629</td>
<td></td>
</tr>
<tr>
<td>Quality3</td>
<td>0.501</td>
<td></td>
</tr>
<tr>
<td>Quality2</td>
<td>0.717</td>
<td></td>
</tr>
<tr>
<td>Quality 1</td>
<td>0.552</td>
<td></td>
</tr>
<tr>
<td><strong>Satisfaction</strong></td>
<td></td>
<td>0.67</td>
</tr>
<tr>
<td>Satisfaction1</td>
<td>0.575</td>
<td></td>
</tr>
<tr>
<td>Satisfaction 2</td>
<td>0.751</td>
<td></td>
</tr>
<tr>
<td>Satisfaction 3</td>
<td>0.748</td>
<td></td>
</tr>
<tr>
<td>Satisfaction 4</td>
<td>0.565</td>
<td></td>
</tr>
<tr>
<td>Satisfaction 5</td>
<td>0.745</td>
<td></td>
</tr>
<tr>
<td>Satisfaction 6</td>
<td>0.688</td>
<td></td>
</tr>
<tr>
<td><strong>Loyalty</strong></td>
<td></td>
<td>0.68</td>
</tr>
<tr>
<td>Loyalty1</td>
<td>0.794</td>
<td></td>
</tr>
<tr>
<td>Loyalty 2</td>
<td>0.704</td>
<td></td>
</tr>
<tr>
<td>Loyalty 3</td>
<td>0.568</td>
<td></td>
</tr>
</tbody>
</table>
Once the convergent validity was verified, the discriminant validity of the measurement model was analyzed. For this, the procedure proposed by Hair et al. (2010) through the estimation of the average variance extracted AVE, was used. In Table 3, it is observed that the estimated AVE value of each construct is greater than the square of the correlation between each pair of latent variables, so it can be concluded that the discriminant validity criterion is met.

### Table 3

**Discriminant validity**

<table>
<thead>
<tr>
<th></th>
<th>Quality</th>
<th>Satisfaction</th>
<th>Loyalty</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quality</td>
<td></td>
<td>0.119</td>
<td></td>
</tr>
<tr>
<td>Satisfaction</td>
<td>0.119</td>
<td>0.443</td>
<td>0.188</td>
</tr>
<tr>
<td>Loyalty</td>
<td>0.443</td>
<td>0.188</td>
<td>0.68</td>
</tr>
<tr>
<td>AVE</td>
<td>0.59</td>
<td>0.67</td>
<td>0.68</td>
</tr>
</tbody>
</table>

**Structural Model**

Figure 1 shows the simplified model of the relationships that were analyzed:

### Figure 1

**Structural model**
Model fit was evaluated through the CFI, RMSEA, Chi-Square test, and CMIN-DF index, which according to Kline (2016) should be reported. In addition, the GFI and AGFI index proposed by Chiôn and Vincent (2016) are also reported. The model shows an acceptable fit since the indexes comply with the required thresholds except for GFI Index which is close to the limit value.

Table 4

**Structural Model Fit Indices**

<table>
<thead>
<tr>
<th>Index</th>
<th>Value</th>
<th>Acceptance level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chi-Square</td>
<td>474.483 (p-value=0.000)</td>
<td>P-value &gt; 0.02</td>
</tr>
<tr>
<td>Gl</td>
<td>129</td>
<td>≥ 0.90</td>
</tr>
<tr>
<td>CFI</td>
<td>0.93</td>
<td>≤ 0.06</td>
</tr>
<tr>
<td>RMSEA</td>
<td>0.055</td>
<td>&gt; 0.90</td>
</tr>
<tr>
<td>GFI</td>
<td>0.869</td>
<td>&gt; 0.80</td>
</tr>
<tr>
<td>AGFI</td>
<td>0.814</td>
<td>&lt; 5</td>
</tr>
<tr>
<td>CMIN/DF</td>
<td>3.678</td>
<td>&lt; 5</td>
</tr>
</tbody>
</table>

In order to verify the hypotheses proposed, the correlation coefficients between the latent variables were analyzed. The results allow us to conclude there is a positive and significant correlation (0.55, p-value <0.05) between the service quality and satisfaction which allows us to accept the hypothesis H1. The relationship between Satisfaction and Loyalty is also high and significant (0.595, p-value <0.05) allowing the acceptance of H2 hypothesis. However, the relationship between Quality and Loyalty is negative and not significant (-0.463; p-value> 0.05), making hypothesis H3 not accepted.

The reported findings confirm the results obtained in other investigations (Akbar et. al, 2020; Bansal & Taylor, 2015; Kim et. al., 2017; Kushwana et. al., 2013; Son & Lee, 2011). However, it was evident that there is no direct relationship between Service Quality and Loyalty, which contradicts what was stated by Lai, Griffin and Babin (2009) and, Ismail and Yunan (2016), which could be explained by the mediating effect that causes satisfaction as demonstrated Paparoidamis et. al. (2015) and Son et. al. (2011). Service quality positively influences Loyalty as long as users are previously satisfied with the service they have received.

This study has important practical implications for hospital management. First, the results reveal the importance of improving patient satisfaction levels if their loyalty is to be maintained. It is not enough to focus on quality aspects but to complement them with care that is articulated to the real needs of patients. In the second instance, the leaders of the organization must implement awareness programs focused on the development of prosocial behaviors that guarantee the provision of better quality care that allows increasing patient satisfaction.
Conclusions

The purpose of this research was to analyze how service quality, satisfaction and loyalty are related in the emergency services offered in a hospital. This sector was chosen due by the necessity to have a tool that allows an integral evaluation of the users satisfaction of these services, and increasing demand of the users for a better health service. The study was applied in a sample of 300 patients and the results obtained allowed to conclude that the quality of service influences the satisfaction of the users and at the same time positively, this last variable influences the loyalty towards the health organization. No evidence was found of a direct relationship between quality and loyalty, which may be due to the possible existence of a mediating effect of satisfaction between these variables. In future studies it is recommended to analyze this mediating effect as well as to expand the sample to verify the reliability and validity of the results obtained.

Bibliographic References


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