

## ARTICLES

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# LEVERAGING THE EFFECTIVENESS OF KNOWLEDGE-INTENSIVE SERVICES: THE ROLES OF CUSTOMERS AND SERVICE PROVIDERS

*Alavancando a eficácia de serviços intensivos em conhecimento: O papel dos clientes e dos prestadores de serviço*

*Optimizando la efectividad de los servicios intensivos en conocimiento: El papel de los clientes y proveedores de servicios*

### ABSTRACT

This study develops a theoretical model that relates customer participation in knowledge-intensive services (KIS), the actions of service providers to encourage customer engagement and the effectiveness of services. Five hypotheses were tested using structural equations, and data were collected by surveying a sample of 106 users of physical therapy, personal training, Pilates and global postural reeducation services. The results show that educating customers is not enough; service providers need to empathize and create an emotional bond with them. Additionally, customer education and emotional empathy have different effects on customer feedback and the extent to which customers follow instructions. This study contributes to the literature by promoting a holistic view of the factors that influence customer participation and its effectiveness in KIS.

**KEYWORDS** | Knowledge-intensive services, service effectiveness, customer participation, emotional empathy.

### RESUMO

*Esta pesquisa desenvolve um modelo teórico que relacionou as ações de participação dos clientes em serviços intensivos em conhecimento (SIC), as ações dos prestadores de serviço para estimular o envolvimento dos clientes e a eficácia dos serviços. Cinco hipóteses foram testadas por meio de equações estruturais, e os dados foram coletados por meio do levantamento de uma amostra de 106 usuários de serviços de fisioterapia, personal trainers, pilates e reeducação postural global. Os resultados mostram que não basta educar clientes; prestadores precisam ter empatia e criar um vínculo emocional com eles. Adicionalmente, a educação dos clientes e a empatia emocional influenciam de maneira diferenciada o fornecimento de feedback e até que ponto os clientes seguem as instruções. Este estudo contribui para a literatura, ao promover uma visão holística sobre os fatores que influenciam a participação do cliente e sua eficácia em SIC*

**PALAVRAS-CHAVE** | Serviços intensivos em conhecimento, eficácia do serviço, participação do cliente, empatia emocional.

### RESUMEN

*Esta investigación desarrolla un modelo teórico que relaciona las acciones de participación del cliente en los servicios intensivos en conocimiento (SIC), las acciones de los proveedores de servicios para estimular la participación del cliente y la efectividad de los servicios. Se probaron cinco hipótesis utilizando ecuaciones estructurales, y los datos se recolectaron encuestando a una muestra de 106 usuarios de servicios de fisioterapia, entrenadores personales, pilates y reeducación postural global. Los resultados muestran que educar a los clientes no es suficiente; los proveedores deben sentir empatía y crear un vínculo emocional con ellos. Además, la educación del cliente y la empatía emocional influyen de manera diferente en la entrega de comentarios y en el grado en que los clientes siguen las instrucciones. Este estudio contribuye a la literatura, al promover una visión holística sobre los factores que influyen en la participación del cliente y su efectividad en la SIC.*

**PALABRAS CLAVE** | Servicios intensivos en conocimiento, efectividad del servicio, participación del cliente, empatía emocional, encuesta.

**SIMONE SANTOS DA SILVA**<sup>1</sup>

[simonedt@gmail.com](mailto:simonedt@gmail.com)

0000-0002-2911-2407

**JULIANA BONOMI SANTOS**<sup>2</sup>

[juliana.bonomi@fgv.br](mailto:juliana.bonomi@fgv.br)

0000-0002-9582-7152

<sup>1</sup>Centro Universitário FEI, Programa de Pós-Graduação em Administração de Empresas, São Paulo, SP, Brazil

<sup>2</sup>Fundacao Getulio Vargas, Escola de Administração de Empresas de São Paulo, São Paulo, SP, Brazil

## INTRODUCTION

In knowledge-intensive services (KIS), such as financial consulting or architecture, professionals use their knowledge to develop a customized solution that meets their customers' demands or solves their problems (Bettencourt, Ostrom, Brown, & Roundtree, 2002; Santos & Spring, 2015). The service provider must know the customer's needs and understand how they change (Santos & Spring, 2015). For this reason, customer participation is essential. Customers participate by informing their service provider of their needs and by providing feedback (Eisingerich & Bell, 2006). Customers must also perform activities and, therefore, it is important for them to follow instructions given by the service providers (Dellande, Gilly, & Graham, 2004).

Service providers must educate the customer by explaining concepts and providing information to help them understand the service (Eisingerich & Bell, 2006). Clients with greater understanding tend to become more engaged (Bell & Eisingerich, 2007; Eisingerich & Bell, 2008; Santos & Spring, 2015). Service providers with greater emotional empathy, i.e., greater ability to understand the client's emotions, problems and feelings (Lin, Yang, & Huang, 2016), will deliver more courteous service (Wieseke, Geigenmuller, & Kraus, 2012), thus encouraging customer engagement due to the closeness of the relationship (Fang, Palmatier, & Evans, 2008).

Studies on customer and service provider actions indicate that those actions can increase the level of service quality (Dong, Sivakumar, Evans, & Zou, 2015), as well as loyalty (Auh, Bell, McLeod, & Shih, 2007; Eisingerich & Bell, 2006, 2008; Howcroft, Hamilton, & Hewer, 2007) and satisfaction (Dong et al., 2015; Eichertopf, Kleinaltenkamp, & Stiphout, 2011).

However, it is not well understood whether the actions of customers and service providers contribute to KIS effectiveness (Dellande et al., 2004). Most studies explore gains related to customer satisfaction and loyalty (Dong et al., 2015; Eisingerich & Bell, 2006, 2008). Therefore, it is not known whether the actions of customers and service providers generate greater satisfaction and loyalty due to the service's results or the relationship.

Studies also take a restricted view of the contribution of both to service effectiveness. Some focus on the implications of customer engagement, without considering the actions of service providers (Dellande et al., 2004; Eichertopf et al., 2011; Kelley & Donnelly, 1990; Larsson & Bowen, 1989). Others take into account the role of service providers in customer education, though focusing only on how customers follow instructions (Auh et al., 2007; Eichertopf et al., 2011; Eisingerich & Bell, 2006,

2008; Evans, Stan, & Murray, 2008; Howcroft et al., 2007; Kelley & Donnelly, 1990; Larsson & Bowen, 1989). Therefore, there is the lack of a broader view of the connection between the actions of both, and whether those actions contribute to improving effectiveness.

The goal of this study was to analyze the relationship between customers' and service providers' actions and KIS effectiveness. A theoretical model was designed to capture how the service provider's emotional empathy and education actions affect the way the customer provides feedback and follows instructions, and the relationship between customers' and service providers' actions and service effectiveness. Data were collected through a survey with 106 customers of personal trainers, physiotherapy, Pilates and Global Postural Reeducation (GPR) to test the hypotheses.

## THEORETICAL FRAMEWORK

### Knowledge-intensive Services (KIS)

KIS consist in the delivery of professional activity used to create, accumulate and disseminate knowledge in order to fulfill customers' needs in a customized way by meeting demands or solving problems (Bettencourt et al., 2002; Santos & Spring, 2015). The delivery of such services begins with a customer presenting his need to the service provider (Santos & Spring, 2015). The latter, based on knowledge, diagnoses the situation and proposes a solution. If the customer agrees with the presented solution, then the service provider puts it into practice. Three characteristics are relevant to describe such services.

First, the service provider must have information (Muller & Zenker, 2001), experience and relational skills to understand the customer's need, offer a solution and maintain the necessary contact with the customer (Davenport, Jarvenpaa, & Beers, 1996). Second, the solution is customized and cannot be resold without adaptation (Muller & Zenker, 2001). Finally, the customer must provide information about his expectations (Bettencourt, 1997; Eisingerich, Auh, & Merlo, 2014). During the period the service is delivered, the customer also needs to tell the service provider about how his demand changes (Santos & Spring, 2015), assist the service provider in making decisions (Yim, Chan, & Lam, 2012) and perform activities that depend on him for implementing the solution (Bettencourt et al., 2002; Yim et al., 2012). If the service provider is unable to encourage this participation, he will face a challenge to understand the customer's needs. However,

the concept of customer participation is broad, without a clear definition of its scope and boundaries (Dong & Sivakumar, 2017).

Various services can fit into this classification, such as training, guidance and consultancy, design and architecture and medical services (Nordenflycht, 2010); other healthcare services, such as physiotherapy, can also be considered KIS. These services depend on the provider's knowledge to create a customized diagnosis and a treatment plan, and must also be adjusted according to advances in patients' situation.

## Customer Participation Actions in KIS

Customer participation in KIS can take place during service (Santos & Spring, 2015). Customers can perform two main actions. The first is to follow the instructions given by the professional (Dellande et al., 2004), since the service provider has knowledge to help in achieving goals. They can also act by providing feedback on results (Bettencourt, 1997), so that the professional can adjust the service to his needs; thus, the customer acts by providing information so that the service provider can create the appropriate solution (Aarikka-Stenroos & Jaakkola, 2012). It is worth noting that customers can praise or indicate points for improvement, and the service provider can use both types of comment to adapt his service.

Thus, in the case of KIS, the customer can perform two types of actions: giving constructive suggestions (feedback) to the service provider (Eisingerich & Bell, 2006) and following the instructions given (Dellande et al., 2004). These two customer actions contribute to KIS effectiveness (Dellande et al., 2004). However, the customer does not always provide feedback or follow instructions correctly. To do so, he needs to be aware of his role (Bettencourt et al., 2002; LengnickHall, 1996; Mills & Morris, 1986).

The service provider plays an important role in encouraging customer participation. He needs to educate the customer to participate by imparting knowledge of both the customer's responsibility during the service and of the activities to be performed, even when they are not together (Dellande et al., 2004). This prevents problems with unclear facts and reduces the possibility of criticism, since both parties agree on their responsibilities. The literature shows that when the service provider educates the customer, the latter is more likely to participate and express his opinions (Aarikka-Stenroos & Jaakkola, 2012; Auh et al., 2007; Eicientopf et al., 2011; Eisingerich & Bell, 2006; Evans et al., 2008; Grönroos, 2008; Howcroft et al., 2007; Kelley & Donnelly, 1990; Santos & Spring, 2015). It also

describes the importance for the service provider to have an empathic relationship with his customers (Bowman, Heilman, & Seetharaman, 2004).

However, while the literature shows the contribution of customer actions to effectiveness, and that education actions performed by service providers encourage customer participation, the effect of actions performed by service providers for effectiveness is unknown; nor is it known whether customers' and service providers' actions complement each other. Next, we formulate the study's hypotheses to better explore this issue.

## HYPOTHESES FORMULATION

### The Importance of Customer Actions for KIS Effectiveness

The concept of effectiveness is related to the achievement of goals. In KIS, effectiveness is associated with delivery of a solution that meets the needs of the customer, whose participation affects effectiveness (Tuli, Kohli, & Bharadwaj, 2007). Thus, it is reasonable to evaluate results from the customer's perspective, i.e., by asking the consumer about his expectations and opinions regarding the results (Dellande et al., 2004), and about his experiences with the service (Edvardsson, 2005; Klaus & Maklan, 2012). His opinion is essential to understand if the results were achieved (Berry, Wall, & Carbone, 2006).

Providing feedback and following instructions can contribute to service effectiveness (Dellande et al., 2004) for different reasons. By providing feedback and information about their preferences, customers contribute to the development of a plan in line with their needs and give service providers the opportunity to improve services in the course of their delivery (Santos & Spring, 2015). In addition, some activities can only be performed by the customer and, when the instructions are followed, there is a greater chance of success. As a result, customers can perceive failures and ask for help to solve them (Bettencourt et al., 2002). Both customer actions in KIS seem to be essential for greater effectiveness. Therefore, we formulate two research hypotheses:

H1a: The customer's act of following instructions is positively associated with greater service effectiveness.

H1b: The customer's act of providing feedback is positively associated with greater service effectiveness.

The Service Provider's Actions: The Role of Customer Education

Customer education takes place when service providers explain complex concepts to customers and provide suitable information to help them understand the service (Eisingerich & Bell, 2006). Service providers can present success cases in which they show events that were successful due to participation (Kelley & Donnelly, 1990). Customer education aims to increase the level of knowledge, so that the customer feels motivated and able to participate (Eisingerich & Bell, 2006).

Customer education actions generate greater interaction with the service provider and greater clarity to follow the instructions (Bowman et al., 2004), even when they are not together. By understanding the service and what is expected of him, the customer is better able to provide relevant information and feedback. The literature shows that these education actions can lead customers to provide feedback and follow instructions, mainly because such actions increase their level of confidence in participating and expressing their opinion (Aarikka-Stenroos & Jaakkola, 2012; Auh et al., 2007; Eichentopf et al., 2011; Eisingerich & Bell, 2006; Evans et al., 2008; Grönroos, 2008; Howcroft et al., 2007; Kelley & Donnelly, 1990; Santos & Spring, 2015). Therefore, the following hypotheses were proposed:

H2a: Customer education in KIS is positively associated with the customer's act of following instructions.

H2b: Customer education in KIS is positively associated with the customer's act of providing feedback.

Educating the customer makes it clearer to him how his actions can contribute to the achievement of goals and to service effectiveness. However, an improvement in effectiveness will only take place if the customer provides more feedback and follows the instructions. In other words, the customer's actions mediate the relationship between education actions and service effectiveness (Santos & Spring, 2015). It is not enough for the customer to know his role, he needs to follow the instructions (Bowman et al., 2004) to achieve the objectives more easily. In addition, the service provider will only be able to obtain better information for the service and provide a better solution to the customer's needs if the customer provides feedback and updates on his own situation. Thus, the following hypotheses were suggested:

H3a: The customer's act of following instructions mediates the relationship between customer education and service effectiveness;

H3b: The customer's act of providing feedback mediates the relationship between customer education and service effectiveness.

## The Service Provider's Actions: The Role of Emotional Empathy

The literature defines empathy as cognitive and emotional. The former is the ability to understand the mental state of others, which helps predict the next steps and identify whether there is a lie in the relationship (Clark, Murfett, Rogers, & Ang, 2016; Lee, 2014; Pizam, 2015; Tran et al., 2013; Wieseke et al., 2012). Emotional empathy is defined as understanding of emotions, problems and feelings (Lin et al., 2016). This study used the service provider's emotional empathy as perceived by the customer.

When the service provider has emotional empathy for the customer, he is able to identify and classify consumers based on their needs, emotions, feelings and non-verbal signals (Lin et al., 2016). Thus, he can provide customized guidance that makes more sense to customers. The way in which the service provider conducts the relationship is essential to guarantee the customer's effectiveness in following the instructions (Bowman et al., 2004). By providing assertive information, the customer's chances of following instructions are increased. When the service provider pays attention to customers' emotions, he is able to get them to better follow the provided guidance (Dellande et al., 2004).

Consumers often want the person serving them to connect with their situation, and not just listen to their problem, even if that does not result in the solution to their need (Gorry & Westbrook, 2011). Since the service provider's empathy can arouse feelings such as affection and generosity (Lee, 2014), it leads him to behave in a more benevolent and caring way. An emotional connection can then be created between the parties (Development, Hoffman, & York, 2008). Thus, the following hypotheses were proposed:

H4a: The service provider's emotional empathy is positively associated with the customer's act of following instructions.

H4b: The service provider's emotional empathy is positively associated with the customer's act of providing feedback.

A greater emotional empathy from the service provider also leads him to be more interested in the customer's needs, thus generating greater knowledge and understanding to achieve the goals (Lin et al., 2016). This makes the service provider more likely to offer a more suitable and thus more effective solution. When perceived by the customer, the service provider's emotional empathy can create a connection between them, and the greater the closeness, the greater the likelihood of reliable solutions (Evans et al., 2008) and improved effectiveness (Eisingerich & Bell, 2008). Thus, the service provider's emotional empathy might

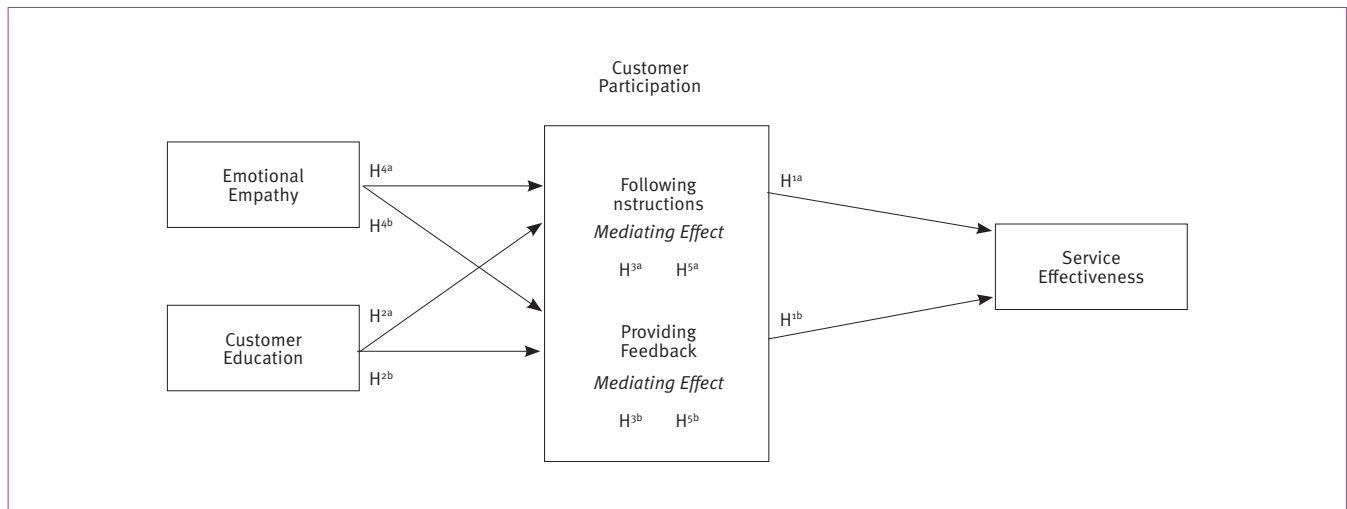
be expected to contribute to effectiveness. However, even if the bond is created, to achieve the established objectives and find the best solution for his needs, the customer must perform the actions suggested by the service provider and provide information so that the latter can continuously adapt the service to former's needs. Thus, we present the last two hypotheses in this study:

H5a: The customer's act of following instructions mediates the relationship between the service provider's emotional empathy and service effectiveness.

H5b: The customer's act of providing feedback mediates the relationship between the service provider's emotional empathy and service effectiveness.

Figure 1 presents the theoretical model tested in this study.

Figure 1. Theoretical Model



## METHODOLOGY

Data were collected through a survey in order to test the hypotheses formulated about the relationships between providing feedback, following instructions, educating the client (Bell & Eisingerich, 2007; Dellande et al., 2004; Eisingerich & Bell, 2006), emotional empathy (Lin et al., 2016) and service effectiveness (Dellande et al., 2004).

## Population and Sample

The studied population was formed by users of KIS, specifically in the fields of physiotherapy, personal training, RPG and Pilates. These services can be considered KIS, as well as other diagnostic services provided by doctors in clinics and hospitals, since their development depends on the specific knowledge of the professional who serves the customer. In addition, in these services, the training program developed by the professional is customized, and its creation depends on information that the customer must provide about his expectations, so that the solution can be aligned with his demand. Finally, during the

service delivery period, the customer also needs to inform how his demands change over time so that the service provider can adjust the training program.

These services are also relational, thus allowing customers to provide feedback and service providers to empathize with customers. Such similarities allowed using these different services to test the model. Since all studied fields are related to a specific segment in the healthcare industry, a certain homogeneity is expected between the type of interaction between customers and service providers, feedbacks and education actions, and the way customers follow instructions, thus restricting the scope of results to this type of KIS.

The collection instrument had three sections. The first provided general guidance on how to answer the questionnaire; it also allowed identifying the type of service and the frequency of use. The second section contained a scale to measure customer participation (following instructions and providing feedback), customer education actions, empathy and service effectiveness. The questions in this section were presented at random. The questionnaire's goal was to capture the customer's perception of each construct. Thus, the model was tested according to the

customer's perception. It was administered through virtual and physical tools. The third section contained questions about respondent characteristics.

The final questionnaire was made available on social networks, on channels such as LinkedIn, WhatsApp, e-mail and Facebook, for a period of two months. The importance of the study was described in the data collection instrument, and an individual presentation was also made to the people who responded in person. Collection was also conducted in gyms and rehabilitation centers. Therefore, the sample is non-probabilistic and does not allow generalizing the study's results. We obtained 94 responses electronically and 23 from paper questionnaires, which resulted in a final sample of 117 questionnaires. Student's t-tests for comparison of means between two samples indicated that there was no significant difference ( $p$ -value  $> 0.05$ ) between the data collected through the electronic and physical questionnaires. The responses were screened and 11 questionnaires were excluded from the analysis as they presented a standard deviation between the responses below 0.5. Thus, the final sample consisted of 106 questionnaires. Table 1 shows the characteristics of the sample.

Most respondents are personal training users (59.2%, see Table 1). Analyses of variance were conducted to identify differences between the scales according to the type of service, and did not indicate significant differences between the variables ( $p > 0.05$ ). These tests allowed the analyses to be carried out with the total sample.

## Scales

The questionnaire was developed based on scales validated in previous studies. The service effectiveness scale was adapted from the study of Dellande et al. (2004), in which the authors explored the opinion of customers of medical services regarding the achievement of goals, a concept similar to that used in our research. However, that study assessed issues related to the state of customers (e.g., disposition) and the continued achievement of goals. For this reason, we chose to work with the items that evaluated only the achievement of established goals.

Customer participation as defined in this study seeks to capture whether the customer follows the instructions given by the service providers and whether he provides feedback. The scale relating to following instructions was obtained from the study of Dellande et al. (2004). The scales on customer feedback and customer education were obtained from the study of Eisingerich and Bell (2006). Finally, the empathy scale was

adapted from the study of Lin et al. (2016), who assessed the perception of empathy in the customer's opinion. With regard to that scale, we decided to work only with the items that measured the extent to which the customer perceived that the provider paid attention to his emotions, feelings and body languages (emotional empathy).

**Table 1. Sample Characteristics**

Sample Characteristics	Classes	Sample (n=106) Freq. %
Gender	Male	37.9
	Female	62.1
Age	31 or younger	29.2
	31-45	47.5
	46-64	21.4
	65 or older	1.9
Marital Status	Single	43.7
	Married	47.6
	Other	8.7
Education	Secondary education degree	28.4
	Undergraduate degree	31.4
	Graduate degree	40.2
Type of Service	Personal training	59.2
	Physiotherapy and GPR	19.4
	Pilates	21.4
Relationship Length	Less than 1 year	56.3
	More than 1 year	43.7
Frequency of Use	Every day	12.6
	3 times a week	27.2
	Twice a week	42.7
	Once a week or less	17.5

The scales were translated into Portuguese and adapted. Once the data were collected, we performed descriptive statistics analysis and an exploratory factor analysis (EFA) with varimax rotation in order to identify the dimensional structure of data (Table 2). EFA had a good fit ( $KMO = 0.82$ ), and the Bartlett test was significant ( $p < 0.01$ ). The analysis of eigenvalues (above 1)

suggested the existence of five factors responsible for 75.4% of the extracted variance. A variable from the customer education scale was eliminated as it had a 0.66 load with its factor, and 0.41 with the factor that contained the empathy variables.

**Table 2. Scales – Descriptive analysis and factor loadings of the confirmatory factor analysis**

Construct	Scales	Mean	Standard deviation	Factor loading CFA*
Service Effectiveness	I am succeeding in achieving the goals I initially established	5.7	1.1	.91
	I will succeed in achieving the goals I initially established	6	1.1	.84
	I feel I have improved my weight/posture since I started using this professional's service	5.8	1.2	.70
Following Instructions	I continue to follow this professional's instructions even when I am not with him	5.4	1.2	.77
	To achieve my goal, I follow all tips from this professional	5.7	1.0	.74
	I follow this professional's instructions about what must be done before and after the exercises, even when he is not around	5.7	1.1	.74
	When I am alone, I continue to follow the instructions about posture/stretching and other instructions he gave in order to keep the results of the performed exercises	5.4	1.2	.75
Providing Feedback	I make constructive suggestions so that this professional can improve his services	5.4	1.3	.64
	When I have a problem related with this professional, I provide feedback so that he can improve the quality of service	5.6	1.2	.86
	When this professional defines exercises that I like and that bring me results, I provide feedback to let him know	6.1	1.1	.67
Customer Education	This professional explains the technical concepts of the recommended exercises, and he always indicates the best ways	5.7	1.3	.80
	This professional always provides the information I need about the exercises	5.9	1.1	.81
	This professional always explains the pros and cons of the exercises he recommends	5.6	1.3	.81
Emotional Empathy	I feel that this professional pays attention to my emotions, feelings and body language	5.3	1.3	.86
	This professional shows concern about feelings I don't verbalize	5.1	1.4	.98
	This professional pays attention to my feelings	4.9	1.5	.68

\* significant at the 0.01 level

## Analysis of Validity and Reliability

Confirmatory factor analysis was performed to assess the scales' validity and reliability using software AMOS. Table 3 shows the measurement model's fit indices. The data indicate the model's good fit.

Table 3. Model Fit Indices

Indices	Measurement Model	Reference Standard (Kline, 2005)
$\chi^2$ - Chi-square	165.4	**
DF – Degrees of Freedom	94	**
TLI	0.90	>0.9
CFI	0.91	>0.9
IFI	0.92	>0.9
RMSEA	0.08	<0.08
$\chi^2$ – Normed Chi-square	1.76	≤3.00

Then, the analysis of convergent, discriminant and reliability validity was carried out. All variables had a factor load above 0.5 and were significant at the level of 0.01 (see Table 2). The average variance extracted (AVE) for all constructs was also above 0.5. Thus, the scales showed convergent validity. To assess discriminant validity, squared correlations between constructs were calculated and compared with the average variance extracted (Table 4). All squared interconstruct correlations are inferior to the AVE (in bold, diagonal), thus indicating that there is discriminant validity between all constructs.

Table 4. Composite reliability (CR), average variance extracted (AVE) and squared interconstruct correlation

Constructs*	CR	Emotional Empathy	Customer Education	Providing Feedback	Following Instructions	Service Effectiveness
Emotional Empathy	0.84	<b>0.65</b>				
Customer Education	0.85	0.25	<b>0.66</b>			
Providing Feedback	0.77	0.27	0.26	<b>0.54</b>		
Following Instructions	0.84	0.03	0.24	0.11	<b>0.56</b>	
Service Effectiveness	0.86	0.09	0.13	0.10	0.28	0.67

\*AVE in the diagonal

Finally, composite reliability was calculated, which was greater than 0.7 for all cases (Table 4). Together, the analyses indicated the scales' validity and reliability. Due to the sample's size, we chose to work with the scales calculated for each construct. To proceed with the analyses, we used AMOS to calculate the value of the factors (scales) and save them in the database.

## RESULTS

We chose path analysis to test the hypotheses. Before this analysis, we assessed the impact of the control variables. To that end, a linear regression was calculated in which the variable service effectiveness was the dependent variable, and the control variables were the independent variables. The control variables

were: gender, age, marital status, education, service type, frequency of use and length of relationship. Dummy variables were created to represent the classes of control variables (Table 1). The regression analysis showed an  $R^2$  of 5.3%, and the analysis of variance was not significant ( $p = 0.91$ ), thus indicating the lack of a relationship between at least one control variable and service effectiveness.

Since no control variable was significant, the control variables were not included in the path analysis. The model had a good fit, since all indicators were above the reference standards (Table 5). The  $R^2$  for service effectiveness was 0.51. The  $R^2$  values for the variables "following instructions" and "providing feedback" were 0.51 and 0.30, respectively. The square values indicated that the model's independent variables explained a relevant portion of the variability of the variables in question.

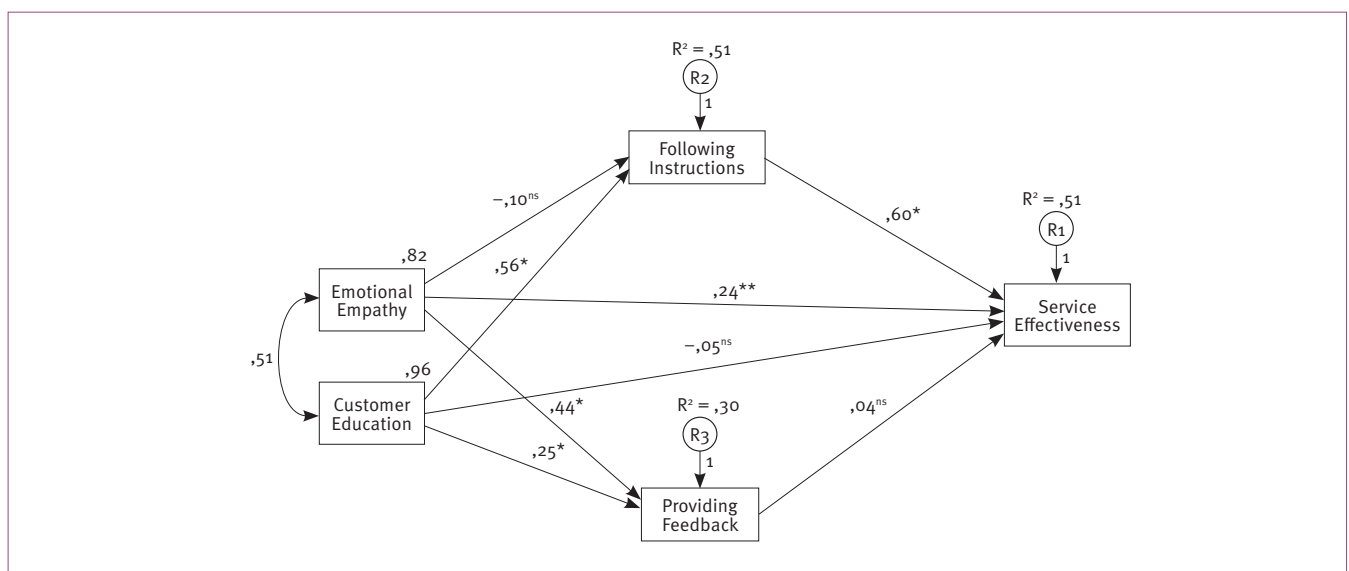


Table 5. Model fit indices for path analysis

Indices	Model Fit	Reference Standard (Kline, 2005)
x2 - Chi-square	2.68	**
DF – Degrees of Freedom	1	**
TLI	0.92	>0.9
CFI	0.99	>0.9
IFI	0.99	>0.9
x2 – Normed Chi-square	2.68	≤3.00

After analyzing the model’s goodness of fit, the regression coefficients between constructs were evaluated to test the proposed hypotheses (Figure 2). The relationship between following instructions and service effectiveness proved significant, but the same was not true for the relationship between providing feedback and service effectiveness. Thus, there is statistical evidence supporting H<sup>3a</sup>, but not H<sup>3b</sup>.

Figure 2. Hypotheses Test



\*p<.01; \*\*p<.05; ns= not significant\_

The results also indicate that customer education actions are positively associated with providing feedback and following the service provider’s instructions, thus proving H<sup>2a</sup> and H<sup>2b</sup>.

To test the hypothesis that following instructions and providing feedback mediate the relationship between education and service effectiveness (H<sup>3a</sup> and H<sup>3b</sup>), we estimated the combined effect of the relationship between customer education and the mediating variables (following instructions and providing feedback) (A) and the mediating variables and service effectiveness (B). To perform the estimations, we used bootstrapping with generation of 2,000 samples, with software AMOS. For the mediating variable

“following instructions”, the combined effect (AxB) was 0.33 and significant (p < 0.01). For the mediating variable “providing feedback”, the combined effect of the relationship between customer education and providing feedback (A) and between providing feedback and service effectiveness (B) was 0.01 (p = 0.76). Thus, H<sup>3a</sup> was confirmed, but it was not possible to confirm H<sup>3b</sup>. We also estimated the direct effect between education actions and service effectiveness (C), which was not significant (p = 0.62). This finding indicates a total mediation by the variable “following instructions” in the relationship between customer education and service effectiveness.

Emotional empathy was positively associated with providing feedback ( $p < 0.01$ ), but it was not related to the customer's act of following instructions, thus confirming  $H^{4a}$ , but not  $H^{4b}$ . Finally, the hypothesis of mediation of following instructions and providing feedback in the relationship between emotional empathy and service effectiveness ( $H^{5a}$  and  $H^{5b}$ ) was tested in the same way that  $H^{3a}$  and  $H^{3b}$  were tested. The combined effect of the relationship between empathy and following instructions (A) and between

following instructions and service effectiveness (B) was  $-0.06$  and not significant ( $p = 0.16$ ). The combined effect of the relationship between empathy and providing feedback (A) and between providing feedback and service effectiveness (B) was  $0.017$  and not significant ( $p = 0.78$ ). Thus, neither  $H^{5a}$  nor  $H^{5b}$  was confirmed. However, a direct relationship between emotional empathy and service effectiveness was identified, and it proved significant ( $b = 0.24$ ;  $p < 0.05$ ). Table 6 summarizes the hypotheses.

Table 6. Summary of Hypotheses

Hypothesis	Conclusion
H1a: The customer's act of following instructions is positively associated with greater service effectiveness.	confirmed
H1b: The customer's act of providing feedback is positively associated with greater service effectiveness.	not confirmed
H2a: Customer education in KIS is positively associated with the customer's act of following instructions.	confirmed
H2b: Customer education in KIS is positively associated with the customer's act of providing feedback.	confirmed
H3a: The customer's act of following instructions mediates the relationship between customer education and service effectiveness;	confirmed
H3b: The customer's act of providing feedback mediates the relationship between customer education and service effectiveness.	not confirmed
H4a: The service provider's emotional empathy is positively associated with the customer's act of following instructions.	not confirmed
H4b: The service provider's emotional empathy is positively associated with the customer's act of providing feedback.	confirmed
H5a: The customer's act of following instructions mediates the relationship between the service provider's emotional empathy and service effectiveness.	not confirmed
H5b: The customer's act of providing feedback mediates the relationship between the service provider's emotional empathy and service effectiveness.	not confirmed

## DISCUSSION

The literature has shown that customer participation is linked to satisfaction, trust and loyalty (Eisingerich & Bell, 2006; Fang et al., 2008; Jamal, 2009; Reichheld & Sasser, 1990; Sabharwal, Soch, & Kaur, 2010; Zeithaml, Berry, & Parasuraman, 1996). Our study shows that customer engagement also creates a greater sense of effectiveness in KIS customers. Greater effectiveness is related only to the customer's act of following instructions, in line with the study of Dellande et al. (2004). In other words, in the case of the studied services, the more individuals follow the directions, such as keeping the correct posture when alone and keeping a balanced diet, the greater the chances of achieving their goals regarding weight loss or improvement in quality of life. On the other hand, providing feedback does not contribute to achieving these goals. The literature, however, points out that

feedback is important for greater customer loyalty (Eisingerich & Bell, 2006). Therefore, it may be important for improving the relationship between the parties, but it is not enough to lead the customer to achieve effectiveness.

This study contributes to the literature by providing an integrated view on customer participation in KIS and on the role of service providers. Research has hitherto focused only on customers' actions (Dellande et al., 2004; Eicientopf et al., 2011; Kelley & Donnelly, 1990; Larsson & Bowen, 1989) or addressed only one form of customer action (Auh et al., 2007; Eicientopf et al., 2011; Eisingerich & Bell, 2006, 2008; Evans et al., 2008; Howcroft et al., 2007; Kelley & Donnelly, 1990; Larsson & Bowen, 1989). This study identified that providing feedback and following instructions are antecedents and have different implications. The results indicate that providing feedback is associated with the

service provider's emotional empathy and customer education actions, but not with greater effectiveness. The fact that customers follow instructions is related to better effectiveness, but it seems to derive only from the service provider's education actions, and not from his empathy. Therefore, in the case of the studied services, we can say that, by being empathetic, personal trainers, Pilates instructors and other similar professionals are more likely to get their customers to provide suggestions for improving their services, even if that does not translate into better results. On the other hand, they will only be able to make their customers achieve their personal goals if they provide detailed guidance on how they should act out of class.

Finally, this study empirically assesses the role of the service provider's empathy, and points out that it is associated with more feedback being provided and with the achievement of goals. Thus, if the service provider is attentive to customers' emotions and feelings, he will motivate them to say whether the service is good or bad and perceive results more positively. Thus, this study contributes to the literature by highlighting the importance of relational aspects in the delivery of KIS; it also brings to the discussion the need to consider the service provider's intrinsic characteristics. Client education has been addressed in different contexts in the literature (Auh et al., 2007; Eicientopf et al., 2011; Eisingerich & Bell, 2006, 2008; Evans et al., 2008; Howcroft et al., 2007; Kelley & Donnelly, 1990; Larsson & Bowen, 1989), but this study shows the importance of the service provider's empathy, and new studies should continue to research other actions of relevance by service providers.

This study has also managerial implications for KIS professionals. They should take the time to explain to the customer how to act, even when they are not together, and emphasize the importance of activities performed in the service provider's absence for achieving results. In our survey, people who knew the importance of certain movements continued to perform them even in the service provider's absence. Today, with social networks, contact between service providers and customers is easier and quicker. Thus, the former can develop active contact strategies in which they send messages with reminders and suggestions for activities.

This type of contact also promotes the relationship, whereby both parties become closer and the customer perceives the service provider's empathy towards his needs. When the client feels confident and develops social ties with the service provider, he increases his willingness to participate and express his opinion, thus providing feedback (Eisingerich & Bell, 2006). This relationship can also increase the customer's tolerance for mistakes.

Considering this study's findings regarding empathy, the service provider is advised to behave in a way that demonstrates his empathy. Insofar as he perceives openness on the part of the customer, it is important to ask about personal issues, sympathize with stories and events, assess the customer's mood and adapt the service to the situation. It is known that individuals have different levels of empathy (Lee, 2014), but empathy can be developed through training on how to interact with customers according to the service provider's perception (Lee, 2014). Thus, providers with difficulty relating to others should invest in training.

## CONCLUSION

The results show that educating customers is not enough. Service providers need to be empathetic and create an emotional bond with them. Empathetic service providers who educate their customers encourage more participation and therefore achieve better results. This study shows that there are differences in the way customers participate, and a better understanding of customer participation in KIS requires assessing the different dimensions of participation. These findings are relevant and open new avenues for research, in addition to directing service providers' behavior so that they can achieve better results.

The people who answered the questionnaire are users of four types of services (i.e., physiotherapy, personal training, Pilates and GPR), all linked to healthcare, and most respondents use personal training services. Thus, this study's results are limited to that context. In addition, the study is based on a non-probabilistic sample, which does not allow generalizing its results. Although the contributions are relevant, future studies should research other services, such as financial consulting, to identify whether the findings are applicable to them.

Future studies should explore in greater detail other variables linked to the relationship between the parties and how they influence participation. Since service providers' emotional empathy proved relevant, and one of the premises adopted is that this occurred because empathy strengthened the relationship, it makes sense to study the relationship further. There are other strategies to encourage participation, such as socializing and problem management. The service provider can socialize with the customer by taking him out to observe cases of other customers, similar to his own, or by creating events to interact with him out of service hours, thus motivating his participation (Evans et al., 2008). In problem management, the service provider solves a particular situation, and the customer feels that his needs are taken into account. These actions reinforce the relationship, thus leading the customer to participate more (Eisingerich &

Bell, 2006; Santos & Spring, 2015). New studies should explore the relationship between the service provider's empathy and these strategies, taking into account the most debated strategy in the literature – educating the customer. Future research should explore factors that impede the customer's effective participation towards the expected results. Effectiveness was treated here as the perception of results by the customer. In future studies, the relationship between real effectiveness and the actions of customers and service providers could be investigated. This would demonstrate whether these actions have a real effect or just influence the customer's perception of results.

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## AUTHORS' CONTRIBUTIONS

The authors declare that they contributed equally in the data analysis, and finally, writing and final review the article. From the conceptualization and theoretical-methodological approach, the theoretical review (literature survey) and data collection was conducted by first author.