

**The importance of central, complementary and supplementary
services offered by a university in students' retention**

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ABSTRACT

Higher education has increased a lot in Brazil. As it consists essentially of service operations, it is necessary to comprehend the impact of the offered services on students' level of satisfaction. This study aimed to investigate the influence of the service offer on students' retention, based on the perceptions of enrolled and dropouts. A survey was conducted with 289 enrolled and 19 dropouts business students chosen from a private university in Brazil. Results show that the services which more influence retention include central service – teaching, and some complementary services directly related to the central – director's attending and library. Findings also show that central, complementary and supplementary services have strong correlation for both enrolled and dropouts. There is balance among the three types of service.

Key-words: customer retention. service concept. service quality.

1. Introduction

Since 90's superior education in Brazil has increased a lot, especially in private institutions, partly due to the facilitation in opening of Higher Education Institutions (HEI), caused by 1996 Education Reform. The number of students enrolled in private higher education had a significant increase from 2002 to 2007: 49,87%.

Given this competitive environment, attracting new students, avoid or reduce tax evasion, and, therefore, retain the students are important factors in the management of private institutions. For Silva Filho et al (2007), higher education dropout is an international problem that affects educational systems outcomes. International dropout rates are measured using the total dropout rate (number of new students minus the number of graduates after the course conclusion). Based on this calculation method, Brazil has rates similar to the United States, and slightly below rates in Latin America. The authors add that the loss of students who start but do not complete their courses are academic, social and economic wastes, and in private institutions, it is a major loss of revenue. In this sector, 2% to 6% of revenues are invested with HEI marketing strategies to attract new students. As for preventing evasion it is not invested the same amount (Mendonça, 2009).

The growth of competition is causing the private higher education institutions make efforts not only in attracting new students, but also on implementation of strategies for retention of students (Ferreira et al 2008). With respect to dropouts, Coutinho (2007) emphasizes, as a direct result of abandonment, the reduction in revenue and profitability of classrooms (classes). According to Coutinho (2007), the HEI retention of students is as important as the capture - the student veteran renews its registration with the institution usually every six months, although

some private higher education institutions use the annual system. The renewal of registration is always a moment of decision that can be affected by the services offered by HEI.

With an increasing number of new students enrolled, the challenge comes from offering good services, attracting new students and retaining current ones. It is necessary, then, a better understanding about the provision of services, as well as constant monitoring of these, in order to detect the level of customer satisfaction of the HEI (students, parents and the market) with the aim of developing strategies for students retention.

This study aimed to identify the importance of central services, complementary and supplementary (service offering) in evasion or permanence of business students of a private university.

2. Fundaments

Knowing the customer, and his opinion about the services provided, is of great importance. Thus, if one organization really wants to satisfy its customers, it is necessary to ask them about satisfying aspects, as well as those that lead to dissatisfaction with the products and services offered (ZEITHAML, PARASURAMAN, BERRY, 1990).

Lovelock and Wright (2001) claim that customers ultimately take several levels of satisfaction or displeasure after using the service. Given that satisfaction is an emotional state, their reactions after the service may involve several feelings ranging from anger to joy. For Alves and Raposo (2007), the higher education sector faces some threats that affect the survival of some HEIs, and to address these threats is important to strengthen the positive image of the institution. For this, it is important to establish a long relationship with students - assess student satisfaction is important to avoid generating negative comments of the institution.

Services are offered in a variety of situations by a set of items that help their design. According to Person (2005), customers of HEI search for educational institutions to help students solve their problems. Customers have the expectation that the services meet their aspirations.

2.1 Service quality assessment

To understand the customer perception about the services, it is important to know them widely. Grönroos (1984) suggested the model of total quality service, divided into two main dimensions: technical quality of the result – “what”, and functional quality of the case: “how”. The technical quality is related to the outcome of the service - its first product, as well as the functional quality is related to the process.

Service assessment is quite problematic, once it involves aspects such as intangibility, heterogeneity and the simultaneity consumption-production (FITZSIMMONS; FITZSIMMONS, 2005, GRÖNROOS, 2003, KOTLER, KELLER, 2006; ZEITHAML; BITNER, 2003). Fitzsimmons and Fitzsimmons (2005, p. 30) also state that "a service experience is a perishable asset, developed for consumers who play the role of co-producer.

There are several models for assessing the quality of service, such as: SERVQUAL, SERVPERF, Grönroos' service quality model, optimal performance model, RSQ (Retail Service Quality), and HEdPERF (Higher Education PERFORMANCE-only), which is an instrument to measure the quality of service for higher education (ABDULLAH, 2006) – this one measures quality based on 6 factors: academic, non-academics, access, reputation, curriculum structure , and student's comprehension.

2.2 Service quality in higher education

The successive improvement of quality is a key factor for an organization to continue working in the business environment that each day is more competitive. Higher education is not

different - in fact some quality items are required by law to existence, and accompanied by the Ministry of Education and Culture - MEC. MEC models for quality assessment mainly consider aspects related to issues of technical quality - what is offered, through indicators such as organization-didactic teaching, facilities, special facilities such as laboratories and clinics, quality of faculty infrastructure, librarian, average time for completion of courses, etc.. It does not emphasize items related to functional quality - how - or assessment of students' perceptions regarding the quality of services provided by HEIs.

Academic papers on quality assurance in higher education tend to be limited to the quality of education (PEREIRA, 2003; PERSON, 2005, ALVES, RAPOSO, 2007; RAUTOPURO; VÄISÄNEN, 2000). For Real (2006), the quality of higher education would be linked to the inseparability: teaching, research and extension, but not many jobs that involve aspects of service provision by both the education (central) and the ancillary services (complementary and supplementary). Another problem, according to Pereira (2003), is the difficulty to establish a standard of quality review of higher education, given the heterogeneity of the educational system, for reasons of nature of institutions: public and private.

According to Abdullah (2006), instruments for assessing quality are very generic - the SERVQUAL model (ZEITHAML, PARASURAMAN, BERRY, 1990) - is usually adapted for research in higher education (RIGOTTI; PETTA, 1992; OLDFIELD, BARON, 2000). The author proposes a new scale to measure the quality of services at university, called HEdPerf (Higher Education Performance), including such factors as academic - the sole responsibility of academic and non-academics, reputation, access and curriculum frameworks.

To Brong (2001), students and customers in general want quality services, but HEIs Educators should look beyond the classroom when they say that the institution has quality. The institution will provide, in addition to classes, better services, customer support and remember

that if customers are lost, the employment of teachers is unstable. Evaluating the quality of services offered by private higher education institutions is necessary, once it is observed that evasion can be brought about by factors other than education, which eventually generate a negative perception regarding the quality of services

2.3 Relationship Marketing

To Kotler and Fox (1994), as the education market begins to undergo changes, the HEI also starts to adopt marketing strategies, and evaluation of satisfaction of needs of their audience. HEIs have education as their core activity, and due to this, a good relationship with their stakeholders is necessary. Froemming (2001) states that higher education institutions should manage the relationship with the various groups involved, listing three: primary: students; secondly: payers, like agencies, among them government agencies and sponsors, and, in a third level: other stakeholders that would have some sort of interest with the IES, such as alumni and parents. Kotler and Fox (1994) argue that the public is made up of organizations or people with specific need or can somehow affect the organization. The authors identified 16 public groups that somehow has some interaction with HEIs: potential students, enrolled students, parents, alumni (graduated), government agencies, business community, suppliers, local community, general public, mass media, university council, faculty, administration and staff, supervising agencies, competitors, and foundations. Because of this dynamic environment, HEIs are seeking activities that promote the uptake and retention of students, to ensure the continuity of the organization. Relationship marketing is something to be considered by HEIs as a strategic factor.

To Kotler and Armstrong (2003) "relationship marketing came up with the need to create, maintain and enhance strong relationships with customers and other stakeholders." Barreto (2007) adds that this relationship must also be profitable over the time. As Person (2005) and

Baker (2007) claim, acquiring new customers rather than retaining them costs more on - HEIs should also emphasize not only the targeted marketing to attract new students, but also the retention mechanisms of these. According to Grönroos (2003), more and more companies are attempting to keep the customers they already have, and this is equally or more important than getting new ones, because some customers provide profitability as customers remain after a while. The process of service delivery causes some type of cooperation between the client and service provider, where arises the relationship between the two - if that customer relationship is not considered good, it will most likely be closed.

In the context of higher education, HEIs should seek to know their customers. Kotler and Fox (1994) argue that just the academic activities alone can not ensure long-term sustainability. It is necessary, through the relationship with customers (students), to know them in order to better tailor the service provided. Knowing their customers is important for IES, since the relationship with them in higher education is relatively long. For Nunes (2005), an approach of relationship marketing is increased and is supported by the new paradigm of continuing education, where the student is picked up for life, as it will merge work and education throughout his productive career.

Relationship marketing strategies contribute to students' retention. Ahmad and Buttle (2001) argue that the actions to retain students in the HEIs should be aligned with the strategies of the organization because it facilitates the financial benefits of the HEIs. In Lima (2006) indicators point to the advantages of adopting retention actions, but usually HEIs do not adopt these strategies.

2.4 Services offer

To contribute to a broad understanding of the offered services, Grönroos (1995) classifies the service in two main categories: the central and ancillary services, also called peripheral or facilitators. The central service is the core activity of the organization and the main reason for the existence of the company, while the ancillary services complement or facilitate the provision of the central service. The ancillary services are divided in facilitating services and support services. Facilitating services are those that facilitate the implementation of the use of the central service - without them it is not possible to use the same, ie, they are required. Support services are also ancillary services to the central, but they are used to increase the value of service and / or differentiate it from competing services - services are not mandatory but can be used as a competitive advantage.

Nóbrega (1997), reaffirms the proposition of Grönroos (1995), with two modifications: first, the definition of Grönroos for compulsory of facilitator services . In some situations, the service facilitator is available, but is not necessarily required and may sometimes not be used by the client. For example, the tickets are a precondition for a passenger make use of air transport service, but a cafeteria and parking are not compulsory in school, in spite of highly desirable. Secondly, the author suggests specific terminology, calling the services "facilitators" of "complementary" services and "support" now called "supplementary". For the author, the term "facilitator" leads to an understanding that what makes this group will be placed, and the "support" are services that just support - this is confusing because the support services facilitate the use of the central.

4. The construct

To conduct this study, it was used a reference model based on the concept of service offer by Grönroos (1995) and Nóbrega (1997), where the service offering is segmented into 3 categories: central, complementary services and supplementary services, namely: central - the essential service offered by the organization; complementary services - those that enable the use of the service center - without them, usually one can not access the service center, supplementary services - services that add value to offer services providing a competitive advantage or differentiation.

The services offered by the HEI studied were classified in accordance to Figure 1

Central service	Ancillary services	
	Complementary services	Supplementary services
- Teaching (classes)	<ul style="list-style-type: none"> - Directors' attendance (director help for student) - Library (loan, renewal, consults, etc...) - Central Customer Service (documentation, registering, , enrollment, receipts, etc...) - Cleaning and building maintenance (cleaning of the rooms, cleaning bathrooms, adequate lighting, drainage, painting, etc ...) - Snack services - Surveillance services (security) - Reprographic services (photocopy / sales of texts, etc...) 	<ul style="list-style-type: none"> - Self-service options (Library - renewal, consultation, booking, secretary - soliciting applications, consultation notes, schedule, virtual learning, finance, payments,) - Portal of Services (Guides, links, quizzes, news, etc ...) - Information service (call center) - Computer labs services (printing, Internet access, software access)

Figure 1: List of central, complementary e supplementary services offered by private HEIs
Font: Research

From the provision of services, shown in Figure 1, is presented in Figure 2, the reference model for the study, which considers the perceptions of students enrolled and dropouts with

respect to the central services, complementary and supplementary, and its influence with respect to retention and dropout. This model was used to support this research.

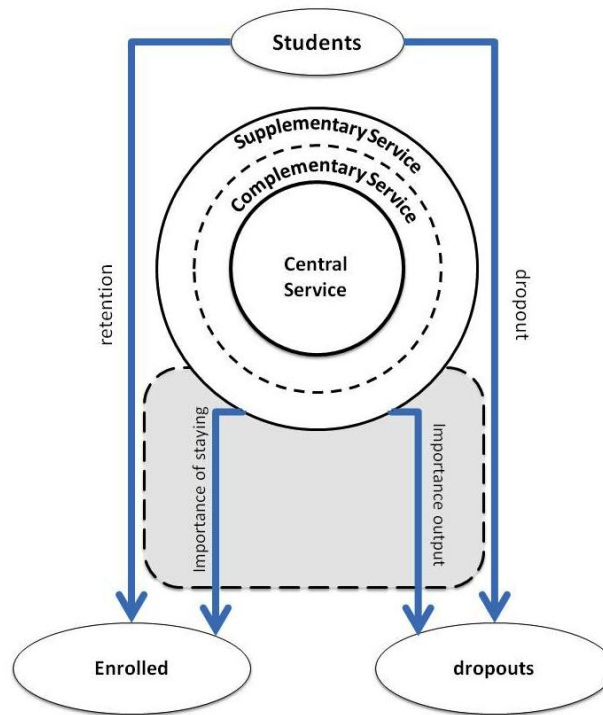


Figure 2: Reference model used in the research. Mendonça (2009)

At the proposed reference model, a classification of students is made at first, dividing them in students (enrolled in IES) and dropouts (who did not renew registration in the course of one semester to another, or asked for transfer or cancellation). Then, the model considers the view of the services offered by the HEI and their classification in accordance with the provision of service between central, complementary and supplementary. After the classification of services, students of the HEI assess the services on the aspect of its influence to quit (dropouts) or retention (students enrolled students).

4. Methodology

To conduct the research it was adopted the following sequence: formulation of goals, definition of the construct, development of tools for data collection, identification and sample selection, data collection, analysis and interpretation of results.

4.1 Population and sample

Business management course was chosen to explore the influence of services offered in the retention of students, because it is a course with a larger number of students enrolled in the country (BRAZIL, 2009) and due to the fact that, in the researched HEI, this course is the second largest number of students, representing 13.7% of actually enrolled students. The research was composed of students enrolled and / or dropouts from the course of business management, between the years 2008 and 2009 who are attending or attended (escaped) from the 1st to the 3rd grade, a total of 1,321 students. The option for students in initial grades based on the following reasons: the initial series is the largest higher dropout rate (SILVA FILHO et al, 2007), students in early grades have not been fully exposed to all aspects of life university - probably have not yet developed opinion about the importance of the curriculum, but students are qualified to judge such factors as climate and social infrastructure of the HEI (LIMA, 2006). Another reason is that the current administration, from 2008, could no longer be offered with different emphasis according to their curriculum guidelines - so the research was conducted with students of courses without specific emphasis.

The group of dropout students was composed by those who did not renew the registration from one semester to another, those who requested cancellation of the course, and those who have requested transfer to other HEIs. The sample was calculated using the formula for

determining the sample size, quoted by Martin (2005), to calculate the sample with nominal or ordinal variables and population size:

$$n = \frac{Z^2 \cdot \hat{p} \cdot \hat{q} \cdot N}{d^2(N-1) + Z^2 \cdot \hat{p} \cdot \hat{q}}$$

Because it is a heterogeneous population (students from 1st to 3rd grade, paying or not the full fee, students with a scholarship of 100% and / or without any scholarship (male and female) for research purpose, it was used the "q" equal to 0.5. If heterogeneity were determined, a lower sample size would be even lower than the result obtained. The calculation was based on a universe of 1,321 students, with 1,241 registered and 80 dropouts, using a sampling plan with a confidence level of 95% and a margin of error of 5%, indicated a sample size equal to 297 students. This sample was stratified proportionally according to the enrolled students and dropouts: 18 dropouts and 279 enrolled.

4.2 The questionnaire

Due to the existence of two groups of respondents – registered and dropouts, two types of questionnaires were prepared. The questionnaire was divided into two parts, the first one with questions related to the characterization of the respondents, including variables such as unit where he is studying / studied, series, sex, age, and form of payment. The second part dealt with the perception of the influence of the services offered on quitting the course.

For the second part, the text of the questionnaire to the registered students used the affirmative form: *“among the services listed below, please indicate those that influence you to keep in the course. Assign score of 1 to 12, 1 (one) the service that most influences for keeping stay and 12 (twelve) that the less influences”*. Regarding the dropout students, the question used

was: *“among the services listed below, check those that had an influence on your decision for leaving the University. Please mark 1 (one) for the service that most influenced up to 12 (twelve) for the service less influenced”*. The services were listed, in both cases, in alphabetical order - all services listed in Table 1 - regardless of being classified as central, complementary or supplementary (this classification was not visible to the interviewees).

There were two pre-tests. First, a group of 4 course managers, with experience as Director, with the aim of identifying the clarity of the questionnaire for students - it was assumed that the experience of managers coping with the students to this type of evaluation was enough to this analysis. Secondly, a questionnaire was applied to students in the 4th grade of the course. The two applications allowed a few adjustments to pre-designed questionnaires, related to terminology and sequence of words.

4.2 Data collect and processing

In the initial phase of this research an exploratory research was conducted, using secondary sources (literature, statistics and survey research in the past). The second stage - field surveys - consisted of a quantitative study using survey research. Data were collected from enrolled and dropouts. For enrolled students, data were collected in classrooms, visited proportionally to the number of classes available. Data were collected by a principal investigator, trained and experienced in application of questionnaires in previous studies. The questionnaires were distributed, and the objectives of the research were presented as well as guidelines on how to respond. The researcher remained at local during the responses, providing further information, if necessary.

Dropout students were contacted initially by email, but the return was considered very low (from 81 questionnaires sent only 1 (one) was completed). It was decided then to do personal

approach, through individual phone calls. This contact was conducted by the same researcher from classroom - with registered students. During the contact, the initial approach was to introduce the purpose of the research, ask about his availability on responding the questions, and only then the questionnaire would be applied. Whilst this may cause a failure of understanding or not total concentration, it was the possible and feasible method.

The questionnaires application took place in the last month of 1st semester (June 2009), before the final exams, so that the performance (positive or negative) of the students in the assessments had minimized any influence on the answers. In field research, the number of valid questionnaires obtained was higher than the calculated sample, totalizing 289 questionnaires of enrolled students and 19 dropout students. The sample used was non-probabilistic, because the respondents were selected according to the convenience of researchers – momentum of the interviews.

The statistical analysis was done using the Statistical Package for the Social Science - SPSS, version 17.0. Spearman coefficient was calculated, in order to assess the correlation between legal services as their influence.

4. Results

4.1 The perception of dropouts

Table 1 shows the results about dropouts answers, when asked about the influence of the services offered by HEIs in their decision to quit the course, in order of highest to lowest importance.

Based on the classification presented in Figure 1 - central services (CE), complementary (C) and supplemental (S) – it was observed that the services that most influence on output were: surveillance (C), reprography (C), information (C) and snacks (S). Among the services that least affected the output were: director's attendance (C) and library services (C), followed by teaching (CE). The right column was established to allocate priority to three classes of influence - high, medium and low. These three classes were obtained by dividing the 12 services following classification of students in the degree of influence in equal parts, each class representing one third of the whole.

The central service - teaching – comes in a comfortable position (10th position), with an average value equal to 8.5 – in a total of 12. Director's attendance and library, both complementary, also showed low level of influence on the evasion. When it appears that these three are the most directly related to the final activity of the IES, we can conclude that the HEI enjoys a relatively comfortable situation. It is tempting to establish a subdivision between the complementary services, such as some involving those most directly linked to the educational process of the institution - this group would appear, in addition to teaching, library, director attendance, and self-service options. Other services relate more to physical infrastructure and other student services not directly related to education.

This suggests that the central and complementary services more directly linked to the central office are considered by students as those which least influenced his decision to quit the course.

Table 1: Service influence on students' decision for quitting

	Type of service	Service	Mean	Influence on continuity
Great influence	Complementary	Surveillance service	1,0	High
	Complementary	Snack services	2,0	
	Complementary	Reprographic services	3,5	
	Supplementary	Information service	5,5	
⇕	Supplementary	Computer labs services	7,0	Middle
	Supplementary	Central customer services	7,5	
	Complementary	Cleaning and building maintenance	7,5	
	Complementary	Portal of Services	7,5	
Less influence	Supplementary	Self-service options	8,5	Low
	Central service	Teaching	8,5	
	Complementary	Library	9,0	
	Complementary	Directors' attendance	10,5	

Font: research

4.2 The perception of enrolled students

Business management had, at the beginning of the 1st half of 2009, 1,241 students enrolled in the first 3 series, which were divided into 2 units, located in different parts of the city. Table 2 presents the result of inquiries about the influence of the services offered in the continuity of students enrolled in the course.

Also based on the classification in Figure 1, it was observed that the services that most influence student retention are: teaching (CE), portal of services (S), directors' attendance (C) and library (C). Services with little influence on students remaining were snack (S), information (C), reprography (C) and surveillance (C).

Note the presence of the central service - teaching - in a comfortable position (1st place), with an average value equal to 2.54 - the lowest possible value would be 1.0. Directors' attendance and library, both complementary, also showed a high level of influence on student

retention, together with the portal of services. The first, third and fourth positioned are the most directly related to the final activity of the IES, suggesting a position of relative comfort. Here, as in the case of the dropout students, one can think of a subdivision of complementary services, grouping those more directly linked to the educational process of the institution - library, directors' attendance, and self-service. In a second group would be those services related to physical infrastructure and other student services not directly related to education.

This suggests that the central services and those most directly linked to the central service are identified by registered students as those who most influence his stay in the course.

Table 2: Service influence on registered students

	Type of service	Service	Mean
Grat influence	Central service	Teaching	2,54
	Supplementary	Portal of Services	5,25
	Complementary	Directors' attendance	5,27
	Complementary	Library	5,33
	Supplementary	Self-service options	5,45
Less influence	Complementary	Central customer services	6,81
	Supplementary	Computer labs services	6,91
	Complementary	Cleaning and building maintenance	7,38
	Supplementary	Surveillance service	7,68
	Supplementary	Reprographic services	8,40
	Supplementary	Information service	8,48
	Supplementary	Snack services	8,50

Font: Research

The results of registered students seemed to have correlation with the perceptions of dropout students. Then it was made a comparative test to evaluate the correlation between the results of the two groups - the test of Spearman's coefficient. For Campos and Nóbrega (2009), it is statistically possible to verify the degree of correlation between ordination and alignment of

measures by Spearman's test. Cooper and Schindler (2003) reported the correlation coefficient of Spearman as a widely used test to compare jurisdictions.

Table 3 shows the result of the comparison between registered and dropouts. Testing of Spearman coefficient correlations identified strong and very strong among the orders of the students enrolled and dropouts. This can be evidenced by the value found, which was equal to -0.797 (negative sign). For Abdullah (2006), the coefficient of correlation coefficient to evaluate the correlation between rankings in the value less than 0.70 is considered satisfactory to demonstrate the internal consistency of scales.

Thus, based on Spearman's test, it can be said that there is a strong correlation between the responses of the dropout students and the responses of registered students. In other words, asking dropout students which services influence evasion is equivalent to asking for the enrolled students which services most influence their stay. A similar result was found by Noel and Levitz (2000), who, in their studies, indicate that interviews with dropouts end up being less productive than expected, because opinions are close to enrolled students. So, understanding the enrolled students becomes a viable foundation for possible retention actions.

This compatibility of the results between enrolled and dropouts has two main uses: firstly, it provides reliability to the results of this research - the similarity of results with students and escaped with students enrolled. Secondly, it appears to be most suitable, due to issues of cost and ease of access, search with students enrolled than among the dropouts.

Table 3: Spearmans’s correlation between service influence on students’ continuity x service influence on students’ quitting

			REGISTERED students influence	DROPOUT students influence
Spearman's rho	REGISTERED students influence	Correlation Coefficient		-0,797
		Sig. (2-tailed)		0,002
		N		12
	DROPOUT students influence	Correlation Coefficient	-0,797	
		Sig. (2-tailed)	0,002	
		N	12	

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5. Conclusions, limitations and recommendations

About students’ evasion, the services described as the most influenced on abandonment of the course were: surveillance service, snack services, reprographic services, information services, and the computer labs services. The services that less influenced evasion were: directors’ attendance, library and teaching. This suggests that directors’ attendance (complementary) has a good performance, together with the services provided by the library (complementary) and the central service (teaching).

For enrolled students, the services that affect their stay in the HEI included, first, teaching (central), followed by portal services (complementary), and directors’ attendance (complementary). The services that could mostly influence the output would be: snack services (complementary), information services, (complementary), and reprography services (complementary).

Thus, the results showed that education (central) is the largest contributor to students' retention. Complementary and supplementary services contribute in a balanced way, with emphasis on self-service options - offered electronically, directors' attendance (complementary) and portal of services (supplementary).

In terms of managerial implications, strategic decisions are crucial for companies to achieve success in competitive market. Provide information to decision makers to guide them to achieve organizational goals is the challenge for researchers. This research may contribute to the decision makers HEI researched analysis of students' perceptions on the provision of service. It was also noted that enrolled and dropouts students have similar perceptions, and strategic actions to retention do not necessarily need to differentiate students from 1st to 3rd grade and people of different sex.

Limitations of this study may be related: the difficulty of access to dropouts, although the results have shown its viability, assessment of the influence of services in tax evasion or avoidance based on service seen holistically, that is, attributes of each service were not evaluated. This can serve as a stimulus for future research. A topic for future research would be the comparison between different institutions, in order to measure the gaps between them, or even different courses in the studied HEI.

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