

CO-CREATION, VALUE-IN-USE, SATISFACTION, AND SWITCHING COSTS AS ANTECEDENTS OF HIGHER EDUCATION STUDENTS RETENTION

COCRIAÇÃO, VALOR DE USO, SATISFAÇÃO E CUSTOS DE TROÇA COMO ANTECEDENTES DA RETENÇÃO DE CLIENTES NO ENSINO SUPERIOR

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Guilherme Coelho Nunes¹

Gabriel Sperandio Milan²

Luciene Eberle³

Deonir De Toni³

Pelayo Munhoz Olea⁴

1 Faculdade Fisul, Garibaldi, Rio Grande do Sul, Brazil.

2 Universidade do Vale do Rio dos Sinos (Unisinos), São Leopoldo, Rio Grande do Sul, Brazil.

3 Universidade de Caxias do Sul (UCS), Caxias do Sul, Rio Grande do Sul, Brazil.

4 Universidade Federal do Rio Grande (FURG), Rio Grande, Rio Grande do Sul, Brazil.

ABSTRACT

Purpose – The research aimed to propose and validate a Theoretical Model to understand how the relationship between customers (service users) and service providers might result in customer retention in the higher education context.

Design/methodology/approach – The research was implemented through a survey applied to 301 students of a Higher Education Institution, and the data were analyzed through Structural Equation Modeling (SEM).

Findings – The results indicate that value co-creation impacts customer satisfaction and value-in-use, customer satisfaction impacts switching costs and customer retention, and switching costs impact customer retention. However, value-in-use did not significantly impact customer retention, opposing to the expected results.

Originality/value – There is no consensus on which constructs effectively are the antecedents of customer retention for the most diverse types of services. For this reason, this research aimed to validate a Theoretical Model that contemplates the constructs of value co-creation, value-in-use, customer satisfaction, and switching costs as antecedents of customer retention in the higher education context.

Keywords: Value Co-creation; Value-in-Use; Customer Satisfaction; Switching Costs; Customer Retention.



RESUMO

Objetivo – A pesquisa teve como objetivo propor e validar um Modelo Teórico, com o intuito de compreender como a relação entre clientes (usuários do serviço) e prestadores de serviços pode resultar na retenção de clientes, no contexto do ensino superior.

Design/metodologia/abordagem – A pesquisa foi implementada através de uma pesquisa do tipo *survey* aplicada a 301 alunos de uma Instituição de Ensino Superior sendo que os dados foram analisados por meio da MEE – Modelagem de Equações Estruturais.

Resultados – Os resultados indicaram que a cocriação de valor impacta na satisfação de clientes e no valor de uso, que a satisfação de clientes impacta nos custos de troca e na retenção de clientes e que os custos de troca impactam na retenção de clientes. Porém, o valor de uso não apresentou impacto significativo na retenção de clientes, contrariando os resultados esperados.

Originalidade/valor – Não há um consenso de quais construtos são antecedentes efetivos da retenção de clientes para os mais diversos tipos de serviços. Para suprir esta lacuna, a pesquisa teve como foco validar um Modelo Teórico que contempla os construtos cocriação, valor de uso, construto este ainda pouco investigado, satisfação de clientes e custos de troca como antecedentes da retenção de clientes (alunos) no contexto do ensino superior.

Palavras-chave: Cocriação de Valor; Valor de Uso; Satisfação de Clientes; Custos de Troca; Retenção de Clientes.

1 INTRODUCTION

The study of relational practices is embedded in relationship marketing, and began in the 1970s and developed from the Nordic School of Services studies. Marketing went from being understood as a transactional approach (merely buying and selling something) to be perceived as a relational approach (the sale of something as a consequence of the relationship established by a company and its client) (Parvatiyar & Sheth, 2000). However, as a school of thought, relationship marketing gained prominence in the 1990s from the emphasis on relational nature, mainly linked to service marketing (Grönroos, 2000).

For providing such benefits, relational practices, in the context of relationship marketing, are treated by researchers as a defensive marketing strategy (Milan et al., 2015b), since it seeks to improve the economic performance of companies from the retention of existing customers (current), and is considered a possible source of competitive advantage for organizations (Palmatier et al., 2006; Cambra-Fierro, Melero-Polo, & Sese, 2015).

Nevertheless, there is still no “universal model” or a specific set of constructs that guarantee the explanation of the phenomenon of customer retention or even loyalty for all types of services (Kumar & Shah, 2015; Milan et al., 2018). That is why researchers encourage new studies testing different models, constructs, and relationships among them to verify what would be the best antecedents (or determinants) of customer retention in the various types of services (Elsharnouby, 2015; Duke, 2014).

The educational sector, as in other business relationships, can benefit from the advantages of using relational practices, notably because the learning relationships focus on the interactions between customers (students) and service providers (the educational institution and its teachers) (Milan et al., 2015a). From this perspective, Hemsley-Brown & Oplatka (2006) stated that marketing theories and concepts have offered effectiveness in the business context and have been gradually adopted by researchers and managers working within the Higher Education Institutions (HEIs).

Nevertheless, higher education services peculiarities demand care in applying these theories, especially in the country. Higher education in Brazil, in the period between 1995 and 2010



showed an increase of 262.52% in the total number of enrollments, noting that the major expansion occurred in the private network, with a growth of 347.15%, compared to the 134.58% growth in the public network (Mancebo, Vale & Martins, 2015). However, the latest data published by INEP (2016) showed that the number of enrollments in the HEIs tends to decrease in the percentage of annual growth. For this reason, the sector is promising to carry out studies that seek elements that may contribute to the reversal of this scenario, suggesting the urgency of qualification in the management of HEIs in the country.

The importance of the relational and collaborative nature of service marketing has also gained prominence in the debate of marketing and services logics. Service-dominant Logic (S-DL) developed by Vargo & Lusch (2004), Service Logic (SL) proposed by Grönroos (2006), and Customer-dominant Logic (C-DL) from Heinonen et al. (2010), brought new ideas and visions about the approach traditionally given to service as in marketing a more product-oriented approach prevailed, referred by the authors as Goods-dominant Logic (G-DL).

From S-DL, SL, and C-DL perspectives, we sought to propose and validate a Theoretical Model to understand how the relationship between customers (service users) and service providers can result in customer retention. To this end, empirical research was proposed to observe the relationships between value co-creation, value-in-use, customer satisfaction, and switching costs as antecedents of customer retention in the Brazilian higher education context. In other words, the research was contextualized in educational services, specifically with customers (students) of a Higher Education Institution (HEI) located in the Serra Gaúcha, Brazil.

2 THEORETICAL BACKGROUND AND RESEARCH HYPOTHESES

The interactive character or nature of service gained importance with the development of research in the services area and the study developed by Vargo & Lusch (2004). The authors proposed a new marketing logic, the Service-dominant Logic (S-DL), placing the co-creation concept in the central of the debates. A fundamental premise of Service-dominant Logic (S-DL) attests that the client, the customer, or the service user is always a value co-creator. In other words, companies no longer propose value, but it emerges from the collaboration between the company and its customers, from an effective interaction of the parties involved (Vargo & Lusch, 2004, 2008; Kuzgun & Asugman, 2015).

Accordingly, Payne, Storbacka & Frow (2008) also recognized that the customer is always a value co-creator in service. They add that value co-creation exists when a superior quality service is provided according to the customer value determination. Thus, the service provider would not be limited to just offering a value proposition but would effectively influence the customer realization or delivery of value from co-creation practices in their interactions with the customer (Grönroos; Gummerus, 2014; Shamim, Ghazali & Albinsson, 2017). Besides, organizations that involve their customers in value co-creation processes are more likely to develop lasting long-term relationships (Cossío-Silva et al., 2016).

In the higher education context, Díaz-Mendez & Gummesson (2012) realized that the projected and obtained value that students expect to receive from HEIs is a joint result of the teacher quality and their own learning and knowledge capacities. Therefore education should be approached from the value co-creation perspective. More specifically, in private higher education, co-creation is relevant since the customer (student) is responsible for part of the expected performance, assuming an active role in knowledge construction and learning (Brambilla & Damacena, 2011).

According to Antonacopoulou (2009), the objective of co-creating value in education is to learn how to collaborate and learn how to learn through collaboration between the parties involved (HEI, teachers, technical staff, and students). For this reason, Brambilla & Damacena (2012) affirmed



that value co-creation is an imperative practice in the service environment and indispensable in education, treating students as active subjects in the teaching-learning process.

The value-in-use of services is proposed as a completely different approach than the traditional way of thinking exchange value or perceived value. Value-in-use is the value that emerges when the service provided by the company and the use of the service by the customer are incorporated into the context, activities, practices experienced, and customer experiences regarding the interactions with the company providing the service. The authors also indicate that the value-in-use should include everything that the service provider offers or makes available for the customer to use for the personal life or business benefit (Heinonen et al., 2010; Kuzgun & Asugman, 2015).

Grönroos & Gummerus (2014) sought to present a more complete and comprehensive definition of value-in-use, (co)created during the use of available resources and always created and determined by the customer. Therefore, the creation of value-in-use is how the customer extracts value from the use of resources made available by the service provider (Kim et al., 2019), causing value creation or co-creation to result in the value-in-use. Despite the use of the term creation, it is not always instrumentally created and may emerge as mere value-in-use or even as value-in-use that has emerged from co-creation through effective interaction between the parties (service provider and customer) (Grönroos & Gummerus, 2014; Medberg & Grönroos, 2020).

Grönroos & Voima (2013) proposed a value understanding in which the exchange value (potential value-in-use) is created in the service provider sphere since the value-in-use cannot exist before created or experienced. These authors assumed the service provider's possibility of participating in the value co-creation in the customer interaction sphere. However, value-in-use is only created from the effective use of the product and/or service in the customer sphere. According to Sweeney, Plewa & Zurbrugg (2018), value-in-use reflects the degree (satisfactory or unsatisfactory, better or worse) customers perceive the consumption experience.

In this sense, Brambilla & Damacena (2012) indicated that the emphasis of value, which emerges from value co-creation, migrates to the value-in-use as the co-creative practice gives rise to complex relationships of exchange, resulting in the value-in-use for the customer. In educational services, co-creation means involvement in obtaining an educational quality, when customer (student) engagement increases their attention and willingness to interact with the service provider (the HEI), its staff (teachers and employees), and other resources available and possibly their perception of value-in-use. Thus, the interaction between HEI, teachers, and students is fundamental for maximizing value for customers (students) (Brambilla & Damacena, 2011). According to this thought, the first hypothesis of the research is presented:

H1: Value co-creation has a positive and significant impact on services value-in-use for students.

As far as services are concerned, customer satisfaction arises from the customer assessment of the service provided, taking as a parameter their needs, desires, and expectations, and depends on individual perceptions of value (Zeithaml, Berry & Parasuraman, 1996). Especially in educational services, students perceived quality also influences their satisfaction with the services experienced and with the HEIs (Eberle, Milan & Dorion, 2016). In this sense, Applenton-Knapp & Krentler (2006) commented that customer satisfaction is a post-purchasing decision construct and, in many cases, takes place after value co-creation.

Customers' involvement in the value co-creation processes influences their quality evaluation and final feeling of (dis)satisfaction because their involvement allows the final result of the process, the benefits arising from the product and/or service, to be fully adapted convergent to their needs or desires. Hence, the existing co-creation behavior between customer-supplier/service provider positively relates to their satisfaction (Vega-Vázquez, Revilla-Camacho & Cossío-Silva, 2013; Zhang, Fong & Li, 2019).



Complementing this idea, Brambilla & Damacena (2011) highlighted that the relationship between the service quality and customer satisfaction is possibly achieved by co-creation, as value co-creation alters the relevance of customer involvement and satisfaction with the company and the products and/or services used, as well as its effects on their possible retention and loyalty. In this way, customer satisfaction results from value co-creation by providing high quality and added value service.

Duque (2014) pointed out the difficulty in establishing general criteria to evaluate an HEI performance as higher education covers a wide range of objectives and stakeholders involved. The author emphasized that much of the traditional literature on student satisfaction has addressed the environment, involvement, and student perceived quality. Nevertheless, the new perspective of the student's active participation as a value co-creator is better aligned with higher education theories.

As a result, in higher education, value co-creation as an antecedent (or determinant) of customer satisfaction has been confirmed by several empirical studies, such as the studies developed by Brambilla & Damacena (2012), Vega-Vázquez, Revilla-Camacho & Cossío-Silva (2013), and Giner & Rillo (2015). Based on these arguments, the second research hypothesis emerges:

H2: Value co-creation has a positive and significant impact on customer (student) satisfaction.

The role of switching costs as a construct in relationship marketing models has been a constant theme, given its relevance to companies' financial stability (Stenbacka & Takalo, 2019). Eberle, Milan & Matos (2016) pointed out that switching costs have been applied to relational exchange models in different roles, as a mediating construct (Aydin & Özer, 2006), as a moderating construct (Dagger & David, 2012), and as an antecedent of customer retention (Edward & Sahadev, 2011), as tested in this study.

Vázquez-Casielles, Suárez-Álvarez & Río-Lanz (2009) recognized that switching costs could be classified as positive or negative. The positive derives from the loss risks of relational benefits, and the negative derives from penalties or obstacles that maintain the relationship even in cases the customer shows dissatisfaction. Different contexts, with different services, should present large variations in switching costs, depending on their natures and consumption forms (Edward & Sahadev, 2011).

Switching costs, as one of the antecedent constructs of customer retention, is supported by authors such as Edward & Sahadev (2011) and Burnham, Frels & Mahajan (2003), who pointed out switching costs as a tool that can be consciously applied in improving benefits and value for the customer. A higher service performance will provide an increase in customer satisfaction levels and, consequently, the perception of sacrifice involved in switching service providers (or supplier), supporting the switching costs as a positive mediator between customer satisfaction and retention. Based on the above, the third research hypothesis was formulated:

H3: Customer (student) satisfaction has a positive and significant impact on switching costs.

Customer value or customer perceived value emerges as an antecedent of customer retention in studies by several authors (Spiteri & Dion, 2004; Troccoli, 2009), as well as service quality as an antecedent of customer retention (Keiningham et al., 2007). In a relational logic, Grönroos & Voima (2013) postulated that the customer (student) perceived value is the value-in-use because it emphasizes the continuous process by which the customer evaluates their service experiences and changes (or not) their purchasing behavior.

In the study of customer retention in a higher education context, Milan et al. (2015a) indicated that customer (student) satisfaction alone does not guarantee customer (student) commitment to a lasting relationship with the organization (HEI). Therefore, it is necessary to analyze other



variables, besides satisfaction, to strengthen customer retention. Besides, Elsharnouby (2015) pointed out that customer satisfaction, understood as the result of the comparison between expectation and experience of use or consumption, is problematic in higher education. Most university students do not have expectations fully formed by contact with other HEIs to support their comparisons.

In this sense, Duque (2014) commented that students perceive the results of value co-creation in education, in teaching and student learning context, as the services value-in-use, reducing their course abandonment (evasion) probability and retaining to the HEI. In the context of Brazilian higher education, Brambilla & Damacena (2012) pointed out that co-creative practices (interactions between students and teachers / HEIs) result in services value-in-use. As a result, value occurs as students progress in the course, based on their experiences, culminating in their retention at the HEI. According to this logic, the fourth research hypothesis was formulated:

H4: Service value-in-use has a positive and significant impact on customer (student) retention.

Another relationship to be tested is the impact of customer satisfaction on customer retention. Customer satisfaction, seen as the overall affective evaluation of the service offered and delivered to the customer, can positively impact retention and customer loyalty. This belief can lead companies to certain satisfaction traps; the company may understand that monitoring customer satisfaction levels can predict their retention levels or, if applicable, customer loyalty, which does not always occur (Dagger & David, 2012).

Customer satisfaction possible direct consequences are customer retention and loyalty and can impact the future repurchase of other services offered by the same company (Brambilla & Damacena, 2011). To this end, Giner & Rillo (2015) developed a study in higher education, in which value co-creation had a positive and direct impact on student retention and a positive and indirect impact through student satisfaction.

The direct and positive relationship between the customer (student) satisfaction and retention has also been confirmed by several authors, including Kumar & Shah (2009) and Marzo-Navarro, Pedraja-Iglesias & Rivera-Torres (2005). In this direction, Cossío-Silva et al. (2016) have shown that customer satisfaction is a determinant or antecedent of customer retention, with a positive and significant impact, directly (satisfaction-retention) or as, in some cases, a significant mediating construct (Han et al., 2018).

Therefore, the level of customer satisfaction impacts two aspects that can be related to customer retention: repurchase intention and positive word-of-mouth (Matos & Rossi, 2008). In education, as in other sectors of the economy, student satisfaction with private higher education is linked to the economic performance of HEIs, translated into their ability to invest in the training of teachers and employees and infrastructure and other resources available. Thus, student satisfaction directly impacts the likelihood of student retention at the HEI (Schertzer & Schertzer, 2004; Boyd, Liu & Horissian, 2020). According to this line of argument, it was possible to formulate the fifth research hypothesis:

H5: Customer (student) satisfaction has a positive and significant impact on customer (student) retention.

It is worth mentioning that switching costs have been studied to directly affect the purchase choices (Jones et al., 2007) and may reinforce the repurchase intention and customer retention. In this sense, Schoefer & Diamantopoulos (2008) highlighted that as customers perceive high switching costs, retention is no longer the sole responsibility of customer satisfaction, but also of the obstacles that prevent the relationship breakup.



According to Yanamandram & White (2006), switching costs tend to be higher for service customers than for product customers, not only because of the more relational characteristics of the services but because of the intangibility and heterogeneity inherent to the services. In service environments, the greater the intangibility and heterogeneity, the more significant the impact of the switching costs for customer retention, as the cognitive efforts needed to evaluate alternatives will also be more significant (Hodovic-Babic, Mehic & Arlanagic, 2011).

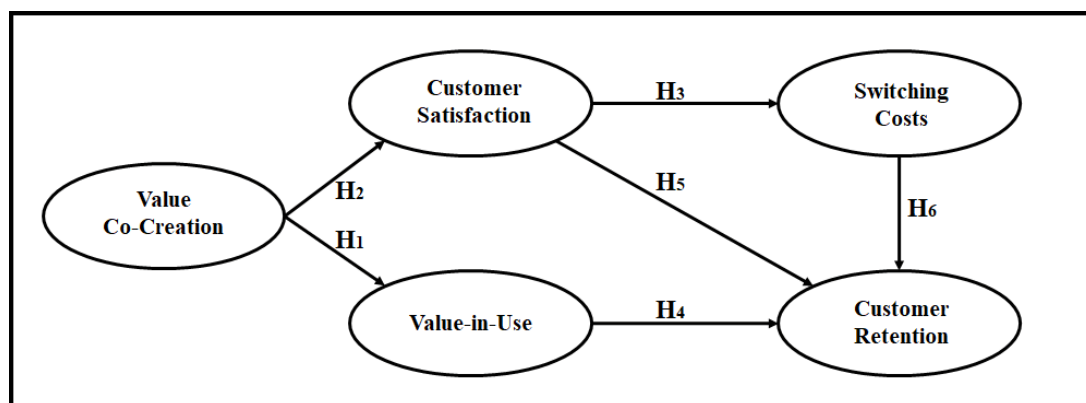
For Fornell (1992), switching costs are search costs, transaction costs, learning costs, loyalty discounts, and emotional costs, and are applied to discourage the end of the relationship, increasing customer retention. Woisetschläger, Lentz & Evanschitzky (2011) pointed out that several studies evidence the direct and positive impact of switching costs on customer retention (Aydin & Özer, 2006; Tsai et al., 2006; Wieringa & Verhoef, 2007; Edward & Sahadev, 2011; Milan, Eberle & Bebbler, 2015; Kim et al., 2019).

Hence, N'Goala (2007) and Han et al. (2018) stated that the switching costs are fundamental to maintaining the relationship and, consequently, retaining customers. Once an exchange relationship is established, customers will be prone by inertia not to exchange service providers, as long as no competitive actions occur, since the search for information and offer regarding new providers is costly, so that the costs of switching become barriers to interrupting their relationships, thus increasing customer retention (Wong, 2011; Konuk & Konuk, 2013; Stenbacka & Takalo, 2019). Based on the above, the sixth research hypothesis was formulated:

H6: Switching costs have a positive and significant impact on customer (student) retention.

Figure 1 presents the proposed Theoretical Model, with its respective hypothetical relationships (research hypotheses).

Figure 1: Proposed Theoretical Model



Source: Elaborated by the authors.

3 RESEARCH METHOD

The research method used in this study development was quantitative and descriptive (Malhotra, Nunan & Birks, 2017), implemented through a single cross-section survey (Fowler Jr., 2009; Fink, 2013; Saris & Gallhofer, 2014).

For the operationalization of the constructs, we used a seven-point Likert scale, ranging from “1: I totally disagree” to “7: I totally agree” (Bearden, Netemeyer & Haws, 2011), as it meets

the essential requirement of continuous distribution mandatory for structural equation modeling. To facilitate understanding of the scales used in the research, Figure 2 and Appendix A are elucidative.

Figure 2: Constructs operationalization

Constructs	Labels	Number of items	Authors
Co-creation	COCRE	6	Dal Bó, Milan & De Toni (2018), based on Ngo & O’Cass (2009)
Value-in-use	VLUSE	5	Dal Bó, Milan & De Toni (2018), based on Wang et al. (2004)
Customer satisfaction	SATIS	4	Chan, Yin & Lam (2010) based on Oliver & Swan (1989) and Lam et al. (2004)
Switching costs	SWTCO	4	Eberle, Milan & Matos (2016), based on Edward & Sahadev (2011) and Dagger & David (2012)
Customer retention	RETEN	5	Zeithaml, Berry & Parasuraman (1996)

Source: Elaborated by the authors.

The data collection instrument was submitted to content or face validity (Fink, 2013; Malhotra, Nunan & Birks, 2017) to three experts in the area, professors Doctors in Administration, experienced in research in marketing, to validate the scales and depurate the individual items, and evaluate the questionnaire layout and the language used (Malhotra, Nunan & Birks, 2017; Hair Jr. et al., 2018).

Besides, twelve respondents participated in a pre-test. The average time to complete the questionnaire was eight minutes, with no indication of difficulties in interpreting or understanding the questionnaire nor suggestions for improvement. It is important to note that these cases were not incorporated into the final sample of the survey.

3.1 Target Population and Sample

The research target population was management courses undergraduates of a University located in the municipality of Garibaldi (RS – Brazil). This target population choice is due to the ease (convenience) of access to the respondents and the researched HEI availability to allow and support the questionnaire application in their facilities, specifically in the classrooms and, mainly, their interest in the survey results. It is worth noting that the researchers carried out the data collection in person, with printed questionnaires handed over by themselves.

According to the HEI data, the number of students regularly enrolled and graduating during the research period was 459, of which 402 students were enrolled in higher education courses in the management area: Bachelor Degree in Business and Accounting, Technologist in Commercial Management, and Human Resources Management.

The sampling process was non-probabilistic for convenience as it involves the selection of sample elements that are available to take part in the study and provide the data or information necessary to carry out the research (Blair & Blair, 2015; Malhotra, Nunan & Birks, 2017; Hair Jr. et al., 2018).

Using the Structural Equation Modeling (SEM) technique, the literature assumptions concerning sample size were used. Byrne (2016) suggested that the sample size should vary between



200 to 250 valid cases depending on the SEM complexity and use. The data collection was carried out in November 2017. In the process of data tabulation, each questionnaire was previously coded by a sequential number to allow its identification, as suggested by Malhotra, Nunan & Birks (2017) and Hair Jr. et al. (2018).

3.2 Data Analysis Procedures

The data analysis was carried out utilizing multivariate statistics, the SEM technique, which represents a combination of multivariate techniques and procedures (Kline, 2015; Byrne, 2016; Arbuckle, 2017), and was performed using IBM SPSS Statistics 22 and AMOS 20 software for the respective relevant statistical analyses.

The procedures in the preliminary analysis of the data were the verification of the existence of missing and outliers, as well as the analyses related to the distribution of the data and the relationship between the latent variables, through the tests of normality, homoscedasticity, linearity, and multicollinearity (Malhotra, Nunan & Birks, 2017; Hair Jr. et al., 2018).

Based on the elimination criterion proposed by Hair Jr. et al. (2018), missing values that represent less than 10% of the data and do not present a random pattern can be ignored and will not be excluded from the sample (Davey & Savla, 2010; Osborne, 2013; Hair Jr. et al., 2018). Consequently, we eliminated two questionnaires (or cases) because they had three or more missings. The other questionnaires presented one or two missings and had their values substituted by the items' mean value.

When checking outliers, the literature indicates that both univariate and multivariate analyses should be used (Kline, 2015; Hair Jr. et al., 2018). Regarding univariate outliers, by the elimination criteria of Kline (2015) through the test of Z-Scores. Therefore, three questionnaires were eliminated from the sample because they had values greater than 3. Concerning the multivariate outliers, the Mahalanobis distance was used by the values of D^2/df . The Mahalanobis distance was divided by the degrees of freedom ($df = 25$) for each of the questionnaires, using a significance of $p < 0.005$, resulting in only two questionnaires excluded, reducing the number of the final sample to 301 valid cases.

The multivariate analysis assumptions tests refer to different estimation methods that need to be clear and the necessary procedures to be used when these assumptions are not met (Tabachnick & Fidell, 2012; Malhotra, Nunan & Birks, 2017; Hair Jr. et al., 2018). Tests for normality, homoscedasticity, linearity, and multicollinearity also showed acceptable levels for all variables.

4 RESULTS PRESENTATION

4.1 Sample Characterization

The final sample ($n = 301$ cases) pointed to a majority of female (women), representing 58.8% (177 respondents), with the age of respondents ranging from 17 to 56 years old, and a concentration in the age group between 17 and 24 years old (45.2% or 136 cases). Concerning the individual monthly income, the highest number of respondents (33.9% or 102 cases) is in the range of up to R\$ 4,156.00 per month, observing that the majority of respondents do not have any financial subsidy to support their studies, representing (82.06% or 247 cases).

The distribution of respondents, by course, presented a majority of students of the Bachelor in Administration (38.87%), with 117 cases (or students); 21.93% of respondents, or 66 students, attending the Commercial Management Technologist; and 19.60% of respondents, or 59 students, attending the Accounting Bachelor and Human Resources Management Technologist courses.



4.2 Constructs Individual Validation

The individual validation of the constructs evaluated unidimensionality, reliability, convergent validity, and discriminant validity. The unidimensionality was performed through Exploratory Factor Analysis (EFA), applying main components and Varimax orthogonal rotation (Johnson & Wickern, 2007; Mulaik, 2010; Afifi, May & Clark, 2012), and the EFA factor loadings ranged between 0.571 and 0.809, considered satisfactory (Johnson & Wickern, 2007; Hair Jr. et al., 2018).

Cronbach's Alpha and Composite Reliability values were satisfactory. Respectively, they varied from 0.91 to 0.73 and from 0.82 to 0.93; the ideal values are above 0.7 for both measures (Malhotra, Nunan & Birks, 2017). Regarding the variance explained of the constructs, the indexes varied from 0.55 to 0.80. As for the extracted variance, the indexes varied from 0.68 to 0.83, except for Switching Costs, which presented a value of 0.48, an index below that recommended but considered a value in a border zone, consequently, acceptable (Hair Jr. et al., 2018). Table 1 presents these results.

Table 1: Cronbach's Alpha, composite reliability, variance explained, and variance extracted

Constructs	Cronbach's Alpha	Composite Reliability	Variance Explained	Variance Extracted
Value Co-creation	0.88	0.93	0.63	0.73
Value-in-Use	0.86	0.92	0.65	0.68
Customer Satisfaction	0.91	0.95	0.80	0.83
Switching Costs	0.73	0.82	0.62	0.48
Customer Retention	0.72	0.93	0.55	0.74

Source: Research data.

The method used to check the discriminant validity was proposed by Fornell & Larcker (1981), in which the extracted variances and the shared variances are compared, calculated by the squared correlations between a pair of constructs. According to the data presented in Table 2, the Value-in-Use construct presented an extracted variance (0.68) lower than the shared variance with the Customer Satisfaction construct (0.79), indicating redundancy between these two constructs as they are highly correlated.

Table 2: Discriminant validity

Constructs	Value Co-creation	Value-in-Use	Customer Satisfaction	Switching Costs	Customer Retention
Value Co-creation	0.73				
Value-in-Use	0.61	0.68			
Customer Satisfaction	0.57	0.79	0.83		
Switching Costs	0.11	0.21	0.20	0.48	
Customer Retention	0.33	0.49	0.68	0.22	0.74

Source: Research data.

For these cases, Bagozzi & Phillips (1982) recommended a test that compares the values of χ^2 in the fixed model and the values of χ^2 in the free model. The difference between the fixed model and the free model is significant, indicating that there is no correlation between the constructs. Therefore, these values were considered acceptable, confirming the discriminant validity of the tested constructs, according to the results presented in Table 3.

Table 3: Bagozzi & Phillips test

Construct 1	Construct 2	χ^2 Fixed Model	χ^2 Free Model	Dif.	Sig.
Value-in-Use	Customer Satisfaction	105.30	79.29	26.01	0.000

Source: Research data.

4.3 Theoretical Model Validation

The goodness-of-fit indexes were analyzed to validate the proposed Theoretical Model (Blunch, 2013; Kline, 2015; Byrne, 2016; Arbuckle, 2017; Hair Jr. et al., 2018) by checking the model fit indexes: GFI, AGFI, RMSEA, TLI, NFI, and CFI.

Table 4 shows the final model fit indexes of the tested model. The RMSEA obtained a value of 0.054, indicating a satisfactory level of adequacy according to the criteria of Kline (2015), Byrne (2016), and Hair Jr. et al. (2018), which considers acceptable values between 0.05 and 0.08. The indexes for the TLI (0.948), NFI (0.912), and CFI (0.957) fit measures also indicate satisfactory adequacy levels, as they presented values higher than 0.90 (Kline, 2015; Byrne, 2016; Hair Jr. et al., 2018).

Table 4: Proposed Theoretical Model fit indexes

Goodness-of-fit Indexes	Values
GFI	0.892
AGFI	0.859
RMSEA	0.054
TLI	0.948
NFI	0.912
CFI	0.957

Source: Research data.

For the validation of the proposed Theoretical Model, the model fit indexes are acceptable (RMSEA: 0.054, TLI: 0.948, NFI: 0.912, and CFI: 0.957), following the values recommended by the literature (Kline, 2015; Byrne, 2016). However, the values obtained for the GFI (0.892) and AGFI (0.859) indexes were slightly lower than those recommended by the literature, that defines values as appropriate when equal to or above 0.90 (Kline, 2011; Byrne, 2016; Hair Jr. et al., 2018), but can be considered as borderline values, since they present indexes between 0.85 and 0.90. Even Bagozzi & Yi (2012) defended that there are no definitive cut criteria (in this case the parameter of 0.90) for GFI and AGFI because both depend on the sample size and that such measures demonstrate that they do not behave as well as the other fit indexes, implying the other indexes are more solid criteria for the model validation.



After this step, the hypotheses test was performed, determining the estimated regression coefficients' significance and magnitude, revealing the amount of change expected in the dependent variable for each unit of change of the independent variable (Hair Jr. et al., 2018). In cases where the regression coefficient presents significant values, the relationship between the two variables (constructs) is empirically confirmed (Kline, 2015; Byrne, 2016). Table 5 presents these results.

Table 5: Hypotheses test of the proposed Theoretical Model

Hy	Structural Paths	Non-standardized coefficient (b)	Errors	Standardized coefficient (β)	t-values	p	Result
H1	COCRE → VLUSE	1.043	0.084	0.907	12.447	p < 0.001	Supported
H2	COCRE → SATIS	0.893	0.078	0.861	11.422	p < 0.001	Supported
H3	SATIS → SWTCO	0.617	0.094	0.454	6.543	p < 0.001	Supported
H4	VLUSE → RETEN	-0.081	0.083	-0.071	-0.974	p = 0.330	Not supported
H5	SATIS → RETEN	1.023	0.116	0.810	8.835	p < 0.001	Supported
H6	SWTCO → RETEN	0.134	0.051	0.144	2.641	p = 0.008	Supported

Source: Research data.

From the results obtained in the hypothesis test, of the six initial research hypotheses, five were statistically supported: **H1** (value co-creation has a positive and significant impact on services value-in-use for students, $\beta = 0.907$, $p < 0.001$); **H2** (value co-creation has a positive and significant impact on customer (student) satisfaction, $\beta = 0.861$, $p < 0.001$); **H3** (customer (student) satisfaction has a positive and significant impact on switching costs, $\beta = 0.454$, $p < 0.001$); **H5** (customer (student) satisfaction has a positive and significant impact on customer (student) retention, $\beta = 0.810$, $p < 0.001$); and **H6** (switching costs have a positive and significant impact on customer (student) retention, $\beta = 0.144$, $p = 0.008$). On the other hand, the fourth research hypothesis, **H4** (service value-in-use has a positive and significant impact on customer (student) retention, $\beta = -0.071$, $p = 0.330$), was not statistically supported, a result different from that obtained in the study developed by Dal Bó, Milan & De Toni (2018) ($\beta = 0.882$ and high significance in the relationship).

Although customer retention has been a theme in the literature for over 30 years, theoretical gaps still permeate its antecedents or determinants in the most diverse market contexts (sectors, segments, or niches). Authors point out that the study of these antecedents or determinants has been neglected or insufficiently analyzed, and that the constructs used to explain customer retention as a behavioral phenomenon have varied very little in recent decades (Wong, 2011; Dal Bó, Milan and De Toni, 2018).

In this study, the value-in-use, by receiving the direct and positive impact of co-creation, corroborates the prevailing view in the literature that value co-creation is not yet considered real value, but potential value emerging in the customer sphere as value-in-use (Grönroos & Gummerus, 2014). This result offers empirical evidence, unprecedented in this context, of how value emerges for the customer from the interactions between HEIs and their students.

Finally, the Coefficients of Determination (R^2) indicate the proportion of the variance of a dependent variable that is explained by the independent variables between the hypothesized relationships and the model itself, were also analyzed, thus verifying its explanatory power (Malhotra, Nunan & Birks, 2017; Hair Jr. et al., 2018). Table 6 presents the Coefficients of Determination (R^2) of the proposed Theoretical Model.



Table 6: Coefficients of determination of the Proposed Theoretical Model

Constructs	Coefficient of Determination (R ²)
Value-in-Use	0.823
Customer Satisfaction	0.742
Switching Costs	0.206
Customer Retention	0.691

Source: Research data.

Based on the determination coefficients (R²) obtained, Customer Retention presents 69.10% of its variance explained by Value Co-creation, Value-in-Use, Customer Satisfaction, and Switching Costs, showing a strong explanatory power for the dependent variable (Afifi, May & Clark, 2012; Tabachnick & Fidell, 2012; Hair Jr. et al., 2018).

5 FINAL CONSIDERATIONS

Opposing the predicted based on the study by Dal Bó, Milan & De Toni (2018), the impact of services Value-in-Use on Customer (students) Retention was not significant because such hypothesis was not statistically supported. Some assumptions may help to reflect on this finding. Among them, it is possible to highlight that the majority of the students participating in the sample (70.10%) never had educational experiences beyond high school, and could make them less able to compare different educational experiences at a higher level and alter their perceptions of value, in this case, the services Value-in-Use.

The divergence between the expected results and the empirical results obtained in this study should not exhaust the search for a better understanding of the Value-in-Use role in Theoretical Models explaining Customer Retention in the higher education context. On the contrary, because it presents unexpected results, it should serve as a stimulus for new research that places the Value-in-Use of services as a central piece of theoretical models, since this construct has been little empirically tested and in a restricted range of service contexts, besides being confused to a reasonable extent with the perceived quality construct (Medberg & Grönroos, 2020).

Concerning Customer (students) Retention, as a dependent variable, the relevant theoretical contributions in this study reside in the testing of its antecedents, the set of constructs considered in the research, and the configuration of the relations inherent to the proposed, tested, and validated Theoretical Model. In particular, it is worth mentioning the inclusion of Value Co-creation and Value-in-Use, more recent and less tested constructs than the others, as antecedents or determinants of Customer (students) Retention. This theoretical-empirical contribution provides evidence for these constructs and their hypothesized relationships, originated from the Service-Dominant Logic (S-DL) and the Service Logic (SL).

It is also essential to highlight, as a theoretical contribution, the relevance of the Brazilian higher education context as the environment for this study. Not only because of the sector growing competitiveness or the difficulties it has been experiencing, but also the intrinsic characteristics that make this context particularly interesting for empirical research related to the services, as the constant and frequent interactions between educational service providers (HEIs teachers and staff) and customers (students), the relatively long duration of the relationship, given the courses attended by the students (from two to five years on average), and the emergence of value from proposals for value co-creation.



Regarding the managerial implications, the results show that both the emergence of value to the student (Value-in-Use) and Customer Satisfaction (students) depends mostly on the success of the HEIs collaborative practices in the joint sphere (service provider and user). However, precisely in the Value Co-creation, the studied HEIs obtained the lowest average among respondents (students) (4.71). Therefore, educational managers should stimulate and strengthen collaborative practices both in the HEIs academic and administrative spheres, through active learning pedagogical practices (such as project development, plans or prototypes, for example), in which the students play a more predominant role in their learning, and in the effective engagement of students in administrative actions, such as events organization (lectures, seminars, panels) or freshmen reception.

Due to the increased competitiveness of the sector, HEIs customers (higher education courses students) tend to be progressively more accessed and co-opted by communication of competitor HEIs offers, making student retention, as a defensive marketing strategy, a key factor not only to the competitiveness of the studied HEI but even to its survival. Therefore, HEIs managers should use Customer Retention rates as targets or performance indicators.

As limitations of the study, the non-probabilistic sample for convenience does not allow us to extrapolate the sample data to the entire target population of the context researched, weakening the research results generalization power. Likewise, the use of Structural Equation Modeling (SEM) applied in single cross-sectional research, as is the present research case, does not observe the change in students' perception over time. It does not allow verifying the variation of the permanence intention or its probability of being retained by the HEI, nor the variation in the impact of the other constructs contemplated in the tested Theoretical Model and their respective hypothesized relationships.

As future studies and based on Value Co-creation as a central element of the educational process, other studies could better understand which constructs are effective antecedents of Customer (students) Retention. It is also possible to point out the need to apply and deepen the interaction, moderation, and mediation effect tests in future studies, such as the mediation between Value Co-creation and Switching Costs and Customer Retention. This opportunity for new studies is pertinent due to the limited amount of testing performed.

Another useful approach for a better understanding of Customer Retention would be to research and map the evolution of value in relational exchanges longitudinally, adding to Value Co-creation and Value-in-Use other constructs present in the literature, such as Value Proposition and Value Facilitation, as well as the resources needed for value creation in the joint sphere, such as Operant Resources and Bonding Tactics (Structural, Social and Financial) in order to obtain the best of other possible results from relational exchanges, such as Customer Loyalty, Repurchase, Electronic Word-of-Mouth Advertising, the reduction of New Customer Acquisition Costs, and the efficiency of cross-selling and up-selling tactics.

Finally, in the educational context, the research could also be carried out seeking comparisons between the characteristics of HEIs, such as public versus private institutions, or comparing colleges with university centers and universities, as well as other service contexts (telecommunications, financial, health, and tourism), both in customer service versus corporate clients (companies).



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APPENDIX A – SCALE ITEMS USED IN THE RESEARCH

Constructs	Items	Scale Items Used in the Research	Factor Loading
Value Co-creation	COCRE_1	The HEI interacts with students to serve them better.	0.642
	COCRE_2	The HEI Works together with students to produce offerings (courses) that mobilize them.	0.650
	COCRE_3	The HEI interacts with students to design offerings (courses) that meet their needs.	0.619
	COCRE_4	The HEI provides services for and in conjunction with students.	0.667
	COCRE_5	The HEI co-opts students' involvement in providing services for them.	0.650
	COCRE_6	The HEI provides students with supporting systems to help them get more value.	0.494
Value-in-Use	VLUSE_1	The services (courses and complementary services) this HEI offers make me maximize my time.	0.612
	VLUSE_2	Being a student at this HEI is the right decision when expenses are considered.	0.661
	VLUSE_3	The service and courses of this HEI offer value for money based on my previous experiences.	0.751
	VLUSE_4	The courses of this HEI make me feel confident.	0.727
	VLUSE_5	The HEI provides experiences that make me feel good.	0.749
Customer Satisfaction	SATIS_1	I am satisfied with the course.	0.808
	SATIS_2	This HEI is a good HEI to study.	0.835
	SATIS_3	The course and services of this HEI meet my expectations.	0.800
	SATIS_4	Overall, I am satisfied with the service provided by this HEI.	0.729
Switching Costs	SWICO_1	I would have to spend a lot of time and effort to switch to another HEI.	0.794
	SWICO_2	The financial costs to switch to another HEI would be high.	0.779
	SWICO_3	Overall, it would be a hassle to switch to another HEI.	0.664
	SWICO_4	Considering everything, the costs to stop doing business with the current HEI and start up with a new HEI would be high.	0.757
Customer Retention	RETEN_1	I would certainly recommend the HEI to someone who seeks my advice.	0.720
	RETEN_2	It is very likely that I say positive things about the HEI to other people.	0.576
	RETEN_3	In the near future, I intend to take other courses at this HEI.	0.619
	RETEN_4	I am willing to continue being a student at this HEI.	0.809
	RETEN_5	I would encourage friends and relatives to study at this HEI.	0.642



AUTHORS

1. Guilherme Coelho Nunes

Institution: Faculdade Fisul, Garibaldi, Rio Grande do Sul, Brazil.

Master in Administration from the University of Caxias do Sul (UCS). Professor at Fisul Faculty.

E-mail: gcoelhon@gmail.com

ORCID: <https://orcid.org/0000-0001-6106-1622>

2. Gabriel Sperandio Milan

Institution: Universidade do Vale do Rio dos Sinos (Unisinos), São Leopoldo, Rio Grande do Sul, Brazil.

PhD in Production Engineering focusing Quality Systems from the Federal University of Rio Grande do Sul (UFRGS). Professor and researcher at University of Vale do Rio dos Sinos (Unisinos).

E-mail: gsmilan@unisinos.br

ORCID: <https://orcid.org/0000-0003-3480-2653>

3. Luciene Eberle

Institution: Universidade de Caxias do Sul (UCS), Caxias do Sul, Rio Grande do Sul, Brazil.

PhD in Administration from the Pontifical Catholic University of Rio Grande do Sul (PUCS-RS) and the University of Caxias do Sul (UCS). Professor and researcher at University of Caxias do Sul (UCS), Caxias do Sul, Rio Grande do Sul, Brazil.

E-mail: leberle@ucs.br

ORCID: <https://orcid.org/0000-0002-0282-5626>

4. Deonir De Toni

Institution: Universidade de Caxias do Sul (UCS), Caxias do Sul, Rio Grande do Sul, Brazil.

PhD in Administration focusing Marketing from the Federal University of Rio Grande do Sul (UFRGS). Professor and researcher at the University of Caxias do Sul (UCS).

E-mail: DToni2@ucs.br

ORCID: <https://orcid.org/0000-0001-9637-8099>

5. Pelayo Munhoz Olea

Institution: Universidade Federal do Rio Grande (FURG), Rio Grande, Rio Grande do Sul, Brazil.

PhD in Business Administration from the Universitat Politècnica de Catalunya (Spain). Professor and researcher at the Federal University of Rio Grande (FURG).

E-mail: Pelayo.olea@gmail.com

ORCID: <https://orcid.org/0000-0003-2183-8112>

Contribution of Authors:

Contribution	Author 1	Author 2	Author 3	Author 4	Author 5
1. Definition of research problem	√	√	√		
2. Development of hypotheses or research questions (empirical studies)	√	√	√		
3. Development of theoretical propositions (theoretical work)	√	√	√		
4. Theoretical foundation / Literature review	√	√	√	√	√
5. Definition of methodological procedures	√	√	√	√	√
6. Data collection	√	√	√		
7. Statistical analysis	√	√	√		
8. Analysis and interpretation of data	√	√	√		
9. Critical revision of the manuscript	√	√	√	√	√
10. Manuscript writing	√	√	√	√	√
11. Other (please specify)	-	-	-	-	-



Conflict of Interest

The authors have stated that there is no conflict of interest.

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