REVISTA ESPACIOS

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Impact of the skills-based training model on the perceived quality of service and student loyalty in higher education

Impacto del modelo de enseñanza por competencias en la calidad percibida y lealtad de los estudiantes universitarios

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ABSTRACT:
The objective of this research is to provide information about the effect of the education model explaining quality of service and loyalty. The estimation method considers a factor analysis and a structural equation modelling. The data come from a sample of 590 students from a business programs in Chile. The results show that student's loyalty is positively correlated with their satisfaction and it is affected by the perceived quality of service. Additionally, the education model may improve perception of quality.
Keywords: Structural equation model, skills-based education, loyalty

RESUMEN:
El objetivo de esta investigación es proporcionar información sobre el efecto del modelo educativo que explica la calidad del servicio y la lealtad. El método de estimación considera un análisis factorial y un modelo de ecuación estructural. Los datos provienen de una muestra de 590 estudiantes de un programa de negocios en Chile. Los resultados muestran que la lealtad del estudiante se correlaciona positivamente con su satisfacción y se ve afectada por la calidad percibida del servicio.
Palabras clave: Modelo de ecuaciones estructurales, modelo educativo, lealtad

1. Introduction

Competition in the education market, the commitment to quality and the accreditation processes for universities have brought about the need to provide better services and academic programs that respond to students' needs as a key component for success in a market with many providers (Brown & Mazzarol, 2009) and thus to foster loyalty in them.

In this light, universities have attempted to improve the quality of the service provided to gain better positioning in a competitive market (Aly & Akpovi, 2001). In addition, as a way to improve the quality of the services, universities have undergone a process of curriculum modernization and innovation, which has led to the modification of their education model, moving from a system centered on cognitive learning objectives to one where the goal is to develop abilities and soft skills, which are considered necessary for improved performance in the labor market.

Higher education, which in its beginnings concentrated on conveying information through classroom learning, began to display shortcomings when the institutions were faced with an increase in student enrolment (Catalán & Juliá, 2011). In this context, the higher education method revealed the superficiality of certain learning experiences (Gómez-Mendoza & Alzate-Piedrahíta, 2010) and brought into question the effectiveness of the predominantly cognitive contents being taught (Ruiz-Tagle & Schmal, 2009). The skills-based approach (SBA) is posited as the methodology to educate professionals trained to confront the challenges of the knowledge society (González Brito, 2011) with the aim of contributing to personal development (Tobón, 2007), and thus

aid in social and academic practices (García, 2011). The goal here is to produce critical and competent professionals (Triadó, Aparicio-Chueca, & Elasri-Ejjaberi, 2013).

If the students perceive that their education model is consistent with the requirements of the labor market, they will eventually be more satisfied with the education they have received, and therefore will be more loyal to the institution, which could generate more and better relations in the long term.

Traditionally, studies explain student loyalty using variables associated with the perception of quality of services and satisfaction, among others (Rojas-Mendez, Vasquez-Parraga, Kara, & Cerda-Urrutia, 2009). The study by Helgesen & Nesset (2007) suggests that students with a high degree of loyalty to an institution become a positive component of this institution. Raciti (2012) demonstrates that student loyalty is affected by the relations that can be created during the education process. In addition, Rodie & Kleine (2000) describe students with high levels of loyalty as having a more fluid participation in the teaching process which directly and positively affects global learning.

From this emerges the need to examine how an education model focusing on skills development affects the perception of quality of service, satisfaction and loyalty to a university. To do this, it is necessary to estimate a model that can identify the factors that influence student loyalty to a university, considering satisfaction and the determinants of perceived quality including student perception of the skills-based teaching model.

2. Theoretical framework

In addition to creating a distinction, the quality of service in a business creates a competitive advantage which is relevant when studying competitiveness (Ali, Khan, & Rehman, 2012). Several authors suggest that the quality of service is determined by the result between the services received and the service expected (Grönroos, 1984). The literature presents a variety of models and metrics to measure quality of service (Seth, Deshmukh, & Vrat, 2005). Alves & Raposo (2010) state that supporting positive perceptions of quality of service leads to a positive impact on student satisfaction, which is also related to customer loyalty (Sutawidjaya & Widiastuti, 2012).

Elliott & Healy (2001) suggest that satisfaction is the result of the assessment of a teaching experience received, which conforms to a short-term attitude. Kara and DeShields (2004) report that satisfaction is comprised of dimensions of quality of service directly affected by the performance of the academics, administrative staff and faculty in general. Sojkin, Bartkowiak, & Skuza (2012) describe satisfaction as being influenced by the quality of the knowledge acquired in the learning. Lohmann at al. (2019) mentioned that synergies among teamwork enhance student satisfaction.

Finally, various authors note that loyalty is the result of a positive effect produced mainly by satisfaction (Chan et al., 2003). Rojas et al. (2009) mention that satisfaction affects students' confidence, commitment and then their loyalty.

2.1. Skills-based approach (SBA)

Skills development has become a central goal for universities (García, 2011); however, the adoption of a SBA requires a detailed review of professional training and knowledge application. This curricular approach endeavors to reduce the gap between a graduate's skills and the demands of a changing and competitive world (Salgado, Corrales, Muñoz, & Delgado, 2012). One of the features of the SBA, unlike the traditional approach, is that the term skill does not stem from a curriculum based on cognitive objectives, but rather on the practice of knowledge in real surroundings, offering the opportunity to change the learning experience. This is to say, it can incorporate a broader range of attributes in the description of the student, emphasizing tasks of competent professionals and carrying out solid training procedures (Gallardo Vigil, 2011), and that a greater capacity to solve non-routine situations (Cano, 2008; Wallin & Nokewlainen, 2019; Assad, 2018)) and tools for employability can be developed (Larraín & González, 2005). A professional who receives this type of education will perceive a greater quality of service with the resulting impact on satisfaction and loyalty to their institution.

2.2. Quality of service

In addition to creating a distinction, quality of service produces a competitive advantage (Fisk, Brown, & Bitner, 1993). Also, this variable is of great relevance when studying competitiveness (Ali et al., 2012). Several authors suggest that the quality of service is determined by the result between the services received and the service expected (Parasuraman, Zeithaml, & Berry, 1985). The literature presents a wide variety of models and metrics to measure the quality of service. Seth et al. (2005) investigates 19 different models of quality of service, showing that the most frequently used are those proposed by Parasuraman et al., (1985), (Cronin & Taylor, 1992) Teas (1993) and Ali et al. (2012). The author reports that the most commonly used tool is SERVQUAL, which measures the quality of service using the breach between the perception of the service received and the expectations of the service to be received (Parasuraman et al., 1985). Other less frequently used instruments are SEVPERF and the PE scale, where the former measures the quality of service as the perception of the service received by the consumer (Cronin and Taylor, 1992), and the latter suggests weighted scores depending on the attributes and expectations of the service (Teas, 1993). The constructions of the different models to measure quality of service are modified depending on the service being evaluated; this has motivated researchers to develop specific measurement scales depending on the service being studied

(Kamble, Dhume, Raut, & Chaudhuri, 2011; Alvarado-Lagunas, E.; Luyando-Cuevas, JR; Picazzo-Palencia, E. 2015). In this light, the quality of service provided in higher education is fundamental, as proposed in the study by Alves & Raposo (2007), who show that supporting positive perceptions of quality of service leads to a positive impact on student satisfaction, which is also related to customer loyalty (Sutawidjaya & Widiastuti, 2012).

2.3. Satisfaction

Satisfaction is a widely analyzed construct, explaining its impact in loyalty (Helgesen & Nesset, 2007). According to Ali & Amin (2014), the various definitions include concepts derived from expectations, experiences, evaluation of a service received or of the value perceived by the service rendered. In this context, Elliott & Healy (2001) suggest that satisfaction is the result of the evaluation of a teaching experience received, which conforms to a short-term attitude. Sojkin, Bartkowiak, & Skuza (2012) describe satisfaction influenced by the quality of the knowledge acquired in the learning; in this sense, the SBA could be an element. Yeo & Li (2014) suggest that the learning experience is positively affected by the support services that exist during the experience; specifically, better facilities and support systems increase the levels of student satisfaction. Moreover, high student satisfaction could lead to an increase in the level of studies desired at the same university, being a source of support for the institution; on the other hand, dissatisfied students could hurt the university's image through formal or informal complaints (Berthon, Ewing, & Napoli, 2008), (FitzPatrick, Davey, & Dai, 2012). Against this background, Bianchi & Drennan (2012) mention that student satisfaction creates long-term relationships when there are high-quality personnel in both the academic and support areas, good facilities and well-structured programs. Additionally, Barnett (2012) shows that knowing the satisfaction of university students is relevant as it reveals the quality of service provided by the agents.
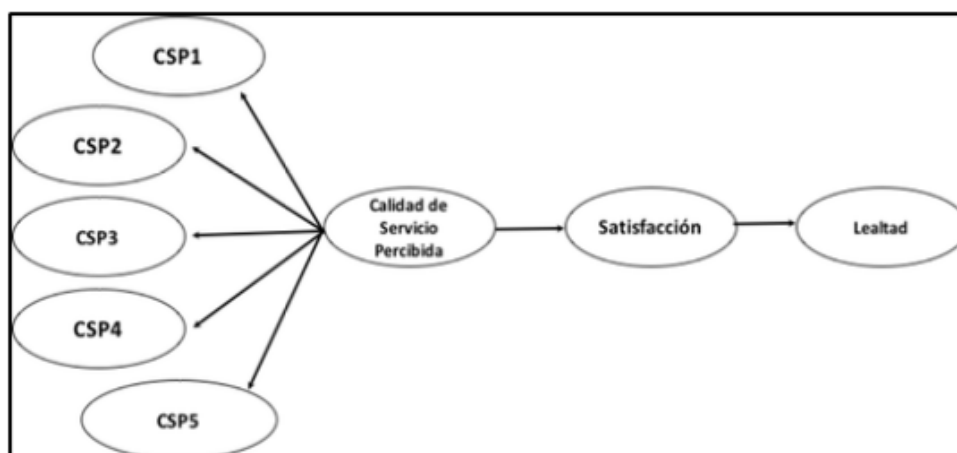
2.4. Loyalty

The increasing competition existing in higher education has led to institutions focusing on student loyalty. In this context, students with a high level of loyalty to the institution lead to a sound financial base (Carvalho & de Olivera Mota, 2010). Studies relate loyalty positively to the ability to foster long-term relationships as a way to recruit new students via recommendation, thereby developing a better financial structure (Dick & Basu, 1994; Henning-Thurau, Langer, & Hansen, 2001; Schlesinger, Cervera, & Calderón, 2014). Hence, student loyalty is a relevant indicator to measure success (Helgesen & Nesset, 2007; Rojas et al., 2009). Similarly, loyalty involves a reduction in the costs of new customer acquisition (Lam, Shankar, Erramilli, & Murthy, 2004). The study by Helgesen & Nesset (2007) suggests that students with a high degree of loyalty to an institution become a positive component of this institution. Raciti (2012) demonstrates that student loyalty is affected by the relations that can be created during the education process.

2.5. Conceptual model

By virtue of the previous conceptual development, the model proposed is shown in Figure 1. This illustrates that the perceived quality of service is a determinant of student loyalty via the effects on the associated satisfaction of the students involved. In addition, the quality of service is explained by different latent variables, including the one related to the SBA (CSP5) and its respective explanatory variables described in the following sections, which were defined based on the literature (Aritonang, 2014; Jager & Gbadamosi, 2013; Kogovsek & Kogovsek, 2013; Rojas et al., 2009).

Figure 1
Proposed model

Source: Adapted from Determinants of student loyalty in higher education:
A tested relationship approach in Latin America. Rojas-Mendez, J., Vasquez-Parraga, A.,
Kara, A., & Cerda-Urrutia, A. (2009). *Latin American Business Review, 10*(1), 21-39.

3. Materials and Methods

3.1. Measurement and questionnaire

The instrument used for the data collection is a questionnaire consisting of two sections. One section includes questions of a demographic nature and the other has 95 questions designed to measure constructs related to quality of service, teaching model, satisfaction and loyalty. Each construct contains between 3 and 8 items (indicators), that were evaluated using a Likert scale with values between 1 and 7, with the first value being strongly disagree and the last being strongly agree, respectively.

3.2. Sample and data collection

The sample consisted of 607 students who responded to the instrument, of which 590 responded to the questionnaire completely. The sample used is representative of the population of the Faculty of Economics and Business (FEN in Spanish) of the University of Talca with a 95% confidence interval.

The data was collected from students in the Business Administration, Business Informatics and Auditing and Management Control programs on the Talca campus, who were in their second, third, fourth and fifth years, respectively. The sample was selected according to participation in the total enrolment of each cohort or student level by program. The instrument was applied randomly in the different class sections of the study population and the respondents participated voluntarily. First-year students year were not included due to their limited experience at the university.

3.3 Estimation method

In the estimation of the structural model, a factor analysis was performed using a principal components analysis as the extraction method, for which the varimax rotation technique was used with the Kaiser normalization. Later, the number of dimensions was validated based on the parallel analysis according to the proposal by Garrido, Abad, & Ponsoda (2013). In addition, a bivariate correlation analysis was conducted between the different dimensions that comprise the model using Pearson's correlation. The reliability of each dimension was measured by means of the internal consistency coefficients based on Cronbach's alpha and McGregor's omega. The fit of the structural model of each dimension was done by evaluating the Comparative Fit Index (CFI), the Tucker-Lewis Index (TLI) and the root mean square error of approximation (RMSEA).

4. Results and discussion

4.1. Sample description

Table 1 show that the greatest participation corresponds to students in Business Administration, as this has the largest number of students enrolled annually. Most of these students come from public or subsidized schools.

Table 1
Description of the final sample

Variable	Detail	Absolute Frequency	Relative Frequency
Age	19	44	7.5%
	20	97	16.4%
	21	113	19.2%
	22	138	23.4%
	23 or more	198	33.6%
Gender	Women	308	52.2%
	Men	282	47.8%
Cohort	2011	57	9.7%
	2012	100	16.9%
	2013	163	27.6%
	2014	121	20.5%

	2015	149	25.3%
Program	Auditing and Management Control	168	28.5%
	Business Informatics	120	20.3%
	Business Administration	302	51.2%
School of Origin	Public	291	49.3%
	Subsidized	243	41.2%
	Private	56	9.5%

Source: Prepared by the authors.

4.2. Analysis of results

The factor analysis determined the variables that comprise each factor, reducing the variables from 95 to 32, for perceived quality of service, satisfaction and loyalty. The variables are defined next and the results of the factor analysis appear in Table 2.

4.2.1. Perceived quality of service

Infrastructure:

Inst2= The physical facilities of the FEN are comfortable, clean, pleasant and attractive;

Inst3= The FEN facilities are sufficient to fulfill their function and create a pleasant atmosphere and surroundings; Inst4= The FEN facilities are accessible to all students;

Inst5= The appearance of the physical facilities of the FEN is in harmony with the type of service (education) that it renders.

Administrative support (secretaries);

Sec2= The secretaries in my school have sufficient knowledge to respond to my concerns;

Sec3= The secretaries in my school are prepared to listen to me and to solve my problems;

Sec4= The secretaries in my school are polite to me;

Sec7= The secretaries in my school offer a fast solution.

Support by professors:

Prof4= The professors in my school are always prepared to help me;

Prof5= The professors in my school are generally available to respond with speed my requests;

Prof6= I have smooth and honest communication with my professors;

Prof7= The professors in my school clarify my questions;

Prof8= The professors in my school explain the concepts to me with sufficient clarity;

Prof9= The professors in my school serve as a model of behavior;

Prof11= The professors in my school use strategies to apply theoretical knowledge to real life;

Prof15= The professors in my school are interested in my learning; they motivate me through the material and they encourage my participation.

Support by school director:

Dir1= My School director is willing to listen to me and solve my problems;

Dir2= My School director fulfills the commitments undertaken to solve my problems;

Dir3= My School director is efficient in resolving my problems.

Skills-based education model:

Com1= The FEN as a whole motivates me to have a winner's attitude;

Com2= The FEN as a whole fosters leadership in me; Com3= The FEN as a whole encourages creativity in me; Com6= The FEN provides good practical training; Com7= The FEN is very demanding.

4.2.2. Satisfaction

Sat4= The professors in my program do the classes by applying real life concepts;

Sat6= I am satisfied with what I get as a student in the FEN (values, instructors, module contents);

Sat11= The number of classroom hours is enough to cover the curriculum.

4.3.3. Loyalty

Leal1= Faced with the same choice, I would choose the same program at the University of Talca again;

Leal2= I would recommend the FEN to another person to take a program there;

Leal3= I would stay in contact with my professors after I graduate;

Leal4= I speak favorably of my program to others

Table 2 presents the rotated component matrix

Table 2
Factor Analysis, Rotated component matrix*

Dimension	Items	Component 1	2	3	4	5	6	7
Infrastructure (CSP1)	Inst2	0.844						
	Inst3	0.862						
	Inst4	0.822						
	Inst5	0.790						
Administrative Support (CSP2)	Sec2		0.774					
	Sec3		0.863					
	Sec4		0.833					
	Sec7		0.728					
Professors (CSP3)	Prof4			0.708				
	Prof5			0.795				
	Prof6			0.705				
	Prof7			0.765				
	Prof8			0.714				
	Prof9			0.669				
	Prof11			0.487				
	Prof15			0.542				
Director (CSP4)	Dir1				0.883			
	Dir2				0.896			
	Dir3				0.887			
Skills-based education model	Com1					0.738		
	Com2					0.776		
	Com3					0.766		
	Com6					0.707		
	Com7					0.734		

Factor	Item							
Loyalty (L)	Leal1						0.753	
	Leal2						0.774	
	Leal3						0.523	
	Leal4						0.726	
Satisfaction (S)	Sat3							0.814
	Sat4							0.570
	Sat6							0.376
	Sat11							0.415

Source: Prepared by the authors. *Extraction method: Principal components analysis. Method of rotationon: Varimax with the Kaiser normalization.

Table 3 presents the results of the different analyses grouped in Pearson correlations (PC), descriptive statistics (DS), indices of reliability (IR) and indices of validity (IV) with their respective p values. The bivariate correlations ranged between 0.267 and 0.629. The indices of reliability were high, except for the dimension of satisfaction, in which both Cronbach's alpha and McGregor's omega were below 0.7; however, they reached values 0.624 and 0.633, respectively. In all cases, the proposed items identified a single dimension.

A resume of the structural model is in Figure 2, where the main correlations between the factors included are shown. The details of the model estimation are in Figure 3.

Figure 2
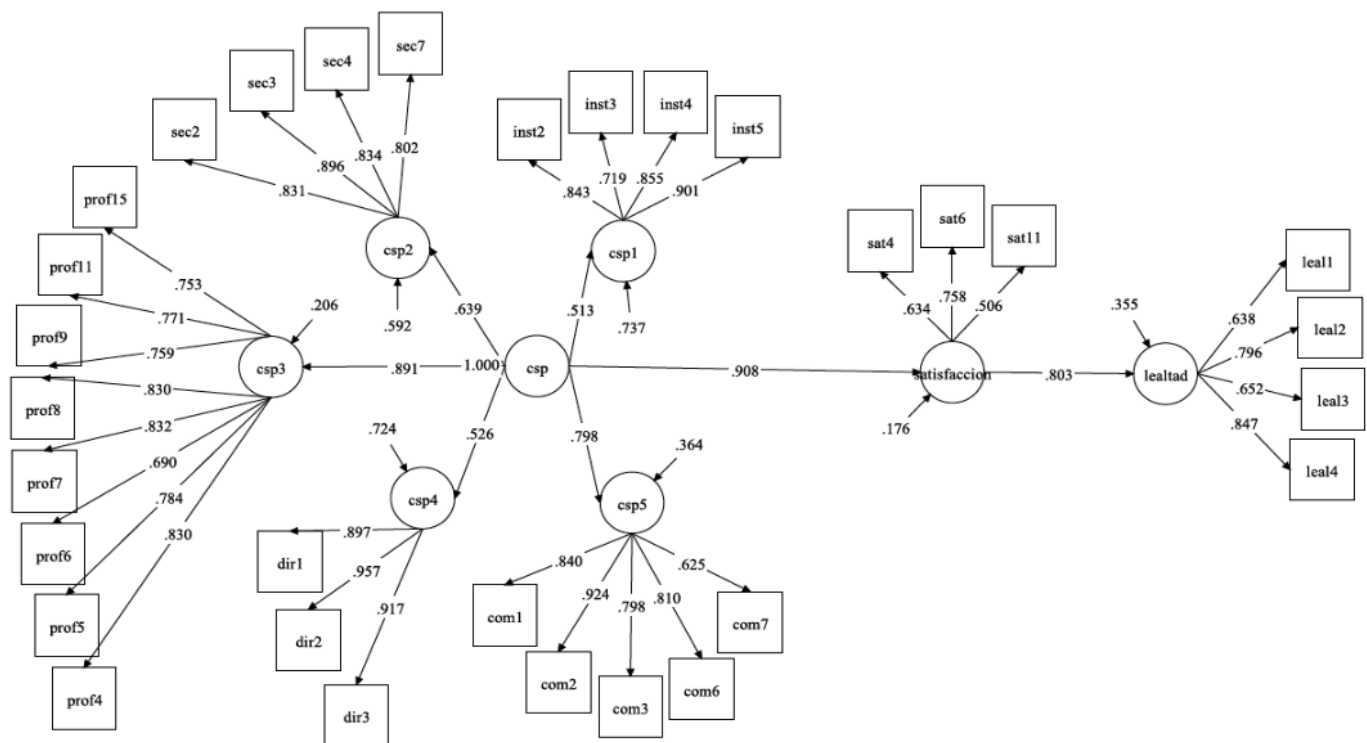Summary of the structural model

NOTE: ((427) = 1273.108, p < .05, /df = 2.98, RMSEA = .058, CFI = .943, TLI = .938
Source: Authors' own estimation

Figure 3
Detailed structural model

Source: Authors' own estimation

In the model, the perceived quality of service explains 82.5% of the satisfaction, which also explains 64.5% of the loyalty. With respect to the measurement of the perceived quality of service, the factor CSP3 () is the one most strongly explained, reaching 79.4%, followed by CSP5 (Skills-based education model) with 63.9% and CSP2 (Administrative Support) with 40.8%. The factors CSP1 (Infrastructure) and CSP4 (Director) explain their variance with less than 30%.

4.3. Discussion

The aim of this study is to define a deterministic model of loyalty to a university for students of the area of economics and business. Similar to other factors, those such as quality of service influence satisfaction and this leads to greater student loyalty to a university (Rojas-Mendez, Vasquez-Parraga, Kara, & Cerda, 2009; Aritonang, 2014). Specifically, in this study, the latent variable associated with perceived quality of the professors and with the skills-based education model has greater explanatory power. Variables like willingness, communication, teaching method and a relationship of trust with the professors are important in the perceived quality (Elliott & Healy, 2001).

On the other hand, the variables associated with the skills-based education model, including 'they motivate me to have a winner's attitude', 'they foster leadership in me', 'they encourage creativity in me', 'I am provided with good practical training', and 'it is very demanding' are variables that positively affect the perceived quality, and therefore student satisfaction and loyalty. Hence, the results are consistent with what various authors suggest regarding the need for universities to consider soft skills in their education processes (Ruiz-Tagle & Schmal, 2009). Unlike Rojas et al. (2009), satisfaction relates directly to loyalty, and not via commitment and trust, as they suggest in their study.

Jager & Gbadamosi (2013) and Cheung, Yuen, Yuen, & Cheng (2011) mention that the quality of education is an important factor in the development of universities, and that students are considered "priority customers". From there, the agreement of the loyalty model presented here, where not only the quality of the professors assumes greater importance, but also the education model, incorporates not only cognitive aspects, but also soft skills.

5. Conclusions

The conclusion drawn from these results is that student loyalty is positively determined by their satisfaction and is directly affected by the perceived quality of service. Likewise, the skills-based education model positively affects the quality of service, as do academic and administrative (secretaries and director) support and infrastructure. In addition, this study identifies the main variables that affect the perceived quality of service and student satisfaction, opening opportunities to improve universities services. Special emphasis should be placed on developing soft skills that enable students to develop a winner's attitude, leadership skills, greater creativity and a high level of practical application of concepts in organizations.

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