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Factors that create a competitive advantage: consonances and differences between administrators and students in educational institutions

Factores que crean una ventaja competitiva: consonancias y diferencias entre gestores y estudiantes de instituciones educativas

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Abstract

The intense competition that lives the education industry, requires that management to understand the critical factors of service quality. Knowledge about the desires of consumers is one of the conditions to offer an excellent service. Thus, this article evaluated whether the improvement priorities desired by students converged with those of the managers. Two questionnaires were used, developed from the matrix of competitive positioning and resource-based view. The first captured expectations and perceptions of student in relation to 22 attributes. The other captured judgments of administrators about value, rarity, imitation and organization. Students and coordinators of courses in the computer science area of two educational institutions were questioned. In addition, comparisons were developed between perceptions of the two groups. The results revealed that there is a lack of alignment between improvement priorities conferred by students and managers. For the attribute qualification of teacher team, for example, groups of students of IFRN and IFPB put it at different levels: greater weakness and greater competitive stren-

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gth, respectively. Although the managers of the two educational institutions consider this aspect as a temporary advantage, actions aimed at teacher training must be prioritized with greater intensity by the management of the IFRN. Therefore, management has to better understand the demands of customer improvements, eliminating deficiencies in the provision of services.

JEL code: M1, I21, M19
Keywords: Strategies; Education institutions; Demands for improvement

Resumen

La intensa competición que vive la industria de la enseñanza, exige que la gestión entienda cuáles son los factores críticos de calidad de servicio. Y conocer los deseos de consumidores es una de las condiciones para ofrecer un excelente servicio. Así, el presente artículo evaluó si las prioridades de mejora deseadas por estudiantes convergieron con aquellas de los gestores. Fue utilizado dos cuestionarios, desarrollados a partir de la matriz de posicionamiento competitivo y de la vista basada en recursos. El primer capturó expectativas y percepciones de rendimiento de los estudiantes en relación a 22 atributos. El otro detuvo los juicios de administradores sobre el valor, rareza, imitación y organización. Fueron interrogados estudiantes y coordinadores de cursos del área de informática de dos instituciones de enseñaza. Además, se desarrollaron comparativos entre las percepciones de los dos grupos. Los resultados revelaron que existe una falta de alineación entre prioridades de mejora conferidas por estudiantes y gestores. Para el atributo cualificación de los maestros, por ejemplo, el grupo de estudiantes del IFRN y IFPB lo ponen en niveles diferentes: mayor debilidad y mayor fuerza competitiva, respectivamente. Aunque los gestores de las dos instituciones de enseñanza consideren ese aspecto como ventaja temporal, acciones dirigidas a la capacitación docente deben ser priorizadas con mayor intensidad por la gestión del IFRN. Por lo tanto, la gestión tiene que entender mejor las demandas de mejoras de los clientes, eliminando las deficiencias en la prestación de servicios.

Código JEL: M1, I21, M19
Palabras clave: Estrategias; Instituciones de enseñaza; Demandas de mejoras

Introduction

The service industry is the protagonist of the global economy (Cronin and Taylor, 1992; Brady, Cronin and Brand, 2002). Between 2003 and 2013, in Brazil, there was a 33.9% increase in the number of companies whose main activities were services, reaching the order of 1.2 million. In this period, the segment quadrupled its net profit, reaching R$ 1.3 trillion, and employed 12.5 million people—twice as many as in 2003 (IBGE, 2013). In 2013, the sector represented 69.4% of the value added to the Brazilian GDP (MDIC, 2016). In this field, education is one of the services offered to society and must be carried out by the State with the guarantee of minimum quality standards.

The education segment has expanded its offer (Butt and Rehman, 2010). The contingent of secondary schools in Brazil grew approximately 9.3% in the 2008-2014 period. It went from 25,389 to 27,743 establishments, of which more than 19,000 are public. As for the number of enrollments, 8.3 million were made in secondary school in 2014. Of this quota, about 7.2 million were executed in public schools and the rest in private schools. In that year, vocational training institutions reached the level of 1.78 million enrollments. This represents a growth of 89.2% compared to 2008 (INEP, 2015).

Statistics show that the education segment has a strong competition which is equal to any other industry (Souza et al., 2014). However, with a greater offer, students become more demanding regarding the services they receive, as they are seen as the real beneficiaries of the act (Lovelock and Wright, 2006). Consequently, dissatisfaction with the services offered could lead to changing educational institutions or the abandonment of academic life. Therefore, it has potentialized the worrying scenario of school evasion in Brazilian schools. In 2010, the dropout rate in Brazil reached 10.3%. The North and North-East regions are those that have contributed the most to this situation, as their rates were of 14.7% and 14.2%, respectively. Furthermore, the educational levels that comprise high school education stood out (IBGE, 2016).

Therefore, to survive in a competitive market, organizations must invest more in service quality as a differentiation strategy (Fitzsimmons and Fitzsimmons, 2005; Ramos, 2015). In that context, Ramseook-Munhurrun and Nundlall (2013) and Ashraf, Osman, and Ratan (2016) said that the pursuit of excellence in education is growing and awakens as one of the main concerns of area administrators. For Falchione (2013), educational institutions should not be limited to offering students only the basics; it should attract them with the implementation of improvements related to the quality of education (Falchione, 2013). Quality that is symbolized by the dissonance between the expectations of the client and their perception of the performance of the service received (Parasuraman, Zeithmal and Berry, 1985).

To guide the development of strategies and build competitive advantage, Stock and Lambert (2001) created a framework, entitled Competitive Positioning Matrix. This tool shows which dimensions of the service should be improved. For the authors, it is not consistent for a company to underperform its competitors in attributes that are extremely important to its customers, since that will possibly cause a loss of business. Similarly, having high performance in attributes that are undervalued would result in a waste of resources (Stock and Lambert, 2001).

However, the implementation of a quality strategy is not only conditioned to knowing the priorities/wants of consumers and the performance of the organization in relation to competitors. To build plans that allow changing the situation of one company to a desired one, managers incorporate their values and preferences. Thus, subjectivity is an inherent element in the process of formulating strategies (Mintzberg, 1994).

Therefore, which elements do decision makers consider in order to develop business strategies? According to the RBV (Resource-Based View) approach, the resources of the organization are relevant, because through them a competitive advantage can be achieved. Thus, it is indispensable that managers understand resources as valuable, rare, difficult to imitate, and fully exploited by the company (VRIO model). Resources that are represented by service attributes (Seddon, 2014). Moreover, it is only by satisfying these four requirements that the competitive advantage will become sustainable (Barney and Hesterly, 2007).

In view of the above, a key question guides this research: are the managers perceiving the service attributes that, according to the clients, should be improved, as resources capable of generating competitive advantages? The objective is to assess whether, for a given resource (attribute), the improvement priorities of the client are aligned with the judgments of the managers regarding the contribution of the attribute to creating competitive advantage.

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Theoretical foundation

In the service industry, quality provides the scope for competitive advantage (Fitzsimmons and Fitzsimmons, 2005; Eberle, 2009; Dos Santos, 2014; Ramos, 2015; Ali et al., 2016). According to Grönroos (1984), the conformity between what the customer expects to receive (expectations) and what was actually received (perceived performance) symbolizes service quality. Therefore, managers need to understand the discrepancies between the services expected and the ones services. This will prevent bad decisions, operational inefficiency (improper use of resources), and the resulting customer dissatisfaction (Grönroos, 1984).

Nevertheless, aspects of intangibility and heterogeneity that surround the concept of service also feed consumer uncertainty (Parasuraman, Zeithaml and Berry, 1985). For this reason, the evaluation of service quality goes through the delimitation of operational attributes that best represent the investigated context. In the quality field of educational services, several studies point in this direction (Ramseook-Munhurrun and Nundlall, 2013; Milan, Corso and Eberle, 2013; Dos Santos, 2014; Ashraf, Osman and Ratan, 2016; Ali et al., 2016).

Empirical studies on quality management in educational institutions

Education lacks the adoption of tools capable of controlling quality and client satisfaction (Ramseook-Munhurrun and Nundlall, 2013; Ali et al., 2016). There is a wider range of studies that aim to contribute to this academic gap and list attributes that reproduce educational services. Deshields Jr., Kara and Kaynak (2005) assessed the satisfaction level of 160 academics in management courses at an American university. They found that the technical knowledge of professors is one of the elements that most influenced the satisfaction variable. In the same line, Navarro, Iglesias, and Torres (2005) recognized in a survey carried out with 369 Spanish university students, that the team of professors added to the teaching methods and the course coordinator are factors that act on student satisfaction.

Butt and Rehman (2010) and Alcântara et al. (2012) also supported the findings of Deshields Jr., Kara, and Kaynak (2005). They concluded that the professional experience, attitude, and competence of the professors were the elements that attracted the most attention from Pakistani administrators (Butt and Rehman, 2010; Alcântara et al., 2012). Ramos (2015), on the other hand, highlighted that employee responsiveness was one of the points that generated the greatest student dissatisfaction with the services provided by private schools in southwestern Brazil.

Ya Mostafa (2007), in the context of an Egyptian university, realized the inconsistency of the five dimensions proposed by SERVQUAL. It was observed that the generalization of the instrument is not solid, due to the fact that only three dimensions appeared: records and rates, officials, and physical environment. In this perspective, Eberle (2009) had identified the attributes and quality dimensions of the services offered by an institution of higher education in Caxias do Sul. A total of 521 postgraduate students were surveyed. Exploratory Factor Analysis was used in data processing. As a main result, six factors emerged that explain 63.32% of the variance of the data, which are: professors/teaching method, structure, image, course planning and development, teaching environment, and cost-benefit ratio.

Milan, Corso, and Eberle (2013) replicated this study with 605 students from the Management course. Ten dimensions of quality appeared, among which cleanliness, student care, convenience/integration, and parking/reprography represented new elements (Milan,

Corso and Eberle, 2013). Despite the diversity of dimensions, the quality multidimensionality thesis was maintained (Cardona and Bravo, 2012; Alcântara et al., 2012; Annamdevula and Shekhar, 2012; Ramseook-Munhurrun and Nundlall, 2013; Ashraf, Osman and Ratan, 2016).

Vergara and Quesada (2011) investigated the relationship between the quality of academic service and the following variables at a university in Colombia: value perceived by the student, satisfaction, repurchase intentions, and intention to recommend the institution. To this end, an adaptation of SERVQUAL, with 21 components, was applied to 178 students. They concluded that the quality of the service is a precedent of the value perceived by the student and satisfaction, and the latter is a precedent of the future purchase intentions and recommendation of the educational institution (Vergara and Quesada, 2011).

Part of the contributions of Vergara and Quesada (2011) were corroborated by Nyagowaa, Ocholla, and Mutula (2013) and Ali et al. (2016). These academics argued that the quality of service provided by educational institutions contributes significantly to student satisfaction. Additionally, they reported that image and loyalty are consistent elements of perceived quality (Nyagowaa, Ocholla and Mutula, 2013; Ali et al., 2016).

Campos, Martins, and Neto (2011) asked whether students from different courses at a private higher education institution in the Rio Grande do Norte had different expectations and perceptions of the performance of the services provided. Six hundred and fifty subjects were interviewed. They found that there are few points of intersection between the quality gaps perceived by Administration and Accounting students (Campos, Martins and Neto, 2011). In a similar study, Dos Santos (2014) applied a longitudinal approach. For the 33 attributes researched, it became evident that, with time, the expectations of the university students grew, and their perception of the service received decreased. Despite the observed quality gaps, some attributes need to be improved with greater urgency. This list includes: availability of internet access, cleanliness of the classrooms, restrooms and corridors, parking, and internal security. (Dos Santos, 2014).

Annamdevula and Shekhar (2012) developed a scale, called Higher Education Service Quality (HiEdQUAL), comprised of 27 elements and designed to measure the quality of education service. By collecting data from 358 students at a university in India, they observed that the instrument was reliable (Cronbach's alpha of 0.905). Backed by one of SERVQUAL's critiques—that there is no generic set of dimensions that determine service quality—other researchers (Ramseook-Munhurrun and Nundlall, 2013; Souza et al., 2014; Duarte and Piratelli, 2015) also validated specific tools capable of assessing quality in educational settings.

Table 1 shows the twenty-two empirical studies that served as sources to identify the key attributes that describe the academic services.

Table 1.
Empirical studies inventory that contains attributes of the education service.

Author/Year	Country	A*	Author/Year	Country	A*
Deshields Jr., Kara and Kaynak (2005)	USA	160	Cardona and Bravo (2012)	Colombia	1802
Navarro, Iglesias and Torres (2005)	Spain	369	Nyagowaa, Ocholla and Mutula (2013)	Kenya	1418
Abdullah (2006)	Malaysia	409	Milan, Corso and Eberle (2013)	Brazil	605
Mostafa (2007)	Egypt	508	Ramseook-Munhurrun and Nundlall (2013)	Mauritius	377
Eberle (2009)	Brazil	521	Dos Santos (2014)	Brazil	267
Brochado (2009)	Portugal	360	Souza *et al*. (2014)	Brazil	479
Butt and Rehman (2010)	Pakistan	350	Duarte and Piratelli (2015)	Brazil	356
Vergara and Quesada (2011)	Colombia	178	Lankara and Ye (2015)	Myanmar	135
Campos, Martins and Neto (2011)	Brazil	650	Ramos (2015)	Brazil	500
Alcântara *et al*. (2012)	Brazil	139	Ali *et al*. (2016)	Malaysia	241
Annamdevula and Shekhar (2012)	India	358	Ashraf, Osman and Ratan (2016)	Bangladesh	234

Caption: (A*) sample size for each study. Source: Own elaboration.

Competitive Positioning Matrix

The competitive positioning matrix traces a diagnosis on the elements of the organization that add more value to consumers, providing an advantage over the competition. The instrument relates the performance of the company vis-à-vis other competitors (relative performance) and the importance attributed by customers to the attribute (Stock and Lambert, 2001). In order to obtain the relative performance, it calculates the differences between the performance evaluations of a company and its main competitor. There are nine quadrants in the matrix, among which those called “greatest strength” and “greatest weakness” stand out, as shown in Figure 2.

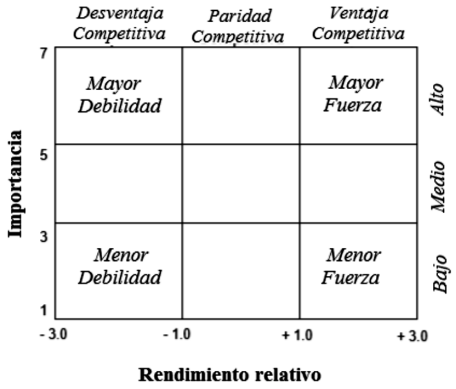

Figure 1.Competitive positioning matrix.
Source: Stock and Lambert (2001).

If the attributes are located in the quadrant "greatest strength", the company should implement marketing activities that highlight them, because these are aspects highly valued by clients and where the performance of the organization exceeds the practices of rivals. On the other hand, the "greatest weakness" elements need to be improved urgently. They include attributes of great importance but there are other companies in the industry that execute them more efficiently and effectively than the form of organization analyzed (Stock and Lambert, 2001).

Resource-based view

The influence of resources on the performance of the organization was an idea that has gained notoriety with the Resource-Based View (RBV) theory. Among its principles, it declared that an attribute package can provide the company with an advantageous position in the competitive market. However, this differential is only sustained in time if each resource retains its value, scarcity, and inimitability, added to the capacity to exploit it in an organized manner (VRIO approach, see Figure 3). Rarity and value, for example, are necessary, but not sufficient to achieve a sustainable competitive advantage. The simultaneous satisfaction of these four characteristics is that it leads a given resource to be perceived as a strategic asset for the company (Barney and Hesterly, 2007; Wu, 2010; Sanches and Machado, 2014). This concept forms the structural current, which presupposes a static behavior of the segment. In addition, Sanches and Machado (2014) reported that the VRIO model allows to evaluate the strengths and weaknesses of the organization.

Table 2.
Resource-based view – VRIO.

A resource is (…)				
Valuable?	Rare?	Costly to imitate?	Exploited?	Competitive implications
No	No	No	No	disadvantage
Yes	No	No	Yes	parity
Yes	Yes	No	Yes	temporary advantage
Yes	Yes	Yes	Yes	sustainable advantage

Source: Barney and Hesterly (2007).

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Complementarily, the other current of thought, called process school, recognizes that the creation of strategic resources passes through the basic competences and internal capacities of the company. It is not enough to just have them, it is necessary to optimize the way the team uses them (Sanches and Machado, 2014).

Methodology

The methodological design adopted in this study is shown in Figure 4. Initially, a bibliographic review of the quality of services in education centers was carried out. In this step, 236 attributes capable of evaluating service quality were listed. Criteria of similarity, agglutination, and specificity were applied to refine the variables. Next, the 22 attributes most cited in empirical studies were selected (Figure 1). This set was subjected to analysis by 5 students and 5 professors from each education institution investigated: Federal Institutes of Education with operations in Rio Grande do Norte (IFRN) and Paraíba (IFPB). These subjects were members of courses in the field of computer science. A total of 20 people participated in this process as judges. They were asked about the levels of clarity and relevance of each of the attributes. Furthermore, they could suggest reformulating the preliminary way in which attributes were defined by including, removing, or replacing a used word. This process helped adapt the language to the local context.

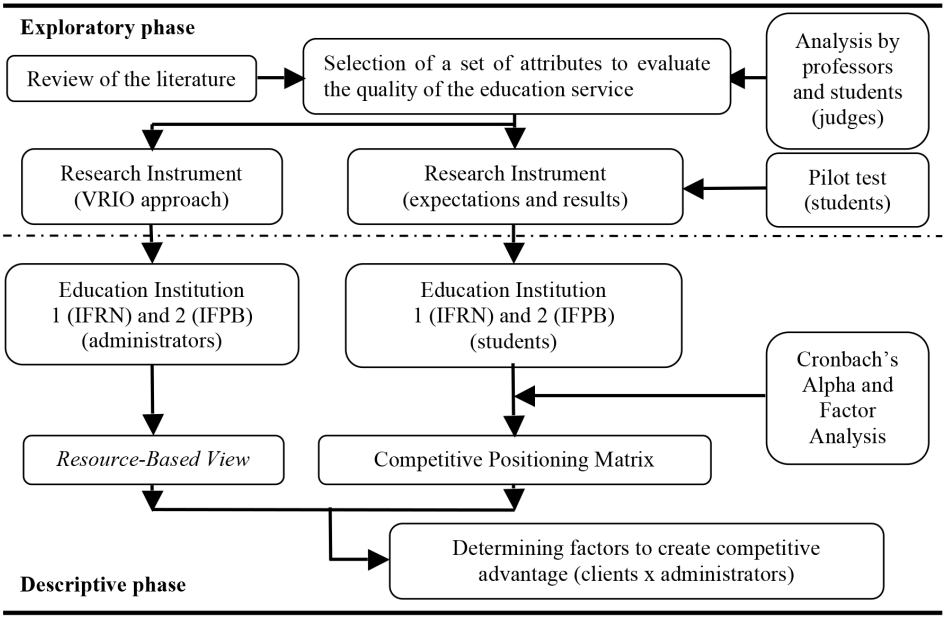

Figure 2. Methodological design.
Source: Own elaboration.

Based on the selected attributes, two structured questionnaires were created. One of them, with the objective of capturing the expectations and the performance perceived by the students, and/or the other perceptions of administrators through the VRIO approach.

The first research instrument consisted of three modules. In the first section, only questions on sociodemographic aspects were considered. In the second and third sections, respondents indicated the degree of importance and perception of the performance given to each of the attributes in their education institutions, respectively. For the last two modules, responses were captured using an 11-point Likert scale, ranging from zero (not important/bad performance) to ten (very important/excellent performance). Prior to the collection, a pilot test with 10 students was carried out, five from each of the institutions surveyed (IFRN and IFPB). This procedure made it possible to calibrate the final instrument.

The other questionnaire retained the judgments of the administrators (course coordinators) about the contribution of each attribute in the creation of competitive advantages. Therefore, the respondents were asked about the level of value, rarity, imitability, and organization that each of them offered.

To gather together the answers, an 11-point Likert scale was used, ranging from zero (no value/not rare/easy to imitate/not exploited by the organization) to ten (very valuable/very rare/difficult to imitate/very exploited by the organization). The application of the questionnaires was conducted in two public education institutions in northeastern Brazil: Instituto Federal de Educação do Rio Grande do Norte (IFRN) and Instituto Federal de Educação de Paraíba (IFPB). Studies by Butt and Rehman (2010), Annamdevula and Shekhar (2012), and Ali et al. (2016) justify the choice. Only the students of the computer science courses participated in the survey, supported by two criteria: they represented the majority of the students of each institution and it was a point of intersection between them.

In addition, Cronbach's alpha was used to evaluate the level of internal consistency of scale used and factor analysis to reduce the number of variables used in order to simplify data analysis (Hair Junior et al., 2009).

Finally, a comparison was made between the perceptions of students and administrators on the factors that determine the creation of competitive advantages. For this, the competitive positioning matrix and the resource-based view (VRIO prism) were used. Thus, it was possible to analyze if the priorities of actions desired by the student class converged, or not, with the priorities of the administrators.

Attributes

The 22 attributes used in the study are shown in Figure 5. The phrases that define each of these variables already contemplate the notes of the participating judges (students and professors) of the questionnaire improvement process. In front of the suggestions offered, only the V17 element (courses) was rewritten.

Table 3.
Attributes used in the research.

ATTRIBUTES
V1. Didactics: method of teaching adopted by professors (level of demand, ability to motivate students and encourage their participation in class, way knowledge is transmitted, interest in the academic progress of students, content addressed is current and appropriate, balance between theory and practice, assessments, adoption of additional class events such as technical visits).
V2. Qualification: technical knowledge, qualifications, and experience of the professors.
V3. Professor Service: professor service (courtesy, punctuality, attention with which they treat students, availability to serve them in supplementary classes, compliance with content and class schedules, proper use of class time).
V4. Course Coordination: agility, efficiency, and effectiveness with which the coordination of the course gives answers to the complaints of the students, the relationship of the coordination office - student, schedule of operation of the segment.
V5. Library: variety, quantity, topicality, state of conservation and organization of the collection available in the library (books, pamphlets, journals, monographs, among others), adopted loan system.
V6. Environmental comfort: thermal comfort and lighting of the environment (classrooms, laboratories, libraries, bathrooms, corridors, sport spaces, among others).
V7. Physical layout: arrangement of furniture and multimedia equipment in classrooms (school chairs, projectors, blackboards, etc.).
V8. Hours: hours of operation of the institution, administrative and academic sectors (protocol, library, academic secretary, health sector, coordination, management, among others).
V9. Number of classrooms: number of classrooms available in the institution.
V10. Laboratories: availability of equipped and modern laboratories.
V11. Cleanliness: cleanliness and sanitization of environments (classrooms, laboratories, libraries, bathrooms, corridors, sport spaces, among others).
V12. Maintenance: state of conservation of physical spaces (classrooms, laboratories, libraries, bathrooms, corridors, sport spaces, among others).
V13. Administrative Staff Service: administrative staff service (courtesy, punctuality, attention and availability to serve students, adequate knowledge of administrative systems and routines).
V14. Auxiliary Services: complementary services offered by the institution (cafeteria, refectory, reprography, medical and psychosocial services, among others).
V15. Security: security conditions offered to students (presence of security guards, closed-circuit television, among others), even in the environment of the institution.
V16. Image: image and reputation of the institution in society.
V17. Courses: recognition of the courses offered by the institution to society and their adaptation to the needs of the local productive sector (shops, industries, among others).
V18. Internet: internet access through Wi-Fi for academic purposes.
V19. Location: location of the institution.
V20. Parking: number of spaces available for parking is suitable to the demand.
V21. Other Academic Activities: opportunity for students to participate, as a scholarship or volunteer, in research and extension projects offered by the institution.
V22. Complaints: how employees receive, record, handle, and respond to student complaints.

Source: Own elaboration.

Universe, Sample, and Collection Plan

The population is comprised of 499 students enrolled in courses in the field of computer science in two public educational institutions: Federal Institute of Education of Rio Grande do Norte (IFRN) and Federal Institute of Education of Paraíba (IFPB). The sample had been stratified by institution. With a non-probability character, it reached the a maximum of 350 students, as shown in Table 1. The calculation of the sample size was developed assuming a 4% error and a 95% confidence level. Comfort and accessibility criteria were used to select respondents. A safety margin (10%) was adopted to ensure that any removal of questionnaires would not have adversely affected the value of the sample.

On the other hand, the course coordinators—one from each institution investigated—were questioned. Interviews with students and administrators took place between October and December 2016 and were carried out by a properly trained team. The places of approach were limited to classrooms and laboratories, in the case of students, and meeting spaces, in the case of administrators.

Table 4.
Universe and Sample

Institutions (acronym)	Universe	Sample	Projected Quantity
IFRN	303	202*	223
IFPB	196	148*	163
Total	499	350	386

Source: Research (2016).
Key: (*) Assuming a 4%error and a 95% confidence level.

Only those questionnaires that met the following criteria were considered valid: a) all the questions marked with an indication of a single answer (withdrawal of those containing missing values and/or multiple answers); b) the marked answers could not present a homogeneous behavior (repetition of a single note). In the end, 362 questionnaires were validated.

Presentation and Analysis of the Results

The results come from 362 valid answers, from a total of 386 questionnaires applied. The research instrument, comprised of 22 variables, presented a Cronbach's Alpha of 0.954. For Hair Junior et al. (2009), this value is acceptable and points to high construction reliability. In addition, factor analysis was used with the method of extraction of major components and Varimax rotation. The studies by Milan, Corso, and Eberle (2013) and Ramseook-Munhurrun and Nundlall (2013) justify this choice. In this statistical technique, values representing quality gaps (performance scores of each of the respondents subtracted from their respective importance scores) were used.

According to Table 2, the values obtained in the KMO (0.960) and Bartlett's sphericity tests (4608.182, significant at 0.000) indicate the suitability of the sample to the technique. As for the communality of each variable, the indices oscillated between 0.442 and 0.744, which indicates that the variables adequately explain the factor. These values are in accordance with the parameters suggested by Hair Junior *et al*. (2009).

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Table 5.
KMO and Bartlett tests.

Kaiser-Meyer-Olkin (KMO) measure of adequacy	0.960	
Bartlett's sphericity test	Chi squared	4608.182
	Degrees of freedom (gl)	231
	Significance	0.000

Source: Research (2016).

Twenty-two variables were grouped into two factors that explain 61.34% of variance from the original data (Table 3). Each dimension encompassed eleven elements. The first factor (D1) stood out for incorporating aspects of comfort, team of professors, and physical structure. The other factor (D2), in essence, focused mainly on customer service and auxiliary services.

Table 6.
Dimensions extracted from the factor analysis.

Scale attributes	D1	D2
V2. Qualification	0.816	
V3. Professor service	0.549	
V6. Environmental comfort	0.602	
V7. Physical layout	0.697	
V9. Number of classrooms	0.750	
V11. Cleanliness	0.792	
V12. Maintenance	0.666	
V15. Security	0.675	
V16. Image	0.809	
V17. Courses	0.548	
V20. Parking	0.705	
V1. Didactics		0.577
V4. Course Coordination		0.666
V5. Library		0.481
V8. Hours		0.690
V10. Laboratories		0.624
V13. Administrative team service		0.589
V14. Auxiliary Services		0.822
V18. Internet		0.611
V19. Location		0.705
V21. Other Academic Activities		0.707
V22. Complaints		0.755
Percentage of explained variance (%)	53.628	7.714
Accumulated percentage of explained variance (%)	53.628	61.342

Source: Research (2016).

Competitive advantage from the point of view of the students

The Competitive Positioning Matrix allowed the identification of attributes that demanded improvement actions from administrators. Table 4 illustrates notes resulting from this instrument. Aspects of the service that are projected in the quadrants of greatest and smallest weakness should receive special attention, balancing the degree of urgency according to the priority level established by the students. For the IFRN, qualification of the team of professors (V2) and environmental cleanliness (V11) represent the greatest competitive deficiencies. These findings make the ideas of Campos, Martins, and Neto (2011) and Dos Santos (2014) robust. They are configured as the attributes more valued by students in which the institution has a performance inferior to the best practices of the market.

In contrast, the variables mentioned above occupied the seal of greatest strength for the IFPB, along with environmental comfort (V6). This reinforces the need for the IFRN to implement, as a matter of urgency, actions that improve the level of service provided. Butt and Rehman (2010) reinforce these notes. These authors assert that attributes such as courses offered, learning environment, and classroom facilities have a significant and positive impact on graduate satisfaction. Nevertheless, the knowledge of the professors is the most influential factor, which requires greater administrative attention (Butt and Rehman, 2010).

Thus, it is proposed that: the institutional policy of training personnel be more effective, providing the participation of professors in postgraduate programs, trainings, courses, and scientific events; there be control of hygiene methods; administrators be required to comply with contractual clauses by the contractor; there be periodic maintenance of equipment that contributes to thermal comfort and lighting. In such cases, administrative inertia can lead to customer dissatisfaction and transaction disruption.

In addition, other elements also represent a competitive vulnerability. However, this threat is less intense because the degree of importance given by students is low. Although organizations have underperformance in relation to competitors, in aspects undervalued by customers, improvement actions can be put on a secondary level. This is what happens with the attributes that are within the quadrant of least weakness. Therefore, the recognition and suitability of courses (V17) for the IFRN organization; as well as procedures in relation to course coordination (V4), hours (V8), auxiliary services (V14), internet (V18), location (V19), and complaints (V22) for the IFPB are attributes found in this quadrant.

On the other hand, there are traces of services that are competitive benefits. Aspects that provide the differential of a company in relation to other competitors. They represent elements that should be praised, including the implementation of marketing campaigns that emphasize a greater or lesser intensity, which depend on the hierarchy of priorities determined by customers. The great strengths of a company symbolize highly valued attributes, where the performance of the institution surpasses the practices of rivals.

In this context, laboratories (V10) and internet (V18) were identified as the main points of competition of the IFRN institution. Because it is a course in the field of computer science, the exploitation of Information and Communication Technologies (ICT) is indispensable within the classroom. Supported by the foundation set by Alves (2009), it is recommended that maintaining or improving school performance is the most appropriate strategy for the attributes under discussion.

Nevertheless, in other scenarios, specificities can lead to the same resources being subject to divergent evaluations by the client. In the research by Dos Santos (2014), for example, it was

identified that Internet access was one of the elements that needed to be improved immediately. The students of courses in the field of social sciences, in the mixed mode of teaching (face-to-face and distance), recognized high deficits in quality in the provision of services.

Finally, for the IFRN: auxiliary services (V14), location (V14), and complaints (V22) were left in the quadrant of smallest strength. These are attributes that offer a competitive advantage, but students place them at a very low valuation level. In this case, it is recommended to maintain the level of service offered.

Table 7.
Performance and importance medians of the attributes by institution.

Scale Attributes (Initials)	IFRN				IFPB			
	M_D	M_I	D_{REL}	M_ação	M_D	M_I	D_{REL}	M_ação
Dimension 1(D1)	8.97	8.96	0.14	-	8.83	8.99	-0.14	-
V2. Qualification	9.26	9.34	-0.21	Greatest Weakness	9.47	9.36	0.21	Greatest Strength
V3. Professor service	8.85	9.02	0.07	-	8.78	9.03	-0.07	-
V6. Environmental comfort	8.75	8.78	0.20	Smallest Weakness	8.55	9.21	-0.20	Greatest Strength
V7. Physical layout	9.00	9.04	0.44	-	8.56	8.97	-0.44	-
V9. Number of classrooms	8.83	8.90	-0.01	-	8.84	8.80	0.01	-
V11. Cleanliness	9.12	9.17	-0.27	Greatest Weakness	9.39	9.47	0.27	Greatest Strength
V12. Maintenance	9.16	9.24	0.46	-	8.70	9.13	-0.46	-
V15. Security	8.70	8.88	0.06	-	8.64	8.83	-0.06	-
V16. Image	9.42	9.25	0.29	-	9.13	9.05	-0.29	-
V17. Courses	8.86	8.84	0.22	Smallest Weakness	8.64	9.04	-0.22	-
V20. Parking	8.72	8.13	0.33	-	8.39	7.99	-0.33	-
Dimension 2 (D2)	8.58	8.72	0.94	-	7.64	8.67	-0.94	-
V1. Didactics	8.90	9.14	0.30	-	8.60	9.08	-0.30	-
V4. Course Coordination	8.71	8.85	1.04	-	7.67	8.66	-1.04	Smallest Weakness
V5. Library	8.76	8.87	0.30	-	8.46	8.96	-0.30	-
V8. Hours	8.80	8.94	1.06	-	7.74	8.62	-1.06	Smallest Weakness
V10. Laboratories	8.75	9.13	0.90	Greatest Strength	7.85	8.96	-0.90	-
V13. Administrative team service	8.84	8.98	0.41	-	8.43	9.05	-0.41	-
V14. Auxiliary services	8.58	8.60	2.10	Smallest Strength	6.48	8.15	-2.10	Smallest Weakness
V18. Internet	8.80	9.07	1.07	Greatest Strength	7.73	8.76	-1.07	Smallest Weakness
V19. Location	7.37	7.37	2.11	Smallest Strength	5.26	7.31	-2.11	Smallest Weakness
V21. Other Academic Activities	8.30	8.32	0.51	-	7.79	9.02	-0.51	-
V22. Complaints	8.61	8.69	0.63	Smallest Strength	7.98	8.76	-0.63	Smallest Weakness

Key: MD – performance median; MI – importance median; DREL – relative performance (Subtraction of the performance of the company by the performance of the competitor); M_ação – action proposed by the competitive positioning matrix.
Source: Research (2016).

Competitive advantage from the point of view of the administrators

In order to determine the action priorities of the administrators of each institution, the resource-based view theory with a VRIO approach was used. On the other hand, evaluating the degree of contribution of each variable in relation to competitiveness allows us to understand why a company values improvement actions in certain aspects of the service, while others do not give much importance to the same element. For this purpose, an index (called Factor) was used to help understand how much an attribute leads the company to develop a competitive advantage.

The calculation of this factor corresponded to the sum of the scores, awarded by the administrators, based on the criteria established by the VRIO approach (Table 5). In this study, value interval standards were adopted to evaluate in which competitive position each attribute was placed. These are: scores between 0 and 9 (competitive disadvantage); 11 and 20 (competitive parity); 21 and 30 (time advantage); 31 and 40 (sustainable advantage).

Table 8.
Scores assigned by the administrators, attribute by attribute, with respect to the VRIO approach criteria.

Scale attributes (Initials)	IFRN							IFPB						
	V	R	I	O	Factor	R	IC	V	R	I	O	Factor	R	IC
Dimension 1(D1)														
V2. Qualification	9	1	8	10	28	3	VT	10	2	5	10	27	6	VT
V3. Professor service	10	3	7	8	28	3	VT	10	9	1	5	25	7	VT
V6. Environmental	8	1	9	8		7	VT	10	2	1	8		13	VT
comfort					26							21		
V7. Physical layout	8	0	9	8	25	10	VT	10	4	1	5	20	18	P
V9. Number of	9	1	5	7		15	VT	9	3	9	7		4	VT
classrooms					22							28		
V11. Cleanliness	9	0	2	8	19	20	P	10	5	1	9	25	7	VT
V12. Maintenance	10	2	6	6	24	13	VT	10	3	3	7	23	9	VT
V15. Security	7	2	5	8	22	15	VT	10	2	1	8	21	13	VT
V16. Image	7	1	8	9	25	10	VT	10	1	10	9	30	2	VT
V17. Courses	9	3	9	7	28	3	VT	10	2	9	9	30	2	VT
V20. Parking	10	1	7	8	26	7	VT	7	1	5	10	23	9	VT
Dimension 2 (D2)														
V1. Didactics	10	3	5	7	25	10	VT	10	5	8	8	31	1	VS
V4. Course	8	3	3	6		17	P	10	2	1	5		21	P
Coordination					20							18		
V5. Library	8	4	8	8	28	3	VT	9	2	1	8	20	18	P
V8. Hours	7	3	4	6	20	17	P	9	1	1	9	20	18	P
V10. Laboratories	10	4	9	7	30	1	VT	10	5	9	4	28	4	VT
V13. Administrative	8	4	3	4		21	P	10	1	1	9		13	VT
team service					19							21		
V14. Auxiliary services	7	2	4	7	20	17	P	9	1	3	9	22	11	VT
V18. Internet	9	0	7	10	26	7	VT	8	0	1	9	18	21	P
V19. Location	7	4	3	9	23	14	VT	10	2	1	8	21	13	VT
V21. Other Academic	8	4	9	9		1	VT	10	5	3	4		11	VT
Activities					30							22		
V22. Complaints	8	1	3	6	18	22	VT	10	1	1	9	21	13	VT

Caption: V – assigned value; R – rare; I – difficult to imitate; O – exploitation level of the attribute; Factor – factor that measures the competitive position (Sum of the scores assigned to the VRIO criteria); R – classification according to the factors; IC – competitive implications.
Source: Research (2016)

From the point of view of management, most of the attributes are constituted as a time advantage (VT). For Barney and Hesterly (2007), service aspects are valuable, rare, exploited; however, the cost of imitating them is not so high. In short, the levels of rarity and difficulty in imitating were low. Thus, there are indications that in education there is a broad capacity of competitors to copy strategies. This leads to the standardization of teaching methods, physical structure, attention; in short, of educational services as a whole. This compromises the uniqueness of the resource, according to Toledo and Fernandes (2013). In this scenario, Montgomery and Porter (1998) assure that the organization will achieve a competitive advantage due to restrictions on the options of competitors, such as patents and concessions.

There is a need for management to frequently control the resources that transmit a temporal advantage, always in search of adding value to the element. An institutional innovation policy, for example, will allow a more effective protection of this competitive position and be the difference of a sustainable state. This thought is guided by the ideals of Cruz, Santos, and Quintal (2016).

Other aspects of services represent the competitive parity position (P). Cleanliness (V11), for the IFRN, is perceived as a variable with value and exploited by the school. However, it does not appear as a resource that is rare and difficult to imitate. The administration does not see that this attribute will lead one student to choose one institution over another. Nor does this constitute a weak point of the organization. Therefore, those that fall into this competitive position tend not to be in the top priority for improvement. For example, that was the case of the attributes: administrative team and auxiliary services (IFRN); internet, library, and physical layout (IFPB); course coordination and hours (concomitantly for IFRN and IFPB).

Furthermore, the didactic classification (V1) is highlighted as an attribute that provides a sustainable advantage, in the opinion of administrators. They see it as a valuable aspect, rare, difficult to imitate and operated by the IFPB. This confirms the ideas of Toledo and Fernandes (2013).

Consonances and differences between competitive advantage perceptions

There is no full alignment between action priorities. For the IFRN, professor qualifications (V2) and courses (V17) are points of intersection. Students and administration see them as attributes that need improvement action in different degrees. While the former sees them as the main priorities for improvement, administrators point out that, if the level of service provided is not maintained or increased, the transition competitive advantage threshold will cease to exist. Similarly, administrators and students converged on the inevitability of reforming the level of service provided in the dimension of comfort, team of professors, and physical structure (D1).

For the IFRN, dissonances were recorded on issues of cleanliness (V11), environmental comfort (V6), laboratories (V10), other academic activities (V21), and professor service (V3). In the first two attributes, the urgency to improve the level of service was a unique demand of the students. For the latter aspects, only the administrators frame them in the list of urgent measures for improvement.

As for the IFPB, the misalignment between priorities was more evident. The students see an urgent need to improve performance in internet attributes (V18), complaints (V22), course coordination (V4), hours (V8), auxiliary services (V14), and location (V19). For administrators,

improvement priorities should focus on the professor didactics (V1), corporate image (V16), courses (V17), and laboratories (V10). In terms of dimensions, the two categories were in tune. Customer service and auxiliary services (D2) was established as a priority in the implementation of actions to improve the service provided.

The inconsistency between the person demanding a service and the offeror, with regard to the aspects that deserve to be reformulated immediately, causes failures in the provision of services. Administrative actions must converge with what clients see as a priority. Errors in this alignment will lead to high levels of dissatisfaction and loss of students. According to Eberle (2009), the administration needs to know and satisfy customers better than the competition, this will make it possible to have a profitable performance.

Conclusions

This article proposes a discussion on the level of synchronization between the improvement priorities of clients and administrators. To this end, a comparative analysis was carried out based on the use of a competitive positioning matrix and a resource-based view.

The findings indicate that there is a lack of alignment between the order of importance of improvement actions conferred by students and administrators. For IFPB students, for example, Internet was perceived as an attribute requiring a higher level of service. There was a need for the institution to improve performance. However, the coordinator of the course, in the capacity of administrator, had a different perception, putting other aspects in the top priority.

In this line, the didactic attribute of the professors linked to the IFPB also stood out. While administrators usually see it as an element capable of attributing a lasting competitive advantage, students consider that they receive a didactic model very similar to that practiced by competitors. Thus, concentrating resources on this aspect will not give the IFPB a competitive advantage. On the other hand, administrators and students converge on the competitive force that the IFRN laboratories represent. In this attribute, for example, it is healthy for the administration to be able to protect the competitive differential that this element provides. Therefore, the option for a constant flow of investment in this aspect (purchase of modern equipment, conservation of physical spaces, and replenishment of inputs) will lead to a stage of sustainability of the competitive differential.

These scenarios indicate that a low understanding of administrators regarding student improvement needs leads to failures in service delivery. According to Uncles, Dowling, and Hammond (2003), it is necessary to understand the desires of clients in order to offer a service with recognized quality and build long term relationships.

For these reasons, this study can assist administrators in formulating policies that guarantee quality excellence in education institutions. In particular, by alerting them to the magnitude of knowing and controlling the desires of students. This will eliminate inadequate improvement efforts, not investing time and money in something little or not desirable by customers.

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