Factors influencing the choice of higher education institutions in Angola

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Higher education (HE) plays a predominant role in the development of any society. The expansion of HE all over the country (Angola) through the creation of new public and private higher education institutions (HEIs), as well as the creation of internal and external scholarships, have been some of the policies aimed at increasing access to HE, especially the increase in women’s access to HE. Giving the growing number of HEIs throughout the country, the Government’s main concern is their quality. This article aims to assess the factors that lead students to choose a particular HEI. The question raised is whether, the factors influencing the choice of an HEI in a developed country are the same when it comes to a developing country. To obtain the data, focus group was applied, whose answers were the basis for the construction of a survey that was distributed to students. As a result, 6 dimensions were obtained: Issues related to scientific activities, such as ranking of research, lectures and location; although the importance in determining the HEI does not carry the same weight in the choice of an HEI by these students.

Key words: Higher education (HE), determining factors in the choice of higher education institutions (HEI), Angola.

INTRODUCTION

Higher education (HE) has always been fundamental to a country’s development. In Angola, there was greater opening of HE at the end of the civil war in 2002. From that period onwards, there was an urge to increase the HE access to young people, which resulted in a policy set creation that includes creating new Higher Education Institutions (HEI), public and private, HE regulation standards establishment as well as implement internal and external scholarships system in order to encourage higher education search.

There is a paucity of literature in Angola (Langa, 2013), thus this work aim to determine the most relevant variables regarding an HE selection in Angola and confirm if they are or tend to be the same as in developed
countries, where the requirement level is considered higher.

**LITERATURE REVIEW**

Nowadays students are more careful regarding HEIs selection (Beneke and Human, 2010; Aydin, 2015; Aydin and Bayır, 2016). The reason for choosing a specific institution over another is based on the characteristics of that institution (Manoku, 2015), starting from reputation built over time (Agrey and Lampadan, 2014), cultural values and the environment in which the HEI is placed in, as well as the aspects connected to the student, such as his own interest regarding the degree course, his ability to attend it or family advices (Proboyo and Soedarsono, 2015). It is fundamental that the HEI managers are aware of the factors that influence students during HEI selection (Aydin, 2015; Rudhumbu et al., 2017), mainly for allowing those to use information in order to develop marketing strategies to attract students with the desired characteristics (Manoku, 2015; Wiese et al., 2010).

Chapman (1981) was one of the first to present a model with the factors that influence HEI selection, and says that it depends on two major groups, students' personal characteristics and external factors set (Table 1). Other authors point out economical, sociological, combined models and marketing approach, as basis to explain HEI selection process (Aydin, 2015; Manoku, 2015). The economic model has the assumption that the student wants to maximize its utility and minimize risks (Aydin, 2015), that is, it is based on the idea of a rational choice in which a comparison is made between costs and the HEI offered benefits (Krezel and Krezel, 2017).

Goodman et al. (2015) indicate there are many factors that the economic model does not refer to. Those factors are related to the fact that, on one hand, the HEI selection comprise the existence of a large number of institutions, each with several attributes, and the students preferences regarding institution registration and the institution attributes are heterogeneous; and on the other hand, students have precise information about HEI potential. Sociological model has its focus in the cultural and social aspects (Aydin, 2015), and sustains that sociological variables such as gender, academic capacity, sociological status, social context and other people opinions are the main factors that influence students in HEI selection (Mustafa et al., 2018). Combined model is the sum of both economical with the sociological model (Aydin, 2015).

All this "decision making process" regarding factors that may probably influence students in their HEI selection (Zain et al., 2013; Wiese et al., 2010; Manoku, 2015) is generally composed by a set of steps that should be properly understood by the institution (Wiese et al., 2010). These authors claim that these steps comprise recognizing the need to obtain superior education, gathering information about the institution and course, institution evaluation, institution selection and its registration process. Manoku (2015) says that selection of HEI is compared to acquisition process, in which several stages are analyzed (marketing approach), and therefore it is not an easy process to understand (Aydin and Bayır, 2016; Lonela and George, 2014). The information gathering stage includes the process of factors identification that influences students during institution selection. Institution evaluation and selection will be according to the factors identified in the previous phase. Çökgelen (2014) claims that students do not only have expectations regarding educational experience, as clean and safe HEI, with cultural, sport and social activities, or high-quality teaching with good administrative services, but also expect return in the form of good income and high social position after graduation. This means that in the HEI evaluation moment, students have in mind the prospects of having a good job in the future.

Proboyo and Soedarsono (2015), based on Chapman model (1981), present the factors that influence HEI selection as student interest, his own capacity to perform the course, family advices, and also institutional factors such as HEI reputation, institution values and previous students’ success. Agrey and Lampadan (2014) listed factors that influence HEI selection in Thailand, with evidence that learning environment is conducive and good job perspectives having greater impact in the institution selection.

University location and city image, as well as region development level have great influence in the university selection for students (Uyar, 2018). Uyar (2018) underlies that image produces a positive impression that allows tourism and education areas development, which is connected to appropriate infrastructures, urban living cost, access networks structure, and historical, political and cultural characteristics. He claims that proximity with student’s usual residence is one of the factors that influence HEI selection the most, and a positive image of the city in which HEI is located influences students choice. Bringula (2013) says among the two factors he analyzed, school proximity and accessibility, only school accessibility influences HEI selection. Mustafa et al. (2018) showed that demographic variables also have an impact in HEI selection. Aydin and Bayır (2016) were the first to analyze demographic variables effect (gender, family income, school type and having a job, or not, during study time) on the facts that influence HEI
Table 1. Influence factors in the HEI selection.

| Dimension                  | Variable                                                                 | Author                          |
|---------------------------|--------------------------------------------------------------------------|---------------------------------|
| Students characteristics  | Education level aspirations, school performance                          |                                 |
|                           | Significant people: friends, relatives and someone from school.           |                       Chapman     |
|                           | Institution established characteristics: financial support, location, programs availability. | (1981)                          |
|                           | School effort to communicate with students, written information, campus visit, admission/recruitment. |                               |
| External factors          | Institution location; academical programs, institution image and reputation, staff quality, education facilities quality (classrooms), fees, possibility to obtain scholarships and job perspectives for graduated students | Rudhumbu et al. (2017)          |
| Institutional factors     | Advertising, school tours from university employees, career fairs and future student's campus visits |                               |
| Marketing factors         |                                                                          | Source: Own elaboration.        |

selection. The factors analyzed include team quality, exchange program opportunity, scholarships opportunity, job perspectives and social facilities and physical conditions as those with greater impact in HEI selection. Other facts such as city center proximity or their house, friends and relatives’ advices, education cost, advertising, influence of friends who studied in the same institution or teacher’s advice, are not that relevant.

Rudhumbu et al. (2017) considers that institutional factors are the ones that influence students HEI selection the most (Table 1).

Çokgezen (2014) in his study in Turkey identifies fees, city population characteristics in which the HEI is located, academic performance and class language as decisive factors for HEI selection. He claims the student is inclined to compare future perspectives and the institution services with the costs of education process; considering cost (fees) as a major factor. Therefore, if HEI offers high quality services, it will be chosen by future students over others.

HEI quality may be connected to the quality of teaching and research programs, as well as its offered services (Aydin, 2015). Goodman et al. (2015) opine that academic choices made by a brother end up influencing another.

Kusumawati (2013), with his study result made in Indonesia, identified cost, institution reputation, student residence proximity, finding a job and influence of relatives as key factors that determine HEI selection by the student. Beneke and Human (2010) also show that the institution reputation is the most important factor, followed by geographical location and facilities safety.

HE in Huila’s province, Angola

Angola is a country that has been at war for many years. First, the fight for independence (which occurred in 1975), then for political stability, which happened in 2002. Since then, it was seen public and mainly private HEI creation. In Angola, HE is characterized for HEI, namely universities, academies, higher institutes and higher schools. With the purpose of HEI progressive and sustainable implementation, as well as balanced education distribution all over the country, academic areas were created. Although some works point to relatively low-quality indexes of HEIs in Angola (BTI, 2012; Carvalho, 2012), new institutions were created in 2017 (Presidential Decree 132/17), and the current Minister of the HE pointed out the need for more HEI and more courses. Nearly 22 public institution and 40 private institutions, distributed in 7 academic areas created within Decree n°5/09, April 7th. Tessema and Rao (2018) said the search for quality education has been a major challenge for many African countries. This growing importance given to the education quality, is linked to the fact that it improves the level of productivity and minimize the organization's cost (Ali et al., 2019), becoming the keyword of HE, and understood as exception, perfection, appropriate to the objective, value for money and transformation, and can be achieved through the improvement of professionalism of academics and administrative staff, and of the students’ ability to learn.

Huila province is located in south Angola, Namibe province, which is the 6th Academic Area, known as “Knowledge City”. It has five HEI, two of them public
(Mandume Ya Ndemufayo University - UMN and Higher Education Institute - Huila ISCED) and three private (Tundavala Higher Polytechnic Institute - ISPTundavala, Independent Higher Polytechnic Institute and Gregório Semedo Higher Institute).

Carvalho (2012) considers that UMN possesses “academic tradition” for having installed Modern Languages Faculty in Lubango (Huila City Capital) in 1969. The same can be stated about ISCED; it was established in 1963 with Angola General University Education creation. UMN is in Lubango city, Agostinho Neto University structures (Economy, Law and Medicine faculties). During the academic year 2016, nearly 20140 students were enrolled in Higher Education, in Huila, being that 7149 students were enrolled in private education institutions and most students (12991) enrolled in private HEI. Therefore, the following research issues were raised:

1. Which factors influence students in a HEI selection?
2. Are the HEI influencing factors in a developed country the same when it comes to a developing country?
3. Are those variable factors according to students’ sociodemographic characteristics?

### METHODOLOGY

The study is an exploratory research, which is represented by the accomplished “art state”, allowing recognition of the problem (Vilares and Coelho, 2011). In the first part, qualitative research was applied, through focus group method, allowing collection of information to compound the survey variables. The acquired information with focus group is essential to complement the quantitative research. Quantitative research was applied to the second part, appearing as result of the survey from the students (data was collected between August and September, 2018). The combined application of both methods allowed understanding and better explaining of the research problem (Creswell, 2012), and also complement, validate, explain and reinterpret the obtained data from the same students (Bento, 2012).

For focus group, we had 12 groups of several HEI from the VI Academic Area (Huila and Namibe provinces, Angola), comprising 6 students each, supervised by a moderator. They answered only one question: what would make him choose one HEI over another? The focus group, is considered a structured interview, aimed at a small group of people and based on their discussions: it allows us to gather a set of detailed information about the topic to be studied. In this case, getting more perspectives for the students themselves. The whole narrative was developed from the aforementioned topic, since its objective was to identify a set of variables for the student’s awareness in order to select a HEI. The survey structured according to the focus group obtained answers, regarding to the factors that led them to choose a specific HEIs, with the disposed questions in 7 points Likert scale (Appendix) distributed to some private and public HEI students from VI Academic Area (Huila province). The non-scale (Appendix) distributed to some private and public HEI students from VI Academic Area (Huila province).

The non-probabilistic sampling method was used for convenience, for being fast, easy and less expensive (Sousa and Baptista, 2011).

### RESULTS AND DISCUSSION

Regarding focus group, almost every group unanimously state that the first factor to consider is the course they intend to study, that is to say, the HEI courses variety. The institution reputation, as well as institution staff, has major significance in the HEI selection. However, parents’ financial condition constrains a lot in the HEI selection; many choose public institution since it does not charge fees, even if it does not have the course they desire to do. One of the groups answered that:

“The fact that it is one of the only Faculties in Angola with that course” (Group 9).

“... public HEI have little course variety when compared with private HEI. But due to parents’ financial conditions, we always have a public HEI as first choice, since they do not charge fees. Therefore, we always have a second option regarding courses to do. On the other hand, if I was in Luanda¹, I would choose Catholic University for being in Ranking², but conditions do not allow it... " (Group 2).

“HEI reputation is, without doubt, decisive in the institution selection. Reputation includes lecturer’s quality and much more... For example, many quit Economy Faculty in the Mandume Ya Ndemufayo University³ for the curriculum it has: one cannot move on to 3rd grade with failed course subjects. Many times, one stays almost an entire year without studying because the subject is carried out in one semester only. Therefore, many choose private institutions where one can go until 4th grade with failed course subjects. The purpose, most times, is obtaining certificates to work promotions...” (Group 1).

This information regarding reputation and quality, either from institutions or from lecturers, is obtained through friends, relatives or even previous teachers:

“Before coming to study here, we heard our friends talking about institution accuracy, as well as some high

¹ Angola Capital City and also the city with the largest population and HEI
² One of the only Angolan university that was in African universities ranking.
³ Mandume Ya Ndemufayo University is the only Area public university and answers for Economy Faculty, Law Faculty, Medicine Faculty, Namibe Pedagogic Higher School, Namibe Polytechnic Higher School and Huila Polytechnic Higher Institute.
school teachers who had studied in that institution. Consequently, the desire to face that challenge emerged” (Group 12).

Most respondents focused on professional and intellectual development need, especially in a job search.

“...when we apply for a job, especially in civil service, more credibility is given to students that came from public HEI” (Group 8).

Another aspect to consider is the fact that some are only studying in order to avoid stagnation, or to achieve higher education to help their parents in the future.

“Actually, choosing HEI is not always of free will. Most times is to ensure the future, to have a job, even one we do not appreciate but that ensure us a stable financial situation. And also, to have higher level and so we can help our parents after graduating...”

Sample characterization

Regarding the surveys, a total of 400 were distributed, of which only 281 were in conditions of being analyzed. The remaining 119 questionnaires were poorly filled (many erasures, others with blank questions), the reason why they were discarded. Of the 281 validated surveys, most is of male gender, and most respondents are between 21 and 30 years old. Therefore, this can be the explanation for the fact that most are not workers. Most are displaced from their usual residence during class time, being that, those who live in relatives’ house constitute the majority, and most study in public HEI.

According to the obtained answers, it was verified that the most important variable for choosing an HEI is the “intellectual and personal development with a 6.28 rate. The less important variables are “friends’ recommendation” and “classrooms size” (Table 2).

Indexes’ determination

The exploratory factor analysis was applied to allow the group, variables that are correlated, allowing the construction of measurement scales, that is, indexes. Thus, the following result was obtained:

The KMO test, demonstrated a very good adequacy from the factorial analysis, which was confirmed by Bartlett’s sphericity test, since the p-value<0.05, indicating that the variables are significantly co-related. In other words, the variable can be grouped into dimensions too easy on the weekly analysis and results interpretation (Table 3).

Study characteristics

The study characteristics or attributes are connected to issues such as courses quality and HEI programs, teaching quality, library resources quality, and performed scientific activities, among others. The study attributes were measured through eleven indicators that present a good consistence level (Cronbach alpha value higher than at least 0.5, according to Maroco and Garcia-Marques (2006)).

The study characteristic index was built through indicators arithmetic average and presents the following results:

The index average (4.73) is higher than the scale center (which is between 3 and 4), showing a higher level of importance given the variables. In which case, there were no verified statistically significant differences.

HEI attributes and human resources friendliness

HEI attributes and human resources friendliness are related with issues connected to the HEI physical structure and quality and attention from human resources to students, that is, the way they are treated by staff. It was measured through seven indicators and presents a good consistence level.

Index was built through indicators arithmetic average and presents the following results:

The index average (3.5) is equal to the center of the scale, indicating a slight level of importance based on the variables. Private HEI students are the ones who value the most issues connected to HEI attributes and Human resources friendliness; therefore, the differences are statistically significant. Other variables do not present differences as statistically significant (Table 4).

External influences

External influence is connected with the influence the student receives from friends, relatives, teachers, among others, in order to select an HEI (Proboyo and Soedarsono, 2015). This index was measured through three indicators and presents a reasonable internal

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4 Student’s t test was used ($t = -2.255$; p-value<0.05)
Table 2. Influence Variables in HEI selection rate and rank.

| Variable                                               | Average | SD     | Rank |
|--------------------------------------------------------|---------|--------|------|
| For personal and intellectual development              | 6.28    | 1,271  | 1    |
| To develop professional skills                         | 6.26    | 1,268  | 2    |
| Invest in their capacity to improve life situation     | 6.20    | 1,292  | 3    |
| Opportunity to thrive in professional career           | 6.17    | 1,460  | 4    |
| Desire to find a good job (with a good income)         | 6.02    | 1,794  | 5    |
| Programs and courses quality                          | 5.51    | 1,836  | 6    |
| Teaching quality (used education method)               | 5.47    | 1,940  | 7    |
| Lecturer quality level                                 | 5.40    | 2,056  | 8    |
| HEI reputation (HEI image)                             | 5.22    | 2,271  | 9    |
| Library and IT resources                               | 4.84    | 2,229  | 10   |
| Courses variety                                        | 4.81    | 2,245  | 11   |
| HEI reputation (board, members and lecturers)          | 4.79    | 2,242  | 12   |
| Study cost (fees and support material)                 | 4.70    | 2,606  | 13   |
| Parents financial situation                            | 4.50    | 2,590  | 14   |
| High interaction between teachers and students         | 4.22    | 2,563  | 15   |
| Classrooms conditions                                  | 4.16    | 2,501  | 16   |
| To socialize with other students                       | 4.15    | 2,466  | 17   |
| Administrative staff attendance quality                | 4.09    | 2,527  | 18   |
| Students attendance friendliness                       | 4.06    | 2,529  | 19   |
| HEI research ranking                                   | 4.01    | 2,468  | 20   |
| HEI obtained information (marketing)                   | 3.93    | 2,287  | 21   |
| Scientific activities made during the year             | 3.90    | 2,496  | 22   |
| Location (near home and/or city center)                | 3.85    | 2,712  | 23   |
| Non-curricular activities (lectures)                   | 3.81    | 2,423  | 24   |
| Family opinion                                         | 3.70    | 2,623  | 25   |
| Communication quality in first contact with HEI staff  | 3.45    | 2,464  | 26   |
| Moving out from parents' house                         | 2.73    | 2,812  | 27   |
| Subject approval ease                                  | 2.53    | 2,597  | 28   |
| Classrooms size                                        | 2.33    | 2,561  | 29   |
| Friends recommendation                                 | 2.31    | 2,276  | 30   |

“External influence” index was built through indicators arithmetic average and presents the following results:

The index average (3.5) is equal to the center of the scale, indicating a slight level of importance based on the variables. Working students are the ones most influenced by friends and relatives when choosing an HEI, being, therefore, the differences statistically significant. Regarding other variables, there was no verified statistically significant difference.

Location and cost

Location and cost are connected to the fact that HEI is or not near the student’s residence or the city center, and the study costs, transport and didactic material. It was measured through two indicators that present an acceptable internal consistence level.

“Location and cost” index were built through indicators arithmetic average and presents the following results: The index average (4.27) is higher than the scale center, showing a higher level of importance given the variables. Older students are the ones more worried with the HEI.

\(^5\) It was used test \(t\) student \((t=2.453; \text{valor-}p<0.05)\)

\(^6\) It was used test ANOVA-One way \((z=3.128; \text{valor-}p<0.05)\)
| Factor | Variable                                                      | Factorial weight | Eigenvalue | Explained variance (%) |
|--------|---------------------------------------------------------------|------------------|------------|------------------------|
|        | **Factor 1 (Study characteristics)**                          |                  |            |                        |
|        | Courses and programs quality                                  | 0.515            |            |                        |
|        | Courses variety                                               | 0.453            |            |                        |
|        | HEI reputation (HEI image)                                    | 0.555            |            |                        |
|        | High interaction level between teachers and students          | 0.641            |            |                        |
|        | HEI research ranking                                         | 0.533            |            |                        |
|        | Lecturer qualification level                                  | 0.731            | 9.298      | 31                     |
|        | Teaching quality (used education method)                      | 0.783            |            |                        |
|        | Library and IT resources (quality and quantity)               | 0.71             |            |                        |
|        | Non-curricular activities (lectures)                          | 0.501            |            |                        |
|        | HEI reputation (board, members and lectures)                  | 0.623            |            |                        |
|        | Scientific activities made during the year                    | 0.545            |            |                        |
|        | **Factor 2 (Future perspectives)**                            |                  |            |                        |
|        | Opportunity to prosper in professional career                 | 0.559            |            |                        |
|        | To develop professional skills                                | 0.765            |            |                        |
|        | Intellectual and personal development                         | 0.808            | 2.717      | 9.1                    |
|        | Desire to find a good job (with a good income)               | 0.537            |            |                        |
|        | Investing in his own capacities to improve life situation     | 0.608            |            |                        |
|        | **Factor 3 (HEI attributes and HR friendliness)**             |                  |            |                        |
|        | Classroom size                                                | 0.684            |            |                        |
|        | Information (marketing) obtained about HEI                   | 0.652            |            |                        |
|        | Communication quality in first contact with HEI staff         | 0.627            |            |                        |
|        | Classrooms conditions                                         | 0.553            | 2.643      | 8.8                    |
|        | Friendliness in student’s attendance                          | 0.604            |            |                        |
|        | Subject approval ease                                         | 0.754            |            |                        |
|        | Administrative staff attendance quality                       | 0.535            |            |                        |
|        | **Factor 4 (External influences)**                            |                  |            |                        |
|        | Family opinion                                                | 0.599            |            |                        |
|        | Family recommendations                                        | 0.699            | 1.433      | 4.8                    |
|        | Parents financial condition                                  | 0.512            |            |                        |
|        | **Factor 5 (Location and study cost)**                        |                  |            |                        |
|        | Location (close to home and city)                             | 0.63             |            |                        |
|        | Study cost (fee and support material)                         | 0.75             | 1.342      | 4.5                    |
|        | **Factor 6 (Individual interests)**                           |                  |            |                        |
|        | Moving out of parents’ home                                  | 0.714            | 1.124      | 3.7                    |
|        | Socialize with other students                                 | 0.708            |            |                        |
|        | **Total explained variance**                                  |                  |            | 61.9                   |

location and formation costs, being the difference statistically significant. Regarding other variables there were no verified statistically significant differences.

**Future perspectives**

This index is connected with the perspective of improving life situation and also professional career opportunities. It
was measured through five indicators and presents an acceptable internal consistence level. Index was built through indicators arithmetic average and presents the following results:

The index average (6.19) is superior than the center of scale, indicating that the students consider those variables as of extreme importance, since the average is close to the maximum value (7). Students that are out of their usual residence during class time, are the ones more worried about the future; thus the differences are statistically significant. Regarding other variables, there were no verified statistically significant differences.

**Individual interests**

Individual interests are connected with the more personal issues that lead students to select an HEI, such as moving out of home and socializing with other students. Individual interest was measured through two indicators that present an acceptable internal consistence level.

Index was built through indicators arithmetic average and presents the following results:

The index average (3.44) is less than the center of scale, showing that students show less importance to these variables. Students between 31 and 40 years old that are out of their usual residence and the ones living in a rented house give more relevance to their own individual interests, being the differences statistically significant (APVI).

When consistence level is very low, it means that there were few questions to express what really was intended, which implies the need to add more indicators is relevant to the test (Tavakol and Dennick, 2011). For example, location and cost study index are composed of two indicators (location, being in the city center and near home, d costs regarding fees, support material cost, among others), could be subdivided in more questions.

**CONCLUSIONS AND RECOMMENDATIONS**

These analyses have verified that intellectual and personal development desire, acquisition of professional skills, as well as the opportunity to prosper in a professional level and finding a good job, are the most pointed variables when searching for an HEI. Although some point “friend's recommendation” as a factor that propels them to choose an HEI, it is seen as the least important. Men are the ones who value most questions connected to professional, intellectual and personal skills development.

Students between 31 and 40 years old, as well as those who leave their usual residence during class time, are more concerned about moving out of their parents' house and socializing with other students, which is understandable. Older students (41 to 50 years), are more concerned with location (being near home and city center) and study cost (fees and support materials). On the other hand, working student is the one who considers HEI information, and HEI image, as most important in comparison with non-working student.

According to Sousa and Baptista (2011), the used sampling method is not population representative, but it could be successful in capturing general ideas and to identify critical aspects. For example, most students search public HEI with no fees charge, regardless of the course: the idea is having higher education in an institution with a positive influence when in search for a job. HEI may use these information's to trace strategies in order to provide more course variety and improve their facilities, lecturers and administrative staff, as well as teaching quality generally. Furthermore, they are responsible for preparing professionals that will fill up different areas, that is why it is considered a critical field of the service sector (Ali et al., 2019). Sojkin et al. (2012) point university ranking as one of the most important variables in HEI selection.

Of the 12 groups, only one focused on ranking issue.

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7 It was used test \( t\) student \((t=2.035; \text{valor}-p<0.05)\)
8 It was used test ANOVA One-way \((z=3.161; \text{valor}-p<0.05)\)
9 It was used test \( t\) de student \((t=2.818; \text{valor}-p<0.05)\)
10 It was used test ANOVA One-way \((z=3.082; \text{valor}-p<0.05)\)

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Table 4. KMO test and Bartlett sphericity test.

| Kaiser-Meyer-Olkin sample measurement adequacy | 0.887 |
|-----------------------------------------------|-------|
| Bartlett sphericity test | Approx. Chi-square | 3213.401 |
| df | 435 |
| p-value | 0.000 |
Most take no account on the number of published articles as essential to the HEI selection, although it is important. This could lead to the conclusion that scientific nature activities are not that relevant when choosing an HEI, at least in that region. Maybe that is the result of an economic and social situation, in which, best positions (with good income) were achieved by, on one hand, people with HE degrees, regardless of their formation; and the other hand, by people that would weigh the application responsibly.

In consideration of the changes occurring in the country, it is visible that students want competent HEI with good teaching quality in the country. With this, institutions should invest more in internal research to harvest from their students information that would allow them improve the entire education system. On the other hand, consistence level of some indexes are low, which means that issues regarding those indexes were not enough to express what was intended, therefore the survey must be reviewed in order to add items that will turn the consistence level acceptable.

**CONFLICT OF INTERESTS**

The authors have not declared any conflict of interests.

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## APPENDIX

### Table 1. Questionnaire variable.

| S/N | Variable                                                                 | Nothing important | 1 | 2 | 3 | 4 | 5 | 6 | Very important |
|-----|--------------------------------------------------------------------------|-------------------|---|---|---|---|---|---|----------------|
| 1   | Leaving parents' home                                                   | O                 | O | O | O | O | O | O | O              |
| 2   | To socialize with other students                                        | O                 | O | O | O | O | O | O | O              |
| 3   | To develop professional skills                                          | O                 | O | O | O | O | O | O | O              |
| 4   | For intellectual and personal development                               | O                 | O | O | O | O | O | O | O              |
| 5   | O family opinion                                                        | O                 | O | O | O | O | O | O | O              |
| 6   | Recommendations from friends                                            | O                 | O | O | O | O | O | O | O              |
| 7   | Financial status of parents                                             | O                 | O | O | O | O | O | O | O              |
| 8   | Opportunity to prosper in your professional career                       | O                 | O | O | O | O | O | O | O              |
| 9   | The desire to find a good job (with a good salary)                      | O                 | O | O | O | O | O | O | O              |
| 10  | Investing in your abilities to improve your life situation              | O                 | O | O | O | O | O | O | O              |
| 11  | The (marketing) information obtained about IES                         | O                 | O | O | O | O | O | O | O              |
| 12  | Room size                                                               | O                 | O | O | O | O | O | O | O              |
| 13  | The quality of communication in the first contact with IES staff        | O                 | O | O | O | O | O | O | O              |
| 14  | The quality of courses and programs                                     | O                 | O | O | O | O | O | O | O              |
| 15  | The variety of courses offered                                          | O                 | O | O | O | O | O | O | O              |
| 16  | IES reputation (IES image)                                              | O                 | O | O | O | O | O | O | O              |
| 17  | Classroom conditions                                                    | O                 | O | O | O | O | O | O | O              |
| 18  | High level of interaction between teachers and students                 | O                 | O | O | O | O | O | O | O              |
| 19  | IES research ranking                                                    | O                 | O | O | O | O | O | O | O              |
| 20  | The level of qualification of teachers                                  | O                 | O | O | O | O | O | O | O              |
| 21  | Teaching quality (teaching method used)                                 | O                 | O | O | O | O | O | O | O              |
| 22  | Library and IT resources (quality and quantity)                         | O                 | O | O | O | O | O | O | O              |
| 23  | Non-curricular activities (lectures)                                    | O                 | O | O | O | O | O | O | O              |
| 24  | Friendliness in student service                                         | O                 | O | O | O | O | O | O | O              |
| 25  | Location (close to city center)                                         | O                 | O | O | O | O | O | O | O              |
| 26  | IES reputation (management, members and teachers)                      | O                 | O | O | O | O | O | O | O              |
| 27  | Number of scientific activities carried out per year                    | O                 | O | O | O | O | O | O | O              |
| 28  | Ease of class approval                                                  | O                 | O | O | O | O | O | O | O              |
| 29  | Quality of care of administrative staff                                 | O                 | O | O | O | O | O | O | O              |
| 30  | Study cost (tuition fees and poles)                                     | O                 | O | O | O | O | O | O | O              |

### Board 1. Social characterization.

| Characteristic                              | N   | %   |
|---------------------------------------------|-----|-----|
| Sex                                         |     |     |
| Female                                      | 100 | 35.6|
| Male                                        | 181 | 64.4|
| Total                                       | 281 | 100 |
| Age (years)                                 |     |     |
| Less than 20                                | 75  | 26.7|
| From 21 to 30                               | 192 | 68.3|
| From 31 to 40                               | 12  | 4.3 |
Gaspar and Soares

Board 1. Contd

| From 41 to 50 | 2 | 0.7 |
|---------------|---|-----|
| Total         | 281 | 100 |

| Working-student | Yes | 87  | 31 |
|-----------------|-----|-----|----|
|                 | No  | 194 | 69 |
| Total           | 281 | 100 |

| Displaced from usual residence | Yes | 182 | 64.8 |
|--------------------------------|-----|-----|------|
|                                | No  | 99  | 35.2 |
| Total                          | 281 | 100 |

| If so, where lives?            | Relatives | 88  | 31.3 |
|--------------------------------|------------|-----|------|
|                                | Rented house | 81  | 28.8 |
|                                | Other      | 13  | 4.6  |
| Total                          | 182        | 64.8 |

| HEI type                      | Public     | 212 | 75.4 |
|--------------------------------|------------|-----|------|
|                                | Private    | 69  | 24.6 |
| Total                          | 281        | 100 |

Board 2. Consistence level index – study characteristic.

| Indicator                                             | N  | Minimum | Maximum | Average | SD   | Alpha Cronbach |
|-------------------------------------------------------|----|---------|---------|---------|------|----------------|
| Courses and programs quality                          | 281| 0       | 7       | 5.51    | 1.84 |
| Teaching quality (used education method)              | 281| 0       | 7       | 5.47    | 1.94 |
| Lecturer qualification level                          | 281| 0       | 7       | 5.40    | 2.06 |
| HEI reputation (HEI image)                           | 281| 0       | 7       | 5.22    | 2.27 |
| Library and IT resources (Quality and quantity)       | 281| 0       | 7       | 4.84    | 2.22 |
| Courses variety                                       | 281| 0       | 7       | 4.81    | 2.25 |
| HEI reputation (board, members and lecturers)        | 281| 0       | 7       | 4.79    | 2.24 |
| High interaction level between teachers and students  | 281| 0       | 7       | 4.22    | 2.56 |
| HEI research ranking                                  | 281| 0       | 7       | 4.01    | 2.47 |
| Scientific activities made during the year            | 281| 0       | 7       | 3.90    | 2.50 |
| Non-curricular activities (lectures)                  | 281| 0       | 7       | 3.81    | 2.42 |
| Study characteristics index                           | 281| 0.5     | 7.0     | 4.73    | 1.55 |

Board 3. Indicators average index – study characteristic.

| Characteristic      | Average |
|---------------------|---------|
| Female              | 4.80    |
| Male                | 4.69    |
| Total               | 4.73    |
Board 3. Contd.

| Age (years)          | Less than 20 | From 21 to 30 | From 31 to 40 | From 41 to 50 | Total |
|----------------------|--------------|---------------|---------------|---------------|-------|
|                      | 4.67         | 4.75          | 4.53          | 6.18          | 4.73  |

| Working student      | Yes          | No            | Total         |
|----------------------|--------------|---------------|---------------|
|                      | 4.89         | 4.65          | 4.73          |

| Displaced from usual residence | Yes | No | Total |
|--------------------------------|-----|----|-------|
|                                 | 4.62| 4.92| 4.73  |

| If so, where lives?               | Relatives | Rented house | Other | Total |
|-----------------------------------|-----------|--------------|-------|-------|
|                                   | 4.89      | 4.36         | 4.62  | 4.73  |

| HEI type                     | Public     | Private      | Total |
|------------------------------|------------|--------------|-------|
|                              | 4.66       | 4.94         | 4.73  |

Scale: minimum = 0; maximum = 7.

Board 4. Consistence level index HEI attributes and staff empathy.

| Indicator                                                      | N    | Minimum | Maximum | Average | SD    | Cronbach’s Alpha |
|---------------------------------------------------------------|------|---------|---------|---------|-------|------------------|
| Classrooms conditions                                         | 281  | 0       | 7       | 4.16    | 2.50  |                  |
| Administrative staff attendance quality                       | 281  | 0       | 7       | 4.09    | 2.53  |                  |
| Friendliness in student’s attendance                          | 281  | 0       | 7       | 4.06    | 2.53  |                  |
| Information (marketing) obtained about HEI                   | 281  | 0       | 7       | 3.93    | 2.29  | 0.826            |
| Subject approval ease                                         | 281  | 0       | 7       | 2.53    | 2.60  |                  |
| Classroom size                                                | 281  | 0       | 7       | 2.33    | 2.56  |                  |
| Communication quality in first contact with HEI staff         | 281  | 0       | 7       | 2.33    | 2.46  |                  |
| HEI attributes index and HR friendliness                      | 281  | 0.0     | 7.0     | 3.51    | 1.75  |                  |

Board 5. Indicators level index - HEI attributes and staff empathy.

| Characteristic | Average |
|----------------|---------|
| Sex            |         |
| Female         | 3.67    |
| Male           | 3.41    |
| Total          | 3.51    |
Board 5. Contd

| Age (years)                  | Less than 20 | From 21 to 30 | From 31 to 40 | From 41 to 50 | Total |
|------------------------------|--------------|---------------|---------------|---------------|-------|
|                              | 3.38         | 3.54          | 3.71          | 4.07          | 3.51  |

| Working student              |              |               |               |               |       |
|------------------------------|--------------|---------------|---------------|---------------|-------|
| Yes                          | 3.70         |               |               |               |       |
| No                           | 3.42         |               |               |               |       |
| Total                        | 3.51         |               |               |               |       |

| Displaced from usual residence |              |               |               |               |       |
|--------------------------------|--------------|---------------|---------------|---------------|-------|
| Yes                            | 3.45         |               |               |               |       |
| No                             | 3.61         |               |               |               |       |
| Total                          | 3.51         |               |               |               |       |

| If so, where lives?           |              |               |               |               |       |
| Relatives                     | 3.66         |               |               |               |       |
| Rented house                  | 3.20         |               |               |               |       |
| Other                         | 3.67         |               |               |               |       |
| Total                         | 3.51         |               |               |               |       |

| HEI type                     |              |               |               |               |       |
| Public                        | 3.37         |               |               |               |       |
| Private                       | 3.92         |               |               |               |       |
| Total                         | 3.51         |               |               |               |       |

Scale: minimum = 0; maximum = 7.

Board 6. Consistence level – external influence index.

| Indicator                        | N   | Minimum | Maximum | Average | SD  | Cronbach’s Alpha |
|----------------------------------|-----|---------|---------|---------|-----|------------------|
| Parents financial condition      | 281 | 0       | 7       | 4.50    | 2.60|                  |
| Family opinion                   | 281 | 0       | 7       | 3.70    | 2.62| 0.675            |
| Family recommendations           | 281 | 0       | 7       | 2.31    | 2.28|                  |
| External influences Index        | 281 | 0.0     | 7.0     | 3.51    | 1.95|                  |

Board 7. Indicators average index – external influence.

| Indicator                   | Average |
|-----------------------------|---------|
| Sex                         |         |
| Female                      | 3.44    |
| Male                        | 3.54    |
| Total                       | 3.51    |

| Age (in years)              |         |
| Less than 20                | 3.24    |
| From 21 to 30               | 3.54    |
| From 31 to 40               | 4.67    |
| From 41 to 50               | 3.33    |
Board 7. Contd

| Indicator                        | N   | Minimum | Maximum | Average | SD  | Cronbach's Alpha |
|---------------------------------|-----|---------|---------|---------|-----|------------------|
| Total                           |     |         |         | 3.51    |     |                  |
| Working student                  |     |         |         |         |     |                  |
| Yes                             |     |         |         | 3.93    |     |                  |
| No                              |     |         |         | 3.32    |     |                  |
| Total                           |     |         |         | 3.51    |     |                  |
| Displaced from usual residence   |     |         |         |         |     |                  |
| Yes                             |     |         |         | 3.59    |     |                  |
| No                              |     |         |         | 3.34    |     |                  |
| Total                           |     |         |         | 3.51    |     |                  |
| If so, where lives?             |     |         |         |         |     |                  |
| Relatives                       |     |         |         | 3.60    |     |                  |
| Rented house                    |     |         |         | 3.63    |     |                  |
| Other                           |     |         |         | 3.62    |     |                  |
| Total                           |     |         |         | 3.51    |     |                  |
| HEI type                        |     |         |         |         |     |                  |
| Public                          |     |         |         | 3.48    |     |                  |
| Private                         |     |         |         | 3.57    |     |                  |
| Total                           |     |         |         | 3.51    |     |                  |

Scale: minimum = 0; maximum = 7.

Board 8. Consistence level index location and study cost.

| Indicator                                | N   | Minimum | Maximum | Average | SD  | Cronbach's Alpha |
|------------------------------------------|-----|---------|---------|---------|-----|------------------|
| Study cost (fee and support material)    | 281 | 0       | 7       | 4.70    | 2.61| 0.502            |
| Location (close to home and city center)| 281 | 0       | 7       | 3.85    | 2.71|                  |
| Location and cost index                 | 281 | 0.0     | 7.0     | 4.27    | 2.17|                  |

Board 9. Indicators average index location and study cost.

| Indicator         | Average |
|-------------------|---------|
| Sex               |         |
| Female            | 4.58    |
| Male              | 4.11    |
| Total             | 4.27    |
| Age (in years)    |         |
| Less than 20      | 3.64    |
| From 21 to 30     | 4.50    |
| From 31 to 40     | 4.38    |
| From 41 to 50     | 5.50    |
| Total             | 4.27    |
| Working student   |         |
| Yes               | 4.62    |
| No                | 4.12    |
Board 9. Contd

| Displaced from usual residence | Total |
|-------------------------------|-------|
| Yes                           | 4.20  |
| No                            | 4.41  |
| Total                         | 4.27  |

| If so. where lives? | Total |
|---------------------|-------|
| Relatives           | 4.56  |
| Rented house        | 3.78  |
| Other               | 4.46  |
| Total               | 4.27  |

| HEI type | Total |
|----------|-------|
| Public   | 4.28  |
| Private  | 4.27  |
| Total    | 4.27  |

Scale: minimum = 0; maximum = 7.

Board 10. Consistence level index future perspectives.

| Indicator                                                        | N    | Minimum | Maximum | Average | SD     | Cronbach’s Alpha |
|-----------------------------------------------------------------|------|---------|---------|---------|--------|------------------|
| Intellectual and personal development                           | 281  | 0       | 7       | 6.28    | 1.27   |                  |
| To develop professional skills                                   | 281  | 1       | 7       | 6.26    | 1.27   |                  |
| Investing in his own capacities to improve life situation        | 281  | 0       | 7       | 6.20    | 1.29   | 0.502            |
| Opportunity to prosper in professional career                    | 281  | 0       | 7       | 6.17    | 1.46   |                  |
| Desire to find a good job (with a good income)                  | 281  | 0       | 7       | 6.02    | 1.79   |                  |
| Future perspectives index                                        | 281  | 3.0     | 7.0     | 6.19    | 0.82   |                  |

Board 11. Indicators average index future perspectives.

| Indicator           | Average |
|---------------------|---------|
| Sex                 |         |
| Female              | 6.16    |
| Male                | 6.20    |
| Total               | 6.19    |
| Age (years)         |         |
| Less than 20        | 6.21    |
| From 21 to 30       | 6.20    |
| From 31 to 40       | 6.00    |
| From 41 to 50       | 5.80    |
| Total               | 6.19    |
| Working student     |         |
| Yes                 | 6.17    |
| No                  | 6.20    |
| Total               | 6.19    |
Board 11. Contd

| Indicator                                    | Yes | No | Total |
|----------------------------------------------|-----|----|-------|
| Working student                              | 6.17| 6.20| 6.19  |
| Displaced from usual residence               | 6.26| 6.05| 6.19  |
| If so. where lives?                          |     |    |       |
| Relatives                                    |     |    | 6.29  |
| Rented house                                 |     |    | 6.24  |
| Other                                        |     |    | 6.19  |
| Total                                        |     |    | 6.19  |
| HEI type                                     |     |    |       |
| Public                                       |     |    | 6.18  |
| Private                                      |     |    | 6.22  |
| Total                                        |     |    | 6.19  |

Scale: minimum = 0; maximum = 7.

Board 12. Consistence level index individual interests.

| Indicator                      | N  | Minimum | Maximum | Average | SD  | Cronbach’s Alpha |
|--------------------------------|----|---------|---------|---------|-----|------------------|
| Socialize with other students  | 281| 0       | 7       | 4.15    | 2.45|                  |
| Moving out of parents’ home   | 281| 0       | 7       | 2.73    | 2.81| 0.503            |
| Individual interests Index    | 281| 0.0     | 7.0     | 3.44    | 2.16|                  |

Board 13. Indicators average index individual interests.

| Indicator                      | Average |
|--------------------------------|---------|
| Sex                            |         |
| Female                         | 3.23    |
| Male                           | 3.56    |
| Total                          | 3.44    |
| Age (years)                    |         |
| Less than 20                   | 2.87    |
| From 21 to 30                  | 3.59    |
| From 31 to 40                  | 4.50    |
| From 41 to 50                  | 4.00    |
| Total                          | 3.44    |
| Working student                |         |
| Yes                            | 3.71    |
| No                             | 3.32    |
| Total                          | 3.44    |
| Displaced from usual residence |         |
| Yes                            | 3.71    |
### Board 13. Contd.

| If so, where lives? | No | Total |
|---------------------|----|-------|
| Relatives           | 2.96 | 3.44  |
| Rented house        |     | 4.10  |
| Other               | 2.81 |       |
| Total               | 3.44 |       |

| HEI type            | Public | 3.38 |
|---------------------|--------|------|
| Private             | 3.64   |      |
| Total               | 3.44   |      |

Scale: minimum = 0; maximum = 7.