

# QUALITY IN HIGHER EDUCATION: AN EVALUATION IN A GRADUATION COURSE IN ADMINISTRATION AT A LARGE UNIVERSITY IN THE MUNICIPALITY OF SÃO PAULO

## *QUALIDADE NO ENSINO SUPERIOR: UMA AVALIAÇÃO EM UM CURSO DE GRADUAÇÃO EM ADMINISTRAÇÃO EM UMA GRANDE UNIVERSIDADE NO MUNICÍPIO DE SÃO PAULO*

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## ABSTRACT

**Objective:** to assess the quality perceived by students in the on-site undergraduate course in administration at a private university located in the city of São Paulo, using a new scale developed from the skills expected in the training of future administrators.

**Design/Methodology/Approach:** a 46-item questionnaire was developed and tested, with multivariate statistical techniques (exploratory factor analysis and Cronbach's alpha). In total, 629 students participated in the study.

**Results:** the study identified four blocks of competences: managerial skills, problem solving, proactivity, communication, and creativity and techniques. In the global assessment of the quality of educational services, the institution achieved 76.19%, which indicates that the Administration course offered by the institution can be considered of good quality. The work delivers an instrument and an evaluation methodology that can be used to improve administration courses in the country.

**Originality/value:** the study is relevant when assessing the quality of higher education from a new scale based on the skills required to exercise the profession of an administrator defined by Resolution No. 4 of July 13th, 2005.

**Keywords:** Higher education, competences, exploratory factor analysis.



## RESUMO

**Objetivo:** avaliar a qualidade percebida pelos estudantes do curso de graduação presencial em Administração em uma universidade privada situada no município de São Paulo, com o uso de uma nova escala desenvolvida a partir das competências esperadas na formação dos futuros administradores.

**Design/Metodologia/Abordagem:** um questionário de 46 itens foi desenvolvido e testado, com técnicas estatísticas multivariadas (análise fatorial exploratória e alfa de Cronbach). No total, 629 alunos participaram do estudo.

**Resultados:** o estudo identificou quatro blocos de competências: gerenciais, resolução de problemas, proatividade, comunicação e criatividade e técnicas. Na avaliação global da qualidade dos serviços educacionais a instituição conseguiu 76,19%, o que indica que o curso de administração ministrado pela instituição pode ser considerado de boa qualidade. O trabalho entrega um instrumento e uma metodologia de avaliação que podem ser utilizados para a melhoria dos cursos de administração no País.

**Originalidade:** o estudo é relevante ao avaliar a qualidade da educação superior a partir de uma nova escala baseada nas competências requeridas para o exercício da profissão de administrador definidas pela Resolução nº 4 de 13 de julho de 2005.

**Palavras-chave:** Educação superior; competências, análise fatorial exploratória.

## 1 INTRODUCTION

Higher education institutions (HEIs) around the world are facing social, political and economic changes (Shah & Sid Nair, 2014). As service provider organizations with unique characteristics, where students undergo selection processes and tests to enter and to obtain their professions, such changes as the internationalization of higher education (Milan, Eberle, Corso & Toni, 2015; Teeroovengadum, Nunkoo, Gronroos, Kamalanabhan, & Seebalyck, 2019), the rise of private universities (Alam, Parvin, & Roslan, 2020), and the decrease in Government funding for public universities (Breslauer, 2016) have increased the rivalry between these entities, leading them to worry about remaining competitive, mainly in the perception of potential candidates and students. And this rivalry should continue to intensify more and more, despite the expectation that the total number of students in higher education in the world will jump from 216 million in 2016 to more than 594 million in 2040 (Calderon, 2018).

In this context, the quality of services provided by HEIs has been addressed as a factor that can consolidate and leverage institutions, while attracting the attention of educators, HEIs, government, companies and society as a whole (Milan et al., 2015).

In the Brazilian context, quality in education has always been an important factor, since the creation of the first universities in 1808 (Higher Education Personnel Improvement Coordination [CAPES], 2017). In Bachelor's Degree courses, formally evaluating the quality of higher education courses by the Brazilian Government began 25 years ago, through Law 9131/1995 and Decree 2026/1996 that created the National Course Examination, known as the Provão (Pires, Vargas, & Pires, 2017).

Subsequently, with the emergence of the SINAES (National Higher Education Assessment System), created by Law 10,861 of April 14, 2004, the concern about quality in higher education in Brazil was attested (Sousa, Silveira, Fortes, & Domingues, 2011). SINAES has three important dimensions of the process of evaluating Brazilian higher education, which are the evaluation of undergraduate courses, institutional evaluation and the evaluation of student performance. Course evaluation is carried out by committees of experts appointed by INEP (National Institute of Educational Studies and Research Anísio Teixeira). Performance evaluation, by ENADE (National Student Performance Exam), which involves the performance evaluation of students in the first and last years of undergraduate courses. And finally, there is the institutional assessment, which is carried out in two seg-

ments: an internal one, which is the self-assessment, conducted by an assessment committee (CPA - Own Evaluation Committee) of the educational institutions themselves; and the external one, in which there is an external commission appointed by INEP (Pires, Wargas, & Pires, 2017).

In 2017, aiming to improve the evaluation of higher education, SINAES introduced a new instrument for the Evaluation of On-Campus and Distance Undergraduate Courses that has 69 indicators distributed in three dimensions: didactic-pedagogical organization, faculty and tutorial; and infrastructure. Each indicator is assessed on a five-level scale, where 1 = no concept; 2 = insufficient; 3 = sufficient; 4 = very good/very well; 5 = excellent. Initially, this instrument was intended to assess the quality of teaching in-person courses only, but it also has indicators aimed at Distance Learning (EaD), which has become increasingly relevant in the country (Garcia & Silva, 2020).

It can be seen, therefore, that the models for evaluating the quality of educational services are important tools for quality management in a higher education course, as it is pointed out by SINAES (Sousa et al., 2011). And in this sense, HEIs need to contribute more efficiently considering the government, employers and other parties that can have a significant positive influence on institutional success, such as academic staff, students, parents, employers, government, supplier funds, local and regional communities. But the students are in fact the main stakeholders, and thus the quality of the educational service must be investigated from the perspectives of students in order to identify the quality factors that can be critical in higher education (Abbas, 2020) for institutions themselves can improve the educational services provided.

It is important to explain that the concept of quality has a multidimensional character making only a definition difficult, but the term “quality” usually implies the idea of something good. However, quality is not an adjective of universal construction, but a property found in beings, actions or objects. And this implies an evaluative position, which is linked to man’s morality and political condition. Quality in this way is self-referential, that is, it presupposes a subject or community that accepts certain standards as being desirable (Morosini et al, 2016).

The Law of Guidelines and Bases of National Education (LDBEN) (Law No. 9.394, 1996), in its article 1st § 2nd, establishes that “school education should be linked to the realm of work and social practice”. In its Section II - Principles and Purposes of National Education, article 3, item IX, there is a series of guiding principles and it states that education must be guaranteed with a standard of quality. However, it does not clearly define what this quality standard is (Morosini et al., 2016). But it states that it is the duty of the Union, together with states and municipalities, to observe and establish criteria to define what quality education is. And article 43, paragraphs I to VII, establishes the objectives that higher education must achieve both in relation to individuals and in relation to society (Law No 9.394, 1996).

In the case of Administration courses, the qualification of the educational service, object of this study, requires a careful evaluation of the training being developed. And in Brazil, there are few studies that discuss this problem (Regio, Schuch, Gomes, & Kneipp, 2014). And that is why this is a relevant study, as it aims to evaluate the quality of higher education in Administration, based on the competences required for the exercise of the profession of administrator, which were defined by Resolution No. 4, of July 13, 2005 (Ministry of Education [MEC], National Council of Education [CNE] and Higher Education Council [CES], 2005), from the perspective of students from a large private university located in the city of São Paulo. The hypothesis that drives this study is that it is possible to assess the quality of the Administration course using a new scale, based on the skills required by this resolution for future professionals trained in Administration. The scale of this study was developed to measure quality at the micro-level (Yildiz & Kara, 2009), as it is specifically aimed at the Business Administration course, and is based on the aforementioned resolution.

The research proposed here is based on the study carried out by Godoy & Forte (2007) to evaluate the training of administrators in relation to the competences suggested by the national cur-



riculum guidelines for the Administration course at a private university in the city of São Paulo. And this work is centered on the intertwining of the areas of business administration, education, and marketing.

It is noteworthy that a positive perception about the educational service received can lead to an increase in student retention, as the dropout or loss of a student implies a decrease in the HEI's revenue and weakens the image of the institution in the face of potential candidates (Milan et al., 2015). On the other hand, student satisfaction as well as a perception of superior quality help to increase retention and strengthen the image of the IES, thus attracting new students and retaining existing ones so that they continue to follow the institution, whether taking a new degree or conducting postgraduate courses (Gouvêa, Onusic, & Mantovani, 2016).

In the academic context, the contribution of this study adds to the knowledge of the subject. The methodological contribution is due to the scale created to measure the quality of the education provided, based on the skills required for the administrator's profession. As a justification, this study can help guide improvement decisions for the researched Administration course in order to improve its adequacy to the labor market as well as increase the professional and personal performance of these students, in addition to meeting the premises determined by the MEC.

The following sections describe the literature review, with issues related to quality, measurement scales and competencies required by administrators, followed by empirical study, methodology and analysis. The last section deals with discussions and recommendations for further research.

## 2 THEORETICAL REFERENCE

### 2.1 Quality in educational services

The assessment of service quality is different from that of physical products, as the production and consumption of services are inseparable, with the quality being assessed by the customer during the interaction with the service provider and its delivery. This evaluation occurs through the judgment made by the customer's perception about the global level of service excellence, which is an expression of the customer's attitude, but not synonymous with satisfaction (Parasuraman, Berry, & Zeithaml 1988).

In higher education, the quality assessment of educational services also uses marketing tools such as the SERVQUAL (Service Quality) model by Parasuraman et al. (1985; 1988), and the SERVPERF (Service Performance) by Cronin and Taylor (1992) to cite the most usual. More recently, some authors have proposed other models specifically aimed at higher education, such as the one developed for this work, such as Abdullah (2006) with his HEdPERF model, Suleyman and Yildiz (2009) with PERSPERF, Annamdevula and Bellamkond (2012) with the model HIEDQUAL and Abbas (2020) with HEISQUAL. The different scales created to measure the quality of services, including educational ones, reflect the disagreement that different researchers have on how to carry out this measurement. This makes them defend the investigation of service quality under the most varied parameters (Yildz & Kara, 2009), and this is the reason why the scale used in this study was developed, and an existing one was not used.

The subject is so relevant that measuring the quality of educational service has also been addressed in distance education (EaD), as can be seen in the study by Mantovani, Gouvêa and Tamashiro (2015), who evaluated a distance undergraduate course at the Open University of Brazil (UAB). It is important to emphasize that the instruments used to measure the quality of services consider dimensions or attributes that have similarities and differences, in addition to different analyses, and that vary according to research objectives, clients, institution, environment and time (Mabić, 2014).

Another point to be noted is that there are scales that are designed to measure the quality of educational service in higher education at a macro (university) level, such as the HEdPERF, which is a more generic instrument, and others that can be developed to do so. This micro-level assessment, for example, to assess an academic unit (a course) within a university (Yildz & Kara, 2009).



This work used an instrument created from the SERVPERF scale by Cronin and Taylor (1992), considering only the student's real perception of the course, and based solely on the competences required by the MEC for the Administration course. SERVPERF was created as a counterpoint to the SERVQUAL model by Parasuraman et al. (1985; 1988), which emerged as a tool to measure the quality construct, being quite popular in several industries. Silva, Moraes, Makyia and César (2017) indicate that the SERVPERF scale is an appropriate model to measure quality in higher education.

Cronin and Taylor (1992) criticized the SERVQUAL model both on its conceptual basis and in terms of operational application. And so they proposed that the "expectation" component (E) of SERVQUAL should be discarded, leaving only the "performance" component (D). The model, after being tested on a sample of 660 cases of service institutions, proved to be superior to the SERVQUAL model, as it is more capable of explaining the large variance in all aspects of quality in service, through the use of a one-dimensional scale. It also provides empirical support for the notion that perceived service quality actually precedes satisfaction, as proposed by Parasuraman et al. (1988).

## 2.2 Skills for training the administrator

The term competence is broadly related to what a person is capable of doing. A definition of competence that is used in the United Kingdom, which states that competence is the ability to perform tasks and functions in an expected standard. The International Standards Organization (ISO) defines competence as "the ability to apply knowledge and skills to achieve the intended results". But it is important to point out that 'the ability to do' differs between different traditions, with various levels of emphasis between the individual's skills and attributes, the quality of task production, and between prescription and interpretation (Lester, 2014).

An important distinction can be made between competency models that concern the attributes and abilities of individuals, and those that focus on activities or functions that need to be performed competently. The first approach would be individual, while the second one would be social. In the individual version, competence "can be considered as belonging to the person and represented as a profile or set of attributes that tends to change over time as the person develops in an area". The social perspective considers "what the person does to produce a result that can be considered competent, whether in a study context, social situation, or more commonly at work. Competence, in this sense, belongs to the context, describing competent actions [...] rather than the skills or attributes that contribute to being able to carry them out" (Lester, 2014: pp.2-3)

The individual perspective includes two main traditions, one stemming from work done on effective behaviors, mainly in North America since the 1950s, and the other, more loosely from the instructional design tradition, based on the educational goals work of Bloom et al. (1956). The North American behavioral competency approach is most notably represented by the work of the Hay-McBer organization (Hay-McBer, 1996), associated authors such as Spencer and Spencer (1993) and McClelland (1973), and others who have worked with that same line of action. It is based on identifying effective or "superior" job performers across the relevant context, and through the use of appropriate methodologies, it aims to identify characteristics associated with competent performance (Lester, 2014).

The instructional design tradition is primarily concerned with identifying curricula for training programs, primarily in the form of associated knowledge, skills, and (sometimes) attitudes. This approach goes beyond the knowledge-based curriculum that dominates technocratic models of professional development and has engaged itself particularly well in the so-called 'learning outcomes' approach to education and training - that is, placing the emphasis on what students know how to do as a starting point, rather than content delivered through teaching (Lester, 2014).



For the French, the concept of competence comprises knowledge, functional competences and behavioral competences (Deist & Winterton, 2005; Fleury & Fleury, 2001). Germans and Austrians adopt the concept of key qualifications (*schlüsselqualifikationen*), which involves personal skills, such as the ability to act autonomously and to solve problems independently, flexibility, ability to cooperate, practical ethics and moral maturity (Deist & Winterton, 2005).

In Brazil, based on the French model, Fleury and Fleury (2001, p. 21), competence is defined as "... knowing how to act in a responsible and acknowledged way, which implies mobilizing, integrating, transferring knowledge, resources, skills, which add economic value to the organization and social value to the individual". These authors divide competences into three blocks, which comprise the individual's relationships with the company in a systemic context. The first block involves the so-called business competence, which is the understanding of the business in terms of its objectives with regard to the market, customers and competitors. The second one involves the technical-professional skills necessary for a particular occupation, activity or operation. Finally, there are social skills, which involve interaction with people, and which use tools such as communication and negotiation.

In the case of Brazil, the determination of the MEC to organize higher courses in accordance with the curricular guidelines, which establish the profile of the graduate based on a set of skills and abilities, generated several discussions among specialists in management education, to create the set of skills and abilities that should guide the organization of pedagogical projects in undergraduate courses (Godoy & Forte, 2007). This set of skills and abilities was right then defined by the National Council of Education in Resolution No. 4, of July 13, 2005 (MEC, CNE, & CES, 2005).

Art. 4 - The Undergraduate Course in Administration must enable professional training that reveals at least the following skills and abilities:

I – recognize and define problems, set outsolutions, think strategically, introduce changes in the production process, act preventively, transfer and generalize knowledge and exercise, in different degrees of complexity, the decision-making process;

II – develop expression and communication compatible with professional practice, including negotiation processes and interpersonal or intergroup communications;

III – reflect and act critically on the sphere of production, understanding its position and function in the production structure under its control and management;

IV – develop logical, critical and analytical reasoning to operate with values and mathematical formulations present in formal and causal relationships between productive, administrative and control phenomena, as well as expressing themselves critically and creatively in the face of different organizational and social contexts;

V – have initiative, creativity, determination, political and administrative will, willingness to learn, openness to change and awareness of the quality and ethical implications of their professional practice;

VI – develop the ability to transfer knowledge from daily life and experience to the work environment and their field of professional activity, in different organizational models, revealing themselves as an adaptable professional;

VII – develop the capacity to prepare, implement and consolidate projects in organizations; and

VIII – develop the capacity to carry out consultancy in management and administration, administrative, managerial, organizational, strategic and operational opinions and expertise.

And it is expected that the student who completes the undergraduate course has the skills listed above for the Graduate Course in Administration (Regio et al. 2014).

Godoy and Forte (2007, p.9) developed a scale, based on Resolution No. 1, of February 2, 2004 (MEC, CNE, & CES, 2004), which establishes the National Guidelines for the Administration Course, bachelor's degree, and which establishes in its article 4º that what are the competences that must be acquired by the students of the Administration course. This resolution later had a new version, which is Resolution No. 4 of July 13, 2005, which was used in the present work. Then they applied the research questionnaire with students from the last semester of the administration course,



obtaining 441 respondents. As a result, the researchers found, after an exploratory factor analysis (EFA), four factors, which are:

- **Social competence:** refers to the ability to respect people with a sense of responsibility for their rights and duties, acting in accordance with ethical values. It also involves the ability to interact with people, always considering aspects of social responsibility in line with new situations and/or work pressures;
- **Competence in problem solving:** refers to the identification of problems and the development of solutions, applying the technical knowledge acquired in the course, using appropriate tools and methodologies, in order to generate results. It also involves the ability to think strategically and make decisions about the best strategy for implementing changes in work processes;
- **Technical-professional competence:** refers to the ability to carry out consultancy tasks and activities, with the objective of developing projects and/or products, in addition to the constant search for creative and innovative solutions;
- **Communication competence:** refers to the ability to express ideas in a clear and objective way, with logical, analytical and critical reasoning, maintaining an open channel of communication with peers and superiors.

Godoy and Forte (2007) emphasize that the study they carried out reflects the students opinion about the competences they suppose they have acquired (learned) during their undergraduate course. Godoy and Antonello (2009) continued the study carried out by Godoy and Forte (2007), with the same database, but added the results of seven individual interviews.

And there are more studies that are based on these resolutions. An example we have with Antonello and Dutra (2005), who in their study presented the systematization of the process of elaboration of the Pedagogical Project of a Course of Administration of a university with a focus on the development of competences. In this way, the skills to be developed by the students throughout the course were defined, as well as the adoption of the experiential learning approach as a facilitator in the training path. The authors classified the competencies listed in Resolution No. 1 as follows:

- **Management skills:** involves the ability to contextualize (reading the environment/situation); systemic view; systematization of decision making; readiness to change; business view; negotiation skills;
- **Social skills:** contextualize (i.e., ability to read the environment/situation); systemic view; systematization of decision making; readiness to change; business view;
- **Technical competences:** know processes and activities developed in organizations. Comprehend and know how and when to apply specific and general knowledge in your area of expertise; have the ability to review concepts and establish critical and analytical reasoning about them;
- **Learning competences:** having the ability to reflect -critical-emancipatory vision; possess reflective knowledge; self-development; make use of knowledge in action.

Another research was carried out by Regio et al. (2014, p.145), using an instrument developed and applied by Schuch (1976) with the inclusion of competencies based on the questionnaire by Godoy et al (2005). The study verified the competences acquired by the graduates of the Administration course at the Federal University of Santa Maria (UFSM). Two research questionnaires were developed, one of which was intended for graduates who were working in the Administration area – and which contained the questions from the questionnaire by Godoy et al. (2005), and another for those who were not working in the profession, and which asked only personal questions and data regarding their professional situation. Only the questionnaire sent to graduates who worked in the area was analyzed using data reliability analysis and exploratory factor analysis. As a result, the authors found four factors, which are:

- **Standards and values:** it involves respecting others, being self-critical, seeking self-development, considering the ethical values of the profession and communicating clearly and objectively;
- **Adaptation and Negotiation:** ability to make decisions based on the analysis of the various aspects of changes in work processes, remaining productive despite obstacles, seeking original and creative solutions as well as adapting to new situations and/or work pressures;
- **Knowledge:** this involves performing tasks and consulting activities in management and administration, preparing and carrying out projects, respecting people with a sense of responsibility for rights and duties, as well as transferring and applying technical knowledge in order to solve problems;
- **Technical-professional:** reasoning logically and analytically with a mathematical foundation and establishing formal and causal relationships between productive phenomena.

The results found in the factor analysis did not confirm those obtained in the study by Godoy et al. (2005), but the results of the descriptive analysis indicated that the competences proposed by the National Curricular Guidelines were being met in the UFSM Administration course.

### 3 METHOD

To conduct this investigation, the single case study method was adopted as it is suitable for the study of contemporary events that are not under the researcher's control, in addition to being able to generate greater understanding and insights into the phenomenon studied, which may bring both theoretical contributions and professional practice (Godoy & Forte, 2007). Furthermore, this is an exploratory study, as it intends to generate propositions that will be tested in future research, such as the case under analysis (Yin, 2005).

A literature review was carried out to prepare a questionnaire based on an ordinal scale to measure the respondents' perception with 46 items. Next, the tool was analyzed by three specialists, one from the area of Education, another one from Sociology and one from Administration, all with PhDs to carry out the theoretical or face-to-face validation of the scale. The teachers consulted also validated the content by reading it and doing the semantic analysis of the items (Garcia & Silva, 2020). This approach is called in the literature as judgment analysis, which is based on the judgment made by a group of experienced judges in the field and who will analyze whether the content is correct and adequate to what is proposed (Crestani, Moraes, & Souza, 2017).

The questionnaire was submitted to a pre-test with 20 students to carry out a semantic evaluation, seeking to verify whether the items are understandable to the respondents, who are subjects of the same population to which the instrument will be applied, and thus identify and eliminate problems in the questionnaire (Almeida & Botelho, 2006; Garcia & Silva, 2020). As a result, it was found that the research questionnaire did not need to be changed.

Data collection involved the application of a new structured questionnaire, developed for this study, and organized into two blocks. In the first block, information is requested for the characterization of the subjects. The second block, in turn, involved the 46 items that were answered using a six-point Likert scale (fully disagree, strongly disagree, slightly disagree, slightly agree, strongly agree, and fully agree), with the objective of collecting the students' opinion on the competences and skills achieved provided by the educational services offered. The scale items were created from the competences suggested by the MEC in Resolution No. 4.

The study data were collected both in the morning and at night, in the four campuses of the institution at the time, with the application of a self-administered questionnaire, in March 2010, with students from the 7th and 8th semesters of the Administration course at the University. Beta, a



private nonprofit institution, with four existing units in the city of São Paulo, and which, according to Ministry of Education [MEC], National Institute of Studies and Educational Research Anísio Teixeira [INEP], & Directorate of Educational Statistics [DEED] (2008), had 93,250 students, being considered the third largest institution of higher education in the country.

Of the 750 questionnaires distributed, 629 questionnaires were answered, which is equivalent to a success rate of 83.87%. Data collection was superior to that recommended by Hair, Anderson, Tatham, & Black (2005), who suggest a minimum of five and a maximum of ten respondents for each assertion, with the minimum sample required in this research being 460 students. As the questionnaire was answered by students who were present on the application date, the sample is classified as non-probabilistic (Godoy & Antonello, 2009).

As for the methodological approach, it is a cross-sectional study, of the survey type, using descriptive and multivariate statistical techniques such as exploratory factor analysis (EFA) and data reliability analysis. This methodology was used by Godoy & Forte (2007) and Regio et al. (2014) in their studies. For the elaboration of the statistical analyses, SPSS (Statistical Package for Social Sciences) version 21 was used.

## 4 RESULTS AND DISCUSSION

In this section the results will be presented and discussed. For better understanding, the section has been separated into two parts. The first will show the process of analyzing the results. The second, in turn, will discuss the results found.

### 4.1 Sample description

Among the survey respondents, females predominate, with a participation of 64%. Regarding age, almost half of the students were aged up to 25 years (43%). Most respondents had parents who had at most high school education (83%). The service sector is the field of activity of 60% of respondents. As for family income, 45% of students had a family income of up to R\$ 2,550.00 (1 to 5 minimum wages), and the reference minimum wage in 2010 was R\$ 510.00.

### 4.2 Research results

- a. For statistical validation, the research results were collected, tabulated and initially submitted to a univariate normality test (Kolmogorov – Smirnov) with Lilliefors correction, which indicated that the variables did not have a normal distribution. The Mahalanobis distance technique (D2/degrees of freedom) was also applied to detect multivariate outliers, which identified four cases as outliers, which were removed, following the recommendations of Rosa (1999). As for the missing values, as they correspond to only 1.70% of the total number of cases, there was no need to replace them by the median, and the listwise method was used for the analysis of multivariate statistics.
- b. Then an exploratory factor analysis (EFA) was applied using the principal components method with Varimax rotation. EFA is a multivariate interdependence technique that aims to simplify or reduce a large number of variables, detecting underlying patterns in the data, and determine a group of common latent dimensions, called factors, that are not directly observable (Fávero, Belfiore, Silva, & Chan, 2009). EFA was used in this study to identify the most relevant factors in the developed competence scale.
- c. The first processing with the factor analysis technique encompassed all 46 variables si-



multaneously, with a total of 529 valid cases. The results found in the KMO test (0.891) and in Bartlett's sphericity test ( $\text{sig} < 0.05$ ) signaled the applicability of EFA (Hair et al., 2005). The Bartlett's test, in turn, determines whether the sample's correlation matrix differs significantly from an identity matrix. However, the power of this test to reject the null hypothesis that the correlation matrix is equal to an identity matrix is impacted by the sample size, which is why its use in line with KMO is recommended (Agyeman & Cheng, 2020).

- d. The commonality matrix showed several variables with results below 0.5, which implied the removal of 8 variables. After removal, a new EFA was performed, where 10 factors were found. These were then submitted to the Cronbach's Alpha test (Hair et al., 2005) which provides a reasonable measure of reliability in a single test and can be applied in multiple choice questionnaires of dichotomous scales or attitudinal scales of polytomous variables (Shavelson, 2003). The value assumed by Alpha will be between 0 and 1, and the closer to 1, the greater the reliability of the dimensions (Hair et al., 2005; Hora, Monteiro, & Arica, 2010). The application of the technique obtained the following results: factor 1 (0.883); factor 2 (0.806); factor 3 (0.747); factor 4 (0.590); factor 5 (-0.325); factor 6 (-0.952); factor 7 (0.433); factor 8 (0.114); factor 9 (0.083) and factor 10 (only one variable – it is not possible to extract Cronbach's Alpha). Only factors 1, 2 and 3, which obtained Cronbach's alpha values above 0.7, were considered for the model, this value being considered the minimum acceptable (Streiner, 2003). This refinement of the scale resulted in the reduction of the initial 46 items to 21 items, distributed in three dimensions, with the Cronbach's alpha coefficient reaching values between 0.747 and 0.883, as seen above.
- e. With the scale found previously, a new factor analysis was performed. However, the commonality matrix indicated that there were variables that had results below 0.5, which led to the removal of 3 more variables.
- f. The remaining 18 items underwent a new AFE, whose results were for the KMO (0.907) and Bartlett's sphericity test ( $\text{sig} < 0.05$ ). For the selection of the most significant factor loadings, a rotation above 0.30 was chosen, as suggested in the researched literature for a sample size equal to or greater than 350 respondents (Fávero et al., 2009). As a final result, four factors were obtained, which together explain 60% of the variance in the sample data (Table 1). The other factors, as they have eigenvalues lower than 1.0, were not considered for analysis purposes.

**Table 1**  
**Total explained variance**

<b>Factor</b>	<i>Eigenvalues</i>	<b>% of variance</b>	<b>% Cumulative</b>
1	6.386	35.478	35.478
2	1.887	10.484	45.962
3	1.434	7.968	53.93
4	1.012	5.622	59.551

Source: Research Results (2010).

- g. Since the factor loading represents the correlation between the original variable and the factor, it is important to determine the level of reliability for interpreting the factor loadings. For this, the Cronbach's alpha coefficient was calculated again for each factor, as shown in Table 2, with values greater than 0.70.



**Table 2**  
**Result of factor analysis and Cronbach's Alpha**

Variables	Description	Factors			
		1	2	3	4
15	My course taught me to be creative to exercise the profession of a administrator.	0.659			
16	With my course I learned to look for solutions that please both parties involved in a transaction.	0.739			
17	I learned to explore the negotiation process better.	0.696			
22	My course made it possible to use the concepts in my daily life.	0.630			
25	In my course I learned to make comparisons and reason to look for management solutions.	0.542			
28	I learned to be more inquisitive when doing my job.		0.588		
37	The leader must always accept the news in the field of Administration.		0.688		
38	With my course it was easier to identify the problems in my daily life.		0.680		
39	With my course I developed the will to learn continuously.		0.713		
40	Over time I realized that it is necessary to change our conception in light of new knowledge.		0.778		
4	My course gave me a foundation to be creative.			0.774	
5	The concepts learned contributed a lot in the communication between groups and people.			0.776	
8	My course gave me the basis to be determined and focused on results.			0.735	
18	My course gave me the basis for being proactive.			0.648	
23	My course enabled the need to have complete control of business situations.				0.505
30	I developed the ability to implement plans.				0.543
34	My course placed great emphasis on project management.				0.773
42	My course placed great emphasis on developing knowledge so that I can consult.				0.741
% OF THE VARIANCE EXPLAINED BY THE FACTOR		35.478	10.484	7.968	5.622
% TOTAL VARIANCE EXPLAINED BY FACTORS					59.551
CRONBACH ALPHA GENERAL (FOR ALL INSTRUMENT)					0.882
CRONBACH ALPHA BY FACTOR		0.817	0.806	0.747	0.717

Source: Research Results (2010).



The allocation of questions allowed interpreting and naming the factors obtained, which were named according to the characteristics they presented after the exploratory factor analysis:

**Factor 1 – managerial skills.** It represents 35.48% of the explained variance. It involves the ability to interact and negotiate with people, using the concepts learned in the Administration course, and always looking with creativity and critical vision for satisfactory and balanced solutions that can meet demands that may eventually arise.

**Factor 2 – problem solving competence.** It represents 10.48% of the explained variance. It concerns the ability to identify problems and develop solutions based on acquired technical knowledge in order to generate results. It also implies being in a constant learning process, and developing a more critical view of the work.

**Factor 3 – proactivity, communication and creativity competence.** It represents 7.97% of the explained variance. It involves a proactive effort to communicate with peers and superiors, expressing ideas in a clear, objective and creative way in order to mobilize for change and generate the expected results of the work.

**Factor 4 – technical competence.** It represents 5.62% of the explained variance. It refers to the use of the knowledge and methodologies learned, as well as having a disciplined attitude, in order to be able to carry out consultancy and project implementation tasks and activities, aiming at the development of products, services or processes.

The first competency, called “managerial skills” involves the ability to interact and negotiate with people, using the concepts learned in the Administration course, and always looking with creativity and critical vision for satisfactory and balanced solutions that can meet eventual demands. This result is equivalent to the management, social and learning competences of Antonello and Dutra (2005), while in the research by Godoy and Forte (2007), the finding in this work is partially related to the “technical-professional” and “problems solving” competences. In the study by Regio et al. (2014: p.145) a competence similar to that found in this study was called by the authors as “adaptation and negotiation”. The definition given was: “making decisions based on the analysis of the various aspects of changes in work processes, remaining productive despite obstacles, seeking original and creative solutions as well as adapting to new situations and/or work pressures”, which represents 15.98% of the explained variance.

In the teaching of Administration, the problem solving factor appears in works such as those by Godoy and Forte (2007), Godoy, Antonello, Bido and Silva (2009) and Regio et al. (2014). It is part of the competence that was referred to as “knowledge”. It is worth reflecting, according to Godoy and Antonello (2009), on the aspects involved in the acquisition of this type of competence. And for this, the authors approached Perrenoud (1999), who says that this competence is not developed simply by placing the student in a situation of identifying and solving problems that were elaborated by their teachers in order to enable the application and assimilation of knowledge and building skills. But instead that the problematic situations must be realistic and raise questions that are real cognitive obstacles to the students, that is, the problem must be inserted in a situation that gives it meaning, and it is important to avoid artificial and decontextualized problems, which are often the ones teachers will use.

In third place appears the “competence of proactivity, communication and creativity”. This result is partially related to the “learning competence” of Antonello and Dutra (2005), and to the “problem solving” and “communication” competences of Godoy and Forte (2007). The study by Regio et al. (2014) is also partially related to the competences “standards and values” and “adaptation and negotiation”.

Finally, there is the “technical” competence, which refers to the use of the knowledge and methodologies learned, as well as having a disciplined attitude, in order to be able to carry out consultancy and project implementation tasks and activities, with a view to development of products, services or processes. It approaches the “technical-professional” and “problem solving” dimensions of Godoy and Forte (2007) and the “knowledge” competence of Regio et al. (2014). In this dimension, some results are noteworthy: for example, for item 34, 51% of students disagreed that the course received emphasized project management, and item 42 indicates, in turn, that only half of the students believe they received the necessary training to provide consultancy work. It can be concluded that, in general, this competence needs improvement, with the result indicating that it was the least developed in the students, according to their perspective.

Then, in order to assess the quality perceived by the students, each assertion had its answers grouped into two relative frequency classes, this being an adaptation of the method by Godoy and Forte (2007), considering that the scale used was Likert. The first class named “great disagreement” (GD) is composed of the grouping of responses “fully disagree” (DT) and “strongly disagree” (DB) and “slightly disagree” (DP); the second class; in turn, it is called “great agreement” (GC) and is composed of the grouping of the answers “slightly agree” (CP), “strongly agree” (CB) and “fully agree” (CT).

The questions were then organized in descending order of agreement (Table 3). Of the 16 questions with the highest degree of agreement among students (more than 60%), the first five are related to aspects involved with “problem solving” and “managerial skills”. It is also noticed that the five questions related to the competence “problem solving” have agreement rates greater than or equal to 80%, with an average of 86%. The “managerial skills” competence emerged as the second most developed among Beta University students, as the factor had an average agreement of 77.95%. The competence “proactivity, communication and creativity” ranked third in terms of development for students in this study, with an average score of 77.84%. Finally, we have the “technical” competence, which has the lowest average score of the four factors found, with a value of 59.95%

This demonstrates that, from the perspective of students, the skills acquired during the undergraduate course are concentrated in factors 2 (problem solving) and 1 (managerial skills).



**Table 3**  
Grouping responses into two classes of relative frequencies, in descending order

Question	Competence	GREAT DISAGREEMENT		GREAT AGREEMENT		Total Punctuation	Total %
		Punctuation	%	Punctuation	%		
40	Problem solving	46	7.52%	566	92.48%	612	100%
39	Problem solving	66	10.71%	550	89.29%	616	100%
22	Managerial	72	11.69%	544	88.31%	616	100%
28	Problem solving	85	13.89%	527	86.11%	612	100%
25	Managerial	105	17.05%	511	82.95%	616	100%
38	Problem solving	110	17.86%	506	82.14%	616	100%
5	Proactivity, communication and creativity	119	19.19%	501	80.81%	620	100%
37	Problem solving	123	20.00%	492	80.00%	615	100%
8	Proactivity, communication and creativity	128	20.61%	493	79.39%	621	100%
16	Managerial	139	22.56%	477	77.44%	616	100%
17	Managerial	147	23.90%	468	76.10%	615	100%
4	Proactivity, communication and creativity	149	23.95%	473	76.05%	622	100%
18	Proactivity, communication and creativity	153	24.88%	462	75.12%	615	100%
30	Technique	162	26.47%	450	73.53%	612	100%
23	Technique	212	34.64%	400	65.36%	612	100%
15	Managerial	215	34.85%	402	65.15%	617	100%
42	Technique	294	48.04%	318	51.96%	612	100%
34	Technique	313	51.06%	300	48.94%	613	100%

Source: Research Results (2010).

Then, the results in Table 3 were grouped in order to obtain a more general assessment (Table 4).

**Table 4**  
Institutional quality assessment through competences

Disagreement		Agreement		Total	
Total of answers valid	%	Total of answers valid	%	Total of answers (geral)	%
2,638	23.81%	8,440	76.19%	11,078	100%

Source: Research Results (2010).



The result found after evaluating the students' competences obtained in the Administration course at Universidade Beta was 76.19% (Table 4). Considering a scale that goes from 1 to 100%, it can be pointed that the administration course has a good quality, which means that, in the students' perception, the institution is able to pass on the skills that they believe that are important for their professional future. But the result also indicates that the institution must continue working to reach a score that leads to the achievement of a result superior to what was obtained here. In addition, the hypothesis that triggered the development of this study was confirmed, as it is possible to assess the quality of education perceived from the students' perspective of the acquired skills.

## 5 CONCLUSIONS

The administrator's job market highlights the need for convergence between what is taught in HEIs and what they need (Regio et al., 2014). In this sense, this research sought to contribute by studying the perception of quality in education services based on the skills required by Resolution No. 4, of July 13, 2005 to assess any flaws in the curriculum and thus be able to contribute to the development of strategies by the institution under study in order to solve them. Thus, a research instrument was developed, and it sought to identify which competences students consider to be the most important, and, finally, to assess the quality of education perceived by these students at the university where the study was carried out.

It should be noted that, according to INEP, there were 2,326 Administration courses in 1,616 institutions, 1,470 of which were private and 146 public in Brazil, and 874 of these were located in the Southeast (MEC, INEP, & DEED, 2019). Between 2008 and 2017, there was an increase in the number of enrollments in the Administration area, from 1,050,704 in 2008 to 1,221,995 in 2017, showing a growth of 16.30%. However, the number of on-site Administration students decreased by 16.75%, from 855,140 enrollments in 2008 to 711,892 in 2017 (Conselho Nacional de Educação [CNE], Câmara de Educação Superior [CES], Opinion No. 438/2020), due to the growth in technology courses related to Administration, which had an increase of 160.84% in enrollments in the same period. (Regio et al 2014; CNE & CES No. 438/2020). This shows how courses in the Administration area continue to be highly sought after in the country, due to economic and social issues, cost-benefit ratio and the way in which hiring takes place (CNE & CES Opinion No. 438/2020).

The evaluation of the psychometric properties of the scale carried out by exploratory factor analysis showed the final grouping of 18 indicators to measure individual competences in four factors, which were called: a) managerial skills; b) problem solving; c) proactivity, communication, and creativity; and d) technique. Furthermore, Cronbach's Alpha values show that all dimensions have good reliability. From the students' perspective, the skills acquired during graduation are concentrated in factors 2 (problem solving) and 1 (managerial skills).

The results obtained in this research, as seen, were compared with other studies carried out on Resolution No.4. And such studies met many of the findings obtained in this work. Considering that the list of competences from 2005 continues to be used, it is concluded that this study does not show a delay in relation to the theoretical scenario of competences that an administrator should develop.

And this research is yet another contribution in this regard, as it seeks to go a step further: assess the quality of education based on the skills and abilities required by Resolution No.4, of 2005 of the National Education Council (MEC, CNE, & CES, 2005) for the Administration course, using a new scale developed for this purpose. It is remarkable that the term competence was used in a broader sense than that adopted by CNE Educação (Godoy & Forte, 2007).



The evaluation of the quality of educational services, based on the students' perception, using the scale of competences and skills, evaluated the Administration course with 76.19%, which indicates that, from the students' point of view, this course is considered of good quality. However, the result denotes that the institution can still improve its educational services in the Administration course, especially in the "technical" competence, which presented an average score of 59.95%, which suggests, from the students' point of view, that the institution needs to improve the transfer of knowledge and methodologies of the profession to better train them.

As a limitation of this research, it can be pointed out that the work, due to the infeasibility of resources, was not able to evaluate students from other periods of the course, which could lead to different results at the time of completion of the study. Another limitation is the fact that the work was prepared with data that are now more than ten years old, collected at the time for a master's dissertation. This makes the results reflect the opinion of the students at that point in time. If the study were replicated, it is possible that other results would be found, either due to changes in the individual profile of the students (socio-economic, for example), or due to changes in the management of the institution itself, which is still active in the city of São Paulo. Another limitation of the study is that it did not verify whether the respondents were working or not in the area of Administration, as done in the study by Regio et al (2014). Furthermore, the reasons that led students to choose the Administration course were not investigated, as was done in Godoy and Forte (2007).

As suggestions for future studies, a sampling plan can be used by sections, with each section being a period of the course. It is also suggested that the scale used in this study be subjected to a dependency analysis using variables such as satisfaction and quality, which are operationalized by predictive and confirmation techniques for validation purposes, such as confirmatory factor analysis and structural equation modeling. Another suggestion is to try to replicate this survey with graduates.

Finally, in 2020 a proposal was made at the MEC to revise the National Curriculum Guidelines (DCN) for the Administration course to adapt the teaching of Administration to the current context, where globalization and information technology require new skills from graduates, which, in turn, lead to changes in the content taught in Administration courses (CNE & CES, Opinion No. 438/2020).

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Contribution	[Author 1]	[Author2]	[Author 3]	[Author 4]
Definition of research problem.	√			
Development of hypotheses or research questions (empirical studies).	√	√		
Development of theoretical propositions(theoretical work).	√	√		
Theoretical foundation / Literature review.	√			
Definition of methodological procedures.	√	√		√
Data collection.	√			
Statistical analysis.	√			
Analysis and interpretation of data.	√			√
Critical revision of the manuscript.	√	√	√	√
Manuscript writing.	√			
Other (APA standards)			√	

### **Conflict of Interest**

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

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