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Service quality and perceived value as of customer satisfaction antecedents of telecommunication companies in Colombia

Calidad de servicio y valor percibido como antecedentes de la satisfacción de los clientes de las empresas de telecomunicaciones en Colombia

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Abstract

Despite the different criticisms received by the Zeithaml, Parasuraman and Berry model, the SERVQUAL is valid and has shown that the service quality is a satisfaction's customer precedent. To the Colombia's telecommunications sector, where are few companies with a high imitation offers, to understand if their customers are satisfied, their service perceptions and the value their clients perceive, has become competitive factors. The present study proposes a model that explains how expectations (EXP), service quality (QS), and perceived value (VP) affect the satisfaction (SAT) construct of Colombia's fixed telecommunications companies. Empirical data was obtained from 324 users in the country's main cities by virtual questionnaire. The 5 suggested hypotheses were tested using structural equation models by PLS-SEM. The findings show the relevance of SERVQUAL to explain the service quality construct and its relationship with the satisfaction. Given the limited research on these constructs in this sector, this research is a contribution to the literature.

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Resumen

A pesar de las diferentes críticas que ha recibido el modelo SERVQUAL propuesto por Zeithaml, Parasuraman y Berry, este aún sigue vigente y ha permitido mostrar que la calidad de servicio es antecedente de la satisfacción de los clientes. Para el sector de las telecomunicaciones en Colombia, donde las empresas son pocas, pero con una alta imitación de ofertas, el entender si sus clientes están satisfechos, cómo perciben los servicios y qué valoran más de ellos, se ha vuelto en factores de competitividad. Es así como el presente estudio, propone un modelo que explica cómo influyen las expectativas (EXP), la calidad de servicio (QS), y el valor percibido (VP) en la satisfacción (SAT) de los clientes de las empresas de telecomunicaciones fijas en Colombia. Se obtuvieron datos de 324 usuarios en las principales ciudades del país, con un cuestionario virtual. Las 5 hipótesis sugeridas se probaron utilizando modelos de ecuaciones estructurales por PLS-SEM. Los hallazgos evidencian la pertinencia del SERVQUAL para explicar la calidad de servicio y que la satisfacción está influenciada directamente por dicho constructo y el valor percibido. Esta investigación es una contribución de la literatura dada la poca investigación sobre estos constructos en dicho sector y país

Código JEL: M00, M30, M31
Palabras clave: SERVQUAL; satisfacción; valor percibido; marketing; telecomunicaciones

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Introduction

Nowadays, companies must concentrate their efforts and direct their resources to find out about their customers; that is, knowing what they expect and how they perceive the services offered (Tsafaraski, Kakotas, & Pantouvakis, 2018). Based on the above, these companies must move from a goods management ethos to a service one by implementing strategies focused on customer satisfaction (Zeithaml, Bitner, & Gremler, 2009), transitioning to relational marketing. For the above, factors such as service quality and perceived value must be considered to achieve differentiation from the competition (Tsafaraski et al., 2018).

For the telecommunications sector, this ethos focused on the customer is equally essential and even more so in a country like Colombia, where the sector has an increasing number of competitors (Algarra, 2018), which incur high fixed costs and frequently copy each other's services. Furthermore, there has been an increase in the use of the services with good results (Combariza, García, Alvarado, España, & Rivera, 2012). Additionally, the sector is highly dynamic, with a growing demand for fixed broadband connections and plans increasingly adapted to customer needs (Combariza et al., 2012).

Despite such dynamism, there has been a decrease in the demand for fixed home services since 2011, given the change to mobile services (MINTIC, 2016) reflected in 35 million Colombians having changed from one operator to another by 2015 (El Tiempo, 2015). Therefore, companies should seek to satisfy their customers so that they may change the type of service but not the operator, which can be achieved by providing a good quality of service and exceeding customer expectations (Zeithaml et al., 1991). Additionally, they should review other satisfaction points of reference, such as perceived value (Lam, Shankar, Erramilli, & Murthy, 2004), which is considered a more complete service evaluation factor (Bolton & Drew, 1991).

Given the above, this study proposes a conceptual model that shows the customer satisfaction points of reference of telecommunication companies in Colombia's main cities, such as service quality, adapting the SERVQUAL model, and perceived value. The first part presents the literature review, highlighting sectors such as banking, health, education, and tourism (López & Serrano, 2001; Naik, Gantasala, & Prabhakar, 2010; Yépez, Ricaurte & Jurado, 2018), and the telecommunications sector, with studies at the international level (Boohene & Agyapong, 2011; Arslan, Iftikhar & Zaman, 2014; Bustamante, 2015). Thus, it contributes to studies in this field in a Colombian sector where no previous research of this type was identified. The second part details the methodology, followed by a discussion of the results and ending with conclusions and implications for future research.

Theoretical framework

Expectations

In a competitive market with many suppliers, consumer expectations arise according to the alternatives presented to them (Naumann, Williams, & Khan, 2009). This construct is defined as a frame of reference to predict what will happen in a new interaction with the company, thus attaining ideal, desired, or suitable service levels (Churchill Jr. & Surprenant, 1982); Berry, Zeithaml, & Parasurama, 1991; 1993; Zeithaml, Bitner, & Gremler, 2009; Vigg & Bhargav, 2014).

This construct's importance is apparent in its impact on the customer's evaluations after using the service (Nath, Devlin, & Reid, 2018). The above has been suggested in studies that propose that expectations serve to implement strategies that provide a superior service (Parasuraman et al., 1991; 1993). There is something similar for the telecommunications sector, where it is suggested that suppliers focus on activities that help meet or exceed customer expectations (Vigg & Bhargav, 2014).

Service quality

The evaluation of service quality stems from the customer's opinion, who informs the company whether it offers a service of high or low quality (Strenitzerová & Gaňa, 2018). Therefore, this factor is understood as the comparison between the expectations and the experience that the customer has of the service (Parasuraman et al., 2985; Grönroos, 1984; Berry et al., 1985; Bolton & Drew, 1991; Boohene & Agyapong, 2011; Vigg & Bhargav, 2014). Furthermore, when it comes to evaluating this quality, cognitive responses are given on aspects of service attributes, such as the tangible and the interactive aspects of the employees (Chiou & Droge, 2006).

This study accepts the definition of Parasuraman et al. (1985; 1993), given its acceptance in many economic sectors, and because it contains factors such as expectations and perception of service. Additionally, its definition has aspects adaptable to the context of telecommunications, such as the five determinant dimensions of service quality. Therefore, service quality is defined as the customer's overall judgment of the superiority of the service, which results from comparing their expectations and perceptions of the service offered.

Table 1 below lists the five determinant dimensions of service quality.

Table 1
SERVQUAL dimensions

Dimension	Definition
Reliability	The ability to offer a reliable and consistent service
Responsiveness	Willingness to provide a flexible and helpful service to users
Assurance	Employee preparedness, courtesy, and ability to convey confidence and trust
Empathy	Provide individual and personalized care and attention to customers
Tangibility	The appearance of physical facilities, equipment, personnel, and materials for communications

Source: Parasuraman et al., (1985; 1993)

Many studies have evaluated service quality using SERVQUAL. In Venezuela for the telecommunications sector, and in Colombia for the hotel, health, and education sectors, there is evidence that the best way for customers to choose a company is to improve the quality of its services (López & Serrano, 2001; Wang, Lo, & Yang, 2004; Valdunciel, Flórez, & Dávila, 2007; Losada & Rodriguez, 2007; Pineda, Estrada, & Parra, 2011; Boohene & Agyapong, 2011; Vergara, Quesada, & Blanco, 2011; Galbán, Clemenza, & Araujo, 2013; Bustamante, 2015; Meesala & Paul, 2018; Yépez et al., 2018). There have been no adaptations of SERVQUAL for telecommunications in Colombia.

Relationship between expectations and service quality

Some studies have demonstrated that a determinant factor of overall service quality is the gap between service performance and expectations (Bolton & Drew, 1991; Parasuraman et al., 1991; 1993). Therefore, the construct "expectations" is a service quality point of reference and positively affects perceived performance (Spreng & Mackoy, 1996).

Choice of the SERVQUAL model to evaluate service quality

The SERVQUAL model has received criticism from some authors, including Cronin and Taylor (1992; 1994), who propose the SERVPERF model without expectations. However, despite the omission of that factor in the model, they suggest the existence of the construct by recognizing its difference compared to satisfaction. Furthermore, although there has been an attempt to demonstrate one model's superiority over the other, both SERVPERF and SERVQUAL have similar predictive power (Miranda, Tavares, & Queiró, (2018). There is evidence that the implementation of SERVQUAL is possible in multiple contexts worldwide (e.g., Vigg & Bhargav, 2014; Strenitzerová & Gaňa, 2018) without implying instability in the dimensions.

There are models to review service quality and its relationship with factors such as expectations and satisfaction that support the above. Many of these have adaptations of the SERVQUAL model to the specific sector's conditions to be evaluated. On the one hand, there is the MUSA model (Tsafaraski et al., 2018). There is also the EVENTQUAL model of Roca, Cabello, González, and Courel (2018) for sporting mega-events. Finally, Miranda et al. (2018) extend the SERVQUAL model to the railway industry. Therefore, this study accepts the SERVQUAL model and adapts the dimensions to the telecommunications sector in Colombia, establishing the following hypothesis:

H1: Expectations have a positive and direct influence on the service quality offered by telecommunications companies.

Satisfaction

Umar and Bahrun (2017) define satisfaction as the evaluation following the comparison between expectations and the customer's purchase experience. This construct is conceived as the attitude toward the sum of satisfactions with the attributes present in a service (Churchill Jr. & Surprenant, 1982; Bolton & Drew, 1991; Carrizo-Moreira, Freitas-Da Silva, & Ferreira-Moutinho, 2017). Also, it is an essential

factor in the repurchase of products—specifically when there is intangibility, and it becomes an element that increases when service performance exceeds expectations (Meesala & Paul, 2018).

Therefore, satisfaction is based on the pleasure produced by consumption, when a need is met, and a pleasant sensation or feeling arises compared to a pattern of pleasure or displeasure (Oliver, 1999a; Kim, Park, & Jeong, 2004). Additionally, dissatisfaction (expectations versus experience) demonstrates whether satisfaction is high or low when expectations exceed or fall below what the customer expected (Churchill Jr. & Surprenant, 1982; Bolton & Drew, 1991; Boohene & Agyapong, 2011).

Relationship between expectations, satisfaction, and service quality

The existence of relationships between expectations, satisfaction, and service quality has been proven worldwide (Oliver, 1980; Churchill & Surprenant, 1982; Parasuraman et al., 1985; 1993; Bolton & Drew, 1991; Spreng & Mackoy, 1996; Arslan et al., 2014; Miranda et al., 2018; Vijayakumar & Shivdas, 2018). In Latin America, these relationships have also been demonstrated with works such as that of Bustamante (2015), who suggests that providing poor service creates an unsatisfactory customer experience. It is necessary to offer a consistent set of satisfactory experiences to obtain a positive service quality evaluation (Galbán et al., 2013). Therefore, quality dimensions should be used to achieve customer satisfaction (Tsafaraski et al., 2018).

On the other hand, when it comes to the utility generated by the service, technical quality is the one that produces satisfaction; when something is emotional, satisfaction is derived from the interaction with the service personnel (Chiou & Droge, 2006; Kasiri, Cheng, Sambasivanc, & Sidin, 2017). There is evidence of such relationships for the telecommunications sector provided by the adaptation of the SERVQUAL model, which highlights aspects ranging from network quality, call quality, price structure, and the responsiveness of employees (Wang et al., 2004; Park & Jeong, 2004; Boohene & Agyapong, 2011; Rahhal, 2015). There are no specific studies on these relationships in the Colombian telecommunications sector, although there are for the banking sector (Valdunciel et al., 2007).

Given the above, the following hypotheses are established:

H2: Expectations directly and positively influence customer satisfaction with telecommunications companies.

H3: Service quality has a direct and positive influence on customer satisfaction with telecommunications companies.

Perceived value

Perceived value is an evaluation that assesses the benefits and sacrifices incurred by a customer using the service, and which contains both an affective (Escamilla & Núñez, 2014) and a cognitive (Lam et al., 2004) dimension. This is because the sacrifices or costs can be both monetary and non-monetary (effort, time) and are compared with a frame of reference of the customer (Zeithalml, 1988; Bolton & Drew 1991; Ravald & Grönroos, 1996). On the other hand, Oliver (1999b) suggests, based on models by Zeithaml, that value is a positive function of what is received and a negative function of what is sacrificed.

Therefore, value is an evaluation with several facets. On the one hand, from a relative point of view, by involving customer preferences that become elements to communicate a judgment through the services; on the other hand, from experience, because value not only depends on the purchase itself, but also on the experiences derived from consumption (Holbrook, 1999). Furthermore, Konuk (2018) suggests that utility and costs are essential components of that perceived value, and a low price can also increase the value perceived by the customer.

Relationship between perceived value, satisfaction, and service quality

Companies can offer value to the customer by trying to improve customer satisfaction and by considering in their strategy not only what they offer to them but also what the customer sacrifices to access the product or service (Zeithaml, 1988; Bolton & Drew, 1991; Ravald & Grönroos, 1996; Taylor & Hunter, 2003). Studies worldwide have demonstrated the relationship between perceived value, satisfaction, and service quality (e.g., Konuk, 2018; Vijayakumar & Shivdas, 2018). In Colombia, no studies demonstrate the relationship between these constructs in the telecommunications sector. The studies available for the country deal with the health and education sectors (Vergara & Quesada, 2011; Bentacur, Montoya, & Tavera, 2017).

Despite the above, international research for this sector has demonstrated a direct relationship between service quality and perceived value. The satisfaction construct also enters into the relationship with service quality but is mediated by perceived value. The argument is based on the fact that customers will not feel satisfied with a quality offer if they value another service attribute not included in that quality. Therefore, the impact on satisfaction will depend not only on quality service, but this construct will be worthwhile if customers see in it an improving value (Want et al., 2004; Bustamante, 2015).

Given the above, the study establishes the following hypotheses:

H4: Service quality directly and positively influences the perceived value of the customer of telecommunications companies.

H5: The customer's perceived value directly and positively influences the "satisfaction" of the customer of telecommunications companies.

Methodology

Measurement variables

For the measurement of the "expectations" and "service quality" constructs, the SERVQUAL model of Parasuraman et al. (1985; 1993) was adapted, and 22 items corresponding to perception and five items per dimension were used to evaluate expectations. The "satisfaction" construct had five items (Taylor & Hunter, 2003; Wang et al., 2004; Kim et al., 2004; Chiou & Droge, 2006; Bustamante, 2015). Finally, there were five items for the "perceived value" factor (Sirdeshmukh et al., 2002; Wang et al., 2004). The variables were adapted to the telecommunications context and were measured using a 5-point Linkert scale for all constructs ranging from 1 = strongly disagree to 5 = strongly agree.

On the other hand, the content validity for the measurement scales was carried out with a pilot survey administered to experts in the constructs studied. These experts belong to the Universidad de Antioquia and to the Instituto Tecnológico Metropolitano. Additionally, the pilot survey was administered in the real sector, specifically to some members of a Colombian telecommunications company's customer service area to which the researcher belonged.

Sample and procedures

The study comprised two phases. The first consisted of the literature review. The second was a simple cross-sectional descriptive phase to explain the study phenomenon through partial least squares structural equation modeling (PLS-SEM) and statistically measuring the relationships between the proposed constructs. The selected sample and the corresponding procedures are described below.

In Colombia, for the first quarter of 2017, there were 17,034,012 people with access to fixed telecommunications (television: 4,081,361; fixed internet: 6,053,127; landline telephone: 6,899,524). The cities with the highest number of basic landlines and with the highest fixed internet penetration rate were Bogotá (more than 7,000,000; 21.8%), Medellín (more than 2,000,000; 15.9%), Cali (more than 1,500,000; 14.1%), and Barranquilla (more than 700,000; 12.1%), which are the main cities in the country. Given the above, the sample size was non-probabilistic at the discretion and convenience of the researcher. This criterion is due to the large population size, which implies difficulties in covering a random

probability sample. Additionally, it was necessary to segment the population and make it available in the country's main cities.

A virtual survey was also chosen for data gathering, which consisted in contracting the company Código E-marketing to send 100,000 mailings of the survey to the country's main cities, with a segment of people with fixed telecommunications services. These 100,000 mailings resulted in a sample of 324 customers (70% belonging to the metropolitan area of Medellín; 22% to the metropolitan area of Bogota; the rest divided between Cali and Barranquilla). This sample is significant given the number of constructs studied and the data collection conditions because it took place during a difficult time of the year due to the Christmas season, vacations, and the respondents' return to their jobs.

The people who answered the survey are of legal age, between 25 and 49 years old (86%), single (34%) and married (24%), employed (91%), with an income level between MXN $4,519 (COP $737,717, the minimum wage in Colombian pesos for 2017) and MXN $27,568 (COP $4,500,000) (77%), and with a master's degree or Ph.D. (83%). Table 2 presents the technical data sheet of the study.

Table 2
Technical datasheet of the study

Sampling unit	Users of fixed telecommunications services of legal age (>18 years)
Area of study	Medellín, Bogotá, Cali, Barranquilla, and their metropolitan areas
Data gathering method	Mailing a virtual survey
Sampling procedure	Convenience and judgment
Sample size	n=324
Confidence level	95%
Sampling error	5%
Date of fieldwork	Between December 2016 and February 2017

Source: created by the author

The statistical software SPSS 23 was used for the results and descriptive analysis. Additionally, a Partial Least Squares Structural Equation Model was used to test the hypotheses using SmartPLS 3.0 (Ringle, Wende, & Becker, 2015). The choice of PLS-SEM is due to the proposal of a new object of study and a new measurement instrument for the Colombian telecommunications sector (Aldás, 2017), which presents enough items to measure the four constructs of the model (36 items), and contains formative dimensions and reflective variables (Chin, 1998; Hair et al., 2017).

Presentation and analysis of results

The proposed model, SERVQUAL, contains formative dimensions and is a second-order factor, implying possible PLS-SEM analysis drawbacks (Aldás, 2017). The service quality construct is a non-observable

factor, without associated elements or variables, as the indicators are what cause this factor and not the other way around. The solution to the above was to eliminate the service quality construct and allow the five dimensions of SERVQUAL to send the structural relationships directly to the rest of the constructs with which it has a relationship (Hair et al., 2017; Aldás, 2017). Then came the estimation of the model without the second-order construct, preserving its structural relationship by keeping the dimensions' factor values and then using them as elements to form that construct. The analysis of the final model by PLS-SEM followed. The criteria considered for the analysis of the results with PLS-SEM are listed below.

Table 4
Criteria for PLS-SEM indicators

Validation stages	Indicator	Criterion	Source
Criteria for reflective constructs	Cronbach alpha (CA)	=> 0.7	(Nunnally & Bernstein, 1994)
	Composite Reliability (CR)	=>0.7	(Fornell & Larcker, 1981)
	Convergent validity: Average Variance Extracted (AVE)	=>0.5	
	Convergent validity: size of loadings and significance level	=>0.6; p<0.001	(Bagozzi & Yi, 1988)
	Discriminant validity: square roots of the average variance extracted (AVE), and the Heterotrait-Monotrait ratio (HT/MT)	=< 0.9	(Chin, 1998)
Criteria for formative constructs	Diagnosis of multicollinearity: variance inflation factor (VIF) and tolerance index (TOL)	=<5 (VIF); => 0.20 (TOL)	(Hair et al., 2017)
	Weight and load analysis: significant weight, loads, standardized coefficients, or significant load	p<0.001	
Criteria for the Structural Model	Determination coefficient (R^2 value).	=<0.75 and => 0.51 relevant, =< 0.50 and => 0.26, moderate, and < 0.25 weak	(Hair et al., 2017)
	Significance level of structural relationships	p<0.001	
	Predictive relevance (Q^2): to ensure normality of the data	> 0	(Stone, 1974; Geisser, 1975; Tenenhaus et al., 2005).

Source: created by the author

Table 5 presents the means, standard deviations (SD), and Cronbach alpha of the SERVQUAL model dimensions.

Table 5
Mean, standard deviation, and Cronbach alpha

Construct	Mean	Standard deviation	Cronbach alpha reliability
Service quality			
Reliability	3.0	1.2	0.888
Responsiveness	2.9	1.1	0.895
Assurance	3.3	1.0	0.894
Empathy	3.1	1.1	0.895
Tangibility	3.6	1.0	0.865

Source: created by the author

Under the criteria in Table 4, the Cronbach alpha confirms the reliability of the five dimensions of the SERVQUAL model.

Model measurement

Table 6 demonstrates the measuring tool's internal consistency and reliability for measuring the reflective constructs analyzed from the acceptable values of Cronbach alpha (CA) and Composite Reliability (CR). It also presents the values corresponding to the convergent validity through values of the average variance extracted. Everything complies with the previously discussed criteria, indicating that the survey items measured the constructs adequately.

Table 6
Internal consistency, reliability, AVE, and coefficients

Constructs	Items	Loads	CA	CR	AVE
Expectations	EXP1	**0.849	0.87	0.905	0.658
	EXP2	**0.872			
	EXP3	**0.836			
	EXP4	**0.849			
	EXP5	**0.624			
Satisfaction	SAT1	**0.963	0.975	0.980	0.909
	SAT2	**0.959			
	SAT3	**0.958			
	SAT4	**0.916			
	SAT5	**0.969			
Perceived Value	VP1	**0.901	0.96	0.97	0.877
	VP2	**0.937			
	VP3	**0.956			
	VP4	**0.948			
	VP5	**0.941			

Note: **indicates the significant routes $p<0.001$
Source: Created by the author. SmartPLS (Ringle, Wende, & Becker, 2015).

It was necessary to calculate the diagonal values corresponding to the square root of the average extracted variance (AVE) for discriminant validity. It was then verified that the AVE was greater than the highest quadratic correlation presented below the diagonal and the HTMT ratio presented at the top of the diagonal. The study demonstrated this validity for each factor (see Table 7).

Table 7
Discriminant Validity

	1	2	3
Expectations (1)	0.811	0.742	0.787
Satisfaction (2)	0.735	0.953	0.871
Perceived Value (3)	0.689	0.847	0.937

Note: Diagonal: AVE; below the diagonal: correlation to the square; at the top of the diagonal: HTMT ratio
Source: Created by the author. SmartPLS (Ringle, Wende, & Becker, 2015).

Measuring tool for the second-order construct

The weights validated the relative weight-load relevance of the service quality dimensions (SERVQUAL). It is evident that the dimensions are significant (p>0.001) and that the most important is reliability and responsiveness (FIA: ß=0.382; CR: ß=0.260). Although the tangibility dimension is significant, it has the lowest weight (T: ß=0.093), thus assigning a higher weight and a higher loading to the dimensions referring to the relationship with the customer and not the tangible elements, which is consistent with other studies (Arslan et al., 2014; Rahhal, 2015). It was also necessary to verify the VIF of the formative dimensions to review the goodness of fit of the model to be estimated, whose values must be below five with a TOL above 0.20 (Hair et al., 2017). All of the dimensions met the above criteria (see Table 8).

Table 8
Measuring tool for the formative construct

Construct	Dimensions	Collinearity statistics		Weights-Loads			
		TOL	VIF	Beta weights	Sig. Weights	Beta Loads	Sig. Loads
Service quality	Reliability	0.320	3.12	0.382	0.000	0.926	0.000
	Responsiveness	0.253	3.96	0.260	0.000	0.913	0.000
	Assurance	0.267	3.74	0.186	0.000	0.889	0.000
	Empathy	0.318	3.15	0.203	0.000	0.880	0.000
	Tangibility	0.513	1.95	0.093	0.000	0.701	0.000

Source: Created by the author. SmartPLS (Ringle, Wende, & Becker, 2015).

Structural model. Hypothesis testing

The results of testing the hypotheses of the model and its predictive capacity demonstrated that the R^2 values were statistically significant: Service Quality ($R^2 = 0.725$), Satisfaction ($R^2 = 0.795$), and Perceived Value ($R^2 = 0.579$). To evaluate the predictive relevance Q^2, it was necessary to continue the analysis using the Blindfolding re-sampling procedure, and it is evident that all the dependent variables have predictive reliance: Service Quality (Q^2=0.507), Satisfaction (Q^2=0.676), and Perceived Value (Q^2=0.471).

Subsequently, hypothesis tests calculated by Bootstrapping were carried out to obtain the trajectories' coefficients and their t-values. Of the five hypotheses proposed, four were significant (p<0.001). It was possible to confirm the direct and positive relationships of service quality – satisfaction H3 (t=6.207, p-value<0.05), service quality – perceived value H4 (t=34.254, p-value<0.05), and perceived value – satisfaction H5 (t=11.422, p-value<0.05). These results are in line with other studies (Zeithaml, 1998; Bolton & Drew, 1991; Spreng & Mackoy, 1996; Ravald & Grönroos, 1996; Taylor & Hunter, 2003; Want et al., 2004; Lozada & Rodriguez, 2007; Pineda et al., 2011; Arslan et al., 2014; Bustamante, 2015; Konuk, 2018; Miranda et al., 2018; Vijayakumar & Shivdas, 2018; Yépez et al., 2018).

The relation between expectations and satisfaction was not supported H2 (t=0.615, p-value>0.05). This is explained by the intermediation of the "perceived value" construct in the relation, which is in line with the results of other studies (e.g., Spreng & Mackoy, 1996; Vigg et al., 2014; Tsafaraski et al., 2018).

Table 9
Results of the structural model

Hypothesis	Relationships	Coefficients	t-value	P-value	Conclusion
H1	EXP -> QS	**0.853	53.129	0.000	Supported
H2	EXP -> SAT	0.038	0.615	0.539	Not supported
H3	QS -> SAT	**0.407	6.207	0.000	Supported
H4	QS -> VP	**0.764	34.254	0.000	Supported
H5	VP -> SAT	**0.510	11.422	0.000	Supported

Note: **indicates the significant routes p<0.001
Source: Created by the author. SmartPLS (Ringle, Wende, & Becker, 2015).

The above, therefore, confirms that customers will not be satisfied just by perceiving a high level of service quality (Wang et al., 2004; Vergara & Quesada, 2011; Bustamante, 2015; Bentacur et al., 2017). This is how indirect relations are appreciated (see Table 10, where a satisfied customer means delivering a quality service that meets or exceeds their expectations and manages to include what they value most. This is along the same lines as the proposals of other authors such as Konuk (2018).

Table 10
Indirect relationships

Structural path	Path Coefficient	t -value	P-Value
EXP -> QS -> SAT	**0.347	6.235	0.000
EXP -> QS -> VP -> SAT	**0.332	10.747	0.000
EXP -> QS -> VP	**0.652	25.652	0.000

Note: **Indicates the significant routes p<0.001
Source: Created by the author. SmartPLS (Ringle, Wende, & Becker, 2015).

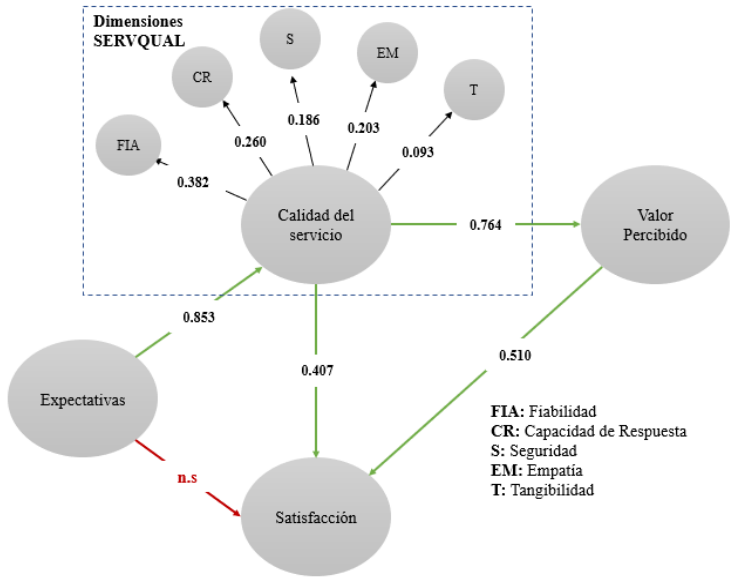

Figure 1. Results of the empirical Structural Model of the study with contrasted hypotheses.
Source: created by the author.

Conclusions

This research presented the user satisfaction points of reference with fixed telecommunications services in Colombia, with relevant elements including the proposed constructs, expectations, service quality, and directly and indirectly perceived value. For a country experiencing rapid growth of the telecommunications sector and where studies of this type are few (for the Latin American case, there are those of Galbán et al., 2013, and Bustamante, 2015, for example), this research is a contribution to the literature.

Furthermore, to show the determinants of service quality of telecommunications companies in the four selected cities, the SERVQUAL model was appropriate, confirming that the relationship dimensions are more relevant for customers than the tangibility dimension (in line with Valdunciel, Flórez,

& Dávila, 2007). This is because visits to service points tend to be sporadic and are for purposes of closing or opening commercial relationships, or complaints. Although it is crucial that the service points are well furnished, clean, and equipped with modern and visibly attractive equipment, what they are evaluating more positively and according to their expectations is that the service is reliable and works well from the beginning. The service must present up-to-date and truthful information and must be flexible, friendly, and, if possible, tailored to the customers' needs.

The relation between expectations and satisfaction for the case of telecommunications in Colombia is not fulfilled, as in other contexts (Bolton & Drew, 1991; Arslan et al., 2014), given that it should be mediated by the same evaluation of service quality and what the customer values in the service. However, the results are in line with other studies in the hotel, education, and health sectors (López & Serrano, 2001; Losada & Rodriguez, 2007; Bentacur et al., 2017; Yépez et al., 2018) carried out in Colombia, which contributes to a description of Colombian consumer behavior based on their valuation of service quality and its influence on satisfaction. This also implies a big challenge for current companies in the sector, which will have to opt for innovation in customer experience, with good customer relations, and with offers that adapt to what their customers most value and need.

Therefore, from a managerial perspective—since satisfaction is an affective factor with sporadic tendencies, and that needs to be reinforced from the same attributes of the service with a sum of satisfactions (Churchill Jr- & Surprenant, 1982; Bolton & Drew, 1991; Carrizo-Moreira et al., 2017)—companies must create strategies to approach customers, strive to empathize more with them and try to give clear, quick, and sincere answers when required. They must listen to every complaint or compliment and strive to comply from the start with the promises of service established contractually. Additionally, this should be accompanied by flexible service designs so that their service evaluations are compatible with what they value and not the perception of monetary and non-monetary sacrifices.

This study has some limitations regarding the sample, which was selected for convenience, applied only to four cities in the country, and using a specific survey for the telecommunications sector in Colombia, limiting the generalization of the results. Therefore, future research should use larger samples to replicate the survey in more cities in the country and identify scales to provide additional dimensions to the sector studied here, not just those proposed by the SERVQUAL model. An additional suggestion is to review the perception of businesspeople of the key service attributes to provide a quality product and thus identify gaps in the service.

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