Distance Education: Effects of individual factors on the perceived image of high education institutions

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Abstract

Current changes in the socioeconomic variables in which both public and private universities interact require them to manage their image to attract and satisfy their students. Added to this, new technologies are affecting education, increasing the supply and relevance of distance learning in the university structure. Given that, this research aimed to understand which individual factors cause significant differences in perceived university image. This study is a descriptive field research. We collected the data with a survey and analysed the results using factor analyses, t-tests, and linear regression. We found that gender, age, income, and length of interaction between the students and the organization do not influence the overall image. However, the exact sciences students presented a different perception of the researched institutions. Given the results, we concluded that perceived image can be seen as a momentary picture. The study indicates the image as a multidimensional construct. This construct is most expressively associated with intangible aspects.

Keywords: Organizational Image; Distance Education; Public University; Marketing.

1. Introduction

Currently, higher education institutions (HEI) are taking an increasingly important role in social and economic development (Doña-Toledo, Luque-Martinez, & Del Barrio-García, 2017), being decisive

for the proper positioning of a country in the global economy (Jalaliyoon & Taherdoost, 2012). In global terms, with new technological adventures, higher education has been changing (OECD, 2016). The internet has made it possible increasing supply of distance course (Uppal, Ali & Gulliver, 2017) being a key part of a new university structure (Sneideriene, 2013).

According to Wu (2016), this fact indicates that enrolees students in distance education courses will growth in the future. In Brazil, this movement is confirmed by Anísio Teixeira National Institute of Studies and Educational Research - INEP (2018). The INEP showed that these courses increased by approximately 226% students' enrollees in undergraduate distance courses between 2007 and 2017. It represents an share increasement in the total number of enrolled from 15.4% to 33.3%, considering the classroom and distance courses (INEP, 2018).

In view of this growth, Sneideriene (2013) considers image as important element to manager these courses, helping to highlight positively the institution in relation to other organizations, attracting more students for them. In this manner, the identification of all elements that impact on HEI image is essential (Luque-Martínez, Del Barrio-Garcia, Ibañez-Zapata, & Molina, 2007). The authors indicate that these institutions need to become aware of the own current public image, to project a desired image, and to take actions to establish the market.

Considering these reflections and being the image a phenomenon that involves a perception, this fact allows different groups to identify multiple images of an object, because this perception is a variable of how individuals interact with the object (Dowling, 1986). Therefore, in this research we aimed to answer the question: which individual factors cause significant differences in perceived university image? Given this, we considered distance education's students from public universities to answer this question.

The interest in research is inserted in Doña-Toledo et al. (2017) that emphasize being image of distance courses as important for educational institutions as that of classroom courses. It is observed an insufficient amount of research about image perception in non-profit institutions, such as universities (Aghaz, Hashemi & Sharifi Atashgah, 2015).

Adding this idea, Rodríguez-Ardura and Meseguer-Artola (2016) consider to be a challenge to retain users who enrol in undergraduate distance courses. Furthermore, it is possible to apply marketing knowledge to understand the reality of education institutions (da Costa & Pelissari, 2017; Faé, Teixeira, Lima, & Azzari, 2019). Finally, it is possible to observe changes in the socioeconomic atmosphere in which HEIs operate and this require a manage their image to attract and satisfy their students (Panthong, 2016).

Therefore, we seek to better understand individual elements associated with universities image, from the viewpoint of undergraduate distance students. Also, we seek to encourage the development of corporate image strategies for distance education courses. In this study, we will indicate how high educational institutions, public or private, can benefit itself using marketing strategies, and provide subsidies for other researches.

2. Theoretical Reference

2.1 Organizational Image and Universities

Every organization has a perceived image and a desired image, the first one is how the organization

is observed by its audience, and the second, the image idealized by its managers (Roberts, 2005). Therefore, Casidy (2013) argues that universities should identify constantly the gap between the images desired and perceived by their publics. In this sense, Wilkins and Huisman (2015) made a distinction between the issues involving images of HEIs in relation to other types of organization, because the fact that they are seen as an organization focused on the public interest, there is an interference in their perception process.

Druteikiene (2011) observes image as a main element for the success of a university, requiring the establishment of strategies for this image to be created, developed and sustained. Thus, the author indicates that not only the planning, but also the implementation and control of image process creation are important for universities to create an image perceived significant, irreplaceable and hardly imitated by competitors.

Therefore, perceived image is important in the strategic planning process of the university (Doña-Toledo et al., 2017), especially in current environment where HEIs operate, with constant socioeconomic changes (Panthong, 2016). Because of these changes, universities have been operating in a challenging and dynamic environment, requiring marketing strategies to ensure not only recruitment of students but also their retention (Asaad, Melewar, Cohen & Balmer, 2013). Competition in the educational sector is in increasing evolution, and this competition occurs in search for students, professionals and new sources of funding, and in this reality only institutions that present a strong image will succeed (Azoury, Daou & El Khoury, 2013).

This observation is also appropriate for publics HEIs, their image also impacted by diversified factors, and it is not contradictory to apply the knowledge of this area of marketing in their daily life (da Costa & Pelissari, 2017). Its application is only more complex, because the public services of HEI are based on promise of service and value to be offered to different publics, such as students, government, fomenting agencies and society (Moogan, 2011). Therefore, universities should accept a dual identity for their survival: the normative, which includes traditional and ideological, and other utilitarian image, which attracts resources to the institution (Azoury et al, 2013).

Considering undergraduate distance courses students' perspective, potential clients of the universities, whether public or private, there are several institutions to choose from, and in this perspective, such institutions should offer more services to attract and satisfy their customers (Panthong, 2016). With the arrival of the information age, the technology has impacted on development of undergraduate distance courses. However, include it in the university structure increases the concerns of educational institutions (Mohamadzadeh; Farzaneh & Mousavi, 2012).

To maintain the motivation and commitment of the students in this modality, the institutions must concern of their students' satisfaction (Palmer & Holt, 2009) and considering that image affects their satisfaction (Palacio, Meneses & Pérez, 2002; Aiwi & Kitchen, 2014) add Landry, Griffeth and Hartaman (2006), interactivity involving undergraduate distance courses, makes it important to know what is more or less valued by the students in the planning of this modality.

2.2 Corporate Image

Gardner and Levy (1955) were the researchers that brought the discussion of image into the field of organizations. Alcaide-Pulido, Alves and Gutiérrez-Villar (2017) elucidate that two distinct phases were present in studies on the image of HEIs, the first of which occurred in the 1990s, and a later phase that

initiated in the 2000s and extended to the present days.

Even considering the various image concepts, it is considered an impression (Kuo & Tang, 2013) based by interactions with aspects of their identity (Costa & Pelissari, 2017), combined with beliefs and expectations of the individuals who interact with it (Kennedy, 1977; Balmer, 2001) and having multiple dimensions (Duarte, Alves & Raposo, 2010; Azoury et al, 2013).

In this research, we considered the image concept adopted by Dowling (1986). He describes the image as an effect of interaction individual with an object, considering his/her impressions, beliefs, feelings, and ideas, linking to a set of signs through which the object becomes known. Thus, being the image a phenomenon that involves perception, it can be observed differently by the different audiences that interact with the object (Dowling, 1986).

Waithaka, Kibera and Munyoki (2018) establish the need for a long-term process for the image to be designed, resulting from accumulated stimuli (Doña-Toledo et al, 2017). Tubillejas, Cuadrado and Frasquet (2011) go further, emphasizing to be permanent the process of image formation, involving a constant feedback. The researchers believe that it is not possible to have an original organizational image, because experiences between the public and the organization are endless.

In addition, the institution creates realities that influence the individual and he/she influences the institution, in an interchangeable process (Alcaide-pulido, Alves & Gutiérrez-Villar, 2017). However, another perspective is defended by Ngugyen and LeBlanc (2001) state be possible for the institution to have its image improved or destroyed quickly, according to expectations and needs met or not, in relation to their audiences. However, another perspective is defended by Ngugyen and LeBlanc (2001) state be possible for the institution to have its image improved or destroyed quickly, according to expectations and needs met or not, in relation to their audiences.

However, Balmer and Grayser (2006) have a different idea disregarding image perception as a process. They state that image is what is answered when questioned: 'how is the organization being viewed now?' This perspective is similar to the Dowling (1986) which stress image as the way an institution, a brand or an object are known, being a result of individual perception when contacting it.

H1: The perceived image of HEI is related with length in which students interact with the institution.

Luque-Martínez and Del Barrio-García (2009) state that the formation of the image involves different groups that have perceptions resulting from their experiences. In turn, Wilkins and Huisman (2013) argue that the individual decodes organization through interactions with it. Thus, it is possible to form contradictory images of the same organization, because different aspects are considered as important in this perception by each individual.

Aghaz et al (2015) concluded that different groups observe the institution in a different manner, using their own criteria in determining the image. In agreement with this view, for new image researches in HEI, Duarte et al (2010) propose the inclusion of the variable of 'area of knowledge' as an image influencer.

H2: The area of knowledge is related with the perceived image of HEI.

The image is sensitive to sociocultural variables (Kazoleas, Kim & Moffit, 2001). Thus, Duarte et al (2010) approach people elaborate an image considering different factors. It is important to note that aspects as age, gender, and income might influence the human behaviour. Previous studies suggest that

women and men can have different perceptions of a company and brand (Hasan, 2010; Pasual-Miguel, Augdo-Peregrina, & Chaparro-Peláez, 2015). Additionally, discussions about different behaviours between social classes and generations are also present in literature (Ahmad, Shaheen, Quarshi, Hunjra, & Niazi 2011; An, Kwak, Jung, Salminen, & Jansen, 2018).

Adding to these ideas, more specifically at universities with distance courses, Šneideriene (2013) emphasizes that their structures should be developed considering the socioeconomic aspects of their target audience. Finally, Palacio et al. (2002) suggest continued others researches on the organizational image of HEI, analysing the effects of both socioeconomic and psychographic characteristics on the overall image perceived of these institutions.

H3: Gender is related with the perceived image of HEI.

H4: Age is related with the perceived image of HEI.

H5: Income is related with the perceived image of HEI.

2.3 The CEDERJ Consortium

The Center for Higher Education Distance from the State of Rio de Janeiro (Centro de Educação Superior a Distância do Estado do Rio de Janeiro - CEDERJ) consortium was created by the Government of the State of Rio de Janeiro in 2000 (CEDERJ, 2017). The CEDERJ is a consortium of six public universities (Heitor & Horta, 2014) and a technical education center (CEDERJ, 2017), as a result of which Brazil stands out around the world with regard to undergraduate distance courses (Horta, Heitor & Salmi, 2016).

The municipal governments provide the administrative staff (Souza Neto, Dias, Boas, Brito & Leite, 2010). It is the responsibility of consortium universities coordinate the pedagogical project (Souza Neto et al., 2010) and the disciplines offered by them, adds Claro (2007), in order to maintain a quality similar to the classroom courses.

To support the activities of CEDERJ, the State of Rio de Janeiro Center for Science and Distance Higher Education Foundation (CECIERJ) was created (Heitor & Horta, 2014). Thus, the CECIERJ takes care of the production of teaching materials, management of the teaching and learning process, and of the platform to support distance teaching and tutoring (Horta et al, 2016).

Tutors must be graduates or post-graduates but are not considered part of the teaching staff of the consortium organizations (Claro, 2007), having no employment relationship with any of them (Brust Hackmayer & Bohadana, 2014). They support the student by attending and accompanying as a learning facilitator (Brust Hackmayer & Bohadana, 2014).

3. Methodology

The study is classified as a descriptive field research. We applied a survey to collect data. The research was conducted at CEDERJ institutions. Two aspects motivate us to choose these institutions as unit of analysis. First, the pioneering use of printed material resources, face-to-face and distance tutoring, with a virtual learning environment designed for undergraduate distance courses (Claro, 2007). Second,

the characteristic of innovation, whose project was emphasized by the Brazilian Ministry of Education and Culture (2001).

The observation unit was formed by all students with regular and frequent enrollment in their courses. For incoming students, we considered those who started the studies a semester ago. And for graduating, we considered the students with three years or more of coursework. To guarantee the representativeness of the sample for all groups of the population, the probabilistic and stratified sample was used. This process was done by course, being based on the list of students in alphabetical order. In table 1 we present the sample composition.

Table 1. Sample by course.

Course	Institution	Incoming	%	Graduating	%	Total
Administration	UFRRJ	14	37,84	12	25	**26**
Biology	UENF	8	21,62	10	20,83	**18**
Computer Sciences	UFF	2	5,26	1	2,08	**3**
Mathematics	UFF	2	5,26	2	4,17	**4**
Education	UNIRIO	10	26,32	18	37,5	**28**
Chemistry	UENF	1	2,63	5	10,42	**6**
TOTAL		**37**	**100**	**48**	**100**	**85**

Source: Author's own elaboration.

For a factorial analysis is acceptable five times the number of variables of the largest research construct, seeking to reach ten times that value, preferably (Hair, Anderson, Tatham & Black, 2005). However, the same authors highlight the need for a minimum of 50 respondents to use this statistical technique. The observations of the present study reached a number higher than that defined by Hair et al (2005). The survey got 85 observations. The overall image construct presented 3 variables, thus the minimum acceptable for the authors would be a sample composed of 50 participants.

To measurement of the overall image, a structured questionnaire with 3 variables was used. The closed questions were developed by Tubillejas, Cuadrado and Frasquet (2011). The Likert scale of the accept/disagree type was used for data collection. To avoid central tendency bias and obliging a position of the respondents as the agreement or not about what is being questioned, the six-point scale was used.

This decision considers the research of Garland (1991) which proved that the results of a study can be distorted with the presence of the central point, because the respondents tend to give neutral answers not displeasing the researcher with negative answers.

The categories related to sex, age, and family income were made considering the categorization of the Brazilian Institute of Geography and Statistics – IBGE (2011), presented in the 2010 Population Census – Population and Household Characteristics. The Table 2 shows the socioeconomic data.

Table 1. Socioeconomic data.

	Classification	Quantity	%
Gender	Female	65	76
	Male	20	24
	Total	**85**	**100**
Age	19 years or less	6	7
	Between 20 and 24 years	16	19
	Between 25 and 29 years	17	20
	Between 30 and 34 years	14	16
	Between 35 and 39 years	17	20
	40 years or more	15	18
	Total	**85**	**100**
Income	Between R$ 0.00 and R$ 724.00	17	20
	Between R$ 724.01 and R$ 1,448.00	29	35
	Between R$ 1,448.01 and R$ 2,172.00	21	25
	Between R$ 2,172.01 and R$ 3,620.00	9	10
	Between R$ 3,620.01 and R$ 7,240.00	9	10
	More than R$ 7,240.00	0	0
	Total	**85**	**100**

Source: Author's own elaboration.

The data analysis was performed using different statistical techniques, as linear regression, t-test, and exploratory factor analysis, all of them using SPSS Statistical 20 (Statistical Package for Social Sciences). For questions about overall image, we analyzed correlation between the variables and each one of them with OI.

Hair et al. (2005) indicate evaluate the internal consistency, being 0.30 as a significant minimum value for correlation between items and greater than or equal to 0.50 for correlation of the item with the total of the scale. The reliability of the data was observed using Cronbach's alpha. For this, values equal to or lower than 0.6 are found to be inadequate (Hair, Anderson, Tatham & Black, 2005). An exploratory factor analysis completed the initial part of the data analysis.

3.1. The scale of corporate image

The overall image scale presented Cronbach's alpha of 0.808 and all values above 0.52 and 0.63, for correlations between items and each variable with the total scale, respectively. The excluded of any variable from overall scale would cause a reduction of Cronbach's alpha, it was decided to maintain all variables.

Hair et al. (2005) point out as significant the value equal to or greater than 0.50 for verification the correlation of the variables with the extracted factor the data presented values higher than 0.782.

In addition, values higher than 72% were presented for the overall image variance, and accepted values for the social sciences, considering Hair et al (2005). The variance shows in its value how much the

variables explain the extracted factor (Levine, Stephan, Krehbiel & Berenson, 2008).

In the factorial analysis, the Kaiser-Meyer-Olkin (KMO) values were 0.705 for the overall image. KMO is indicative of how much of the raising factor explains the construct under analysis (Hair et al., 2005), and its values are considered sufficient when between 1 and 0.50 (Aranha & Zambaldi, 2008). Given the results, the factor analysis allowed us to create the variable overall image (OI).

4. Results

4.1 Effects of length in which students interact with the institution

To determine if the OI perceived by incoming and graduating students is significant different statistically, we transformed the variable "interaction time" into a dummy variable. Thus, the value 1 was assumed to all incoming students, and value 0 for all the graduating. The processing of the t-test measured the variance of the means for the OI, and the results obtained are compared between the two groups in question.

Even for a sample with n <30, Levine et al. (2008) observe the possibility to perform the t-test, if the population presents equal variances, a normal distribution and the sample collection was done independently and randomly. Table 3 shows the results.

Table 3. T-test based with on length in which students interact with the institution and perceptions of respondents about the HEI overall image.

Overall Image	Levine's test for equality of variance		T-test for equality of means	
	F	Sig.	t	Sig.
Equality of variance accepted	1.518	0.221	0.645	0.521
Equality of variance not accepted			0.635	0.528

Source: Author's own elaboration.

Before performing the t-test, the SPSS program performs the F-test. It is shown in the fourth column of the table the significance level obtained with the test. The result of the test reveals that there is homogeneity between the variances, since the obtained p-value of 0.221, thus higher than 0.05, which is the significance of F-test.

Faced with this result, considering a 95% confidence level the t-test provided evidence of no significant differences between the incoming and the graduating participants in the OI perceived of the organizations, considering the sample. Thus, the H1 hypothesis is rejected, which indicates that the perceived image of HEI is not related significantly with length in which students interact with the institution.

4.2. Effects of knowledge area

To test hypothesis H2, which asks if the area of knowledge is related significantly with the perceived image of HEI, the "course" variable was transformed into a dummy variable. For every test conducted, the

value 1 was assumed to the area of knowledge analysed, and all others, value 0. The processing of the t-test measured the variance of the means for the OI, and the results obtained by each area in comparison to all others, forming two groups to be analyzed in each test. Table 4 shows the results.

Table 4. T-test result based in areas of knowledge and perceptions of respondents about the HEI overall image.

Area of knowledge	Levine's test for equality of variance		Equality of variance accepted		Equality of variance not accepted	
	F	Sig.	t	Sig.	t	Sig.
Exact Sciences	2.247	0.138	-3.740	0.000	-2.883	0.016
Computer Sciences	0.189	0.665	0.950	0.345	1.080	0.384
Biological Sciences	0.015	0.903	-0.299	0.765	-0.303	0.764
Human Sciences	3.680	0.058	2.217	0.029	2.423	0.018
Social Sciences	0.582	0.448	0.109	0.914	0.116	0.908

Source: Author's own elaboration.

The results of the t-test indicated that the OI perception of the HEI by the respondents of the exact and human sciences showed differences when compared, each one with all the other students. Therefore, the identification or not of a significant correlation between each of them and the OI was made performed a regression analysis, based on the enter method. The results of the regression showed that only the correlation of the students of the exact sciences area was significant, confirming hypothesis H2. Considering the sample, the OI perceived of the HEI is 0.692 lower (p-value: 0.000) when the respondents from exact sciences area are compared to all other areas of knowledge.

4.3. Effects of socioeconomics variables

The procedures to test hypothesis H3, which seeks to determine whether gender significantly influences the OI perceived of public HEI, indicated in the t-test a significant difference to mean of the OI perceived between female respondents compared to male respondents. Table 5 shows the results.

Table 5. T-test result based in gender and perceptions of respondents about the HEI overall image.

Overall Image	Levine's test for equality of variance		T-test for equality of means	
	F	Sig.	t	Sig.
Equality of variance accepted	3.051	0.084	2.174	0.033
Equality of variance not accepted			1.823	0.080

Source: Author's own elaboration.

The fourth column of the table shown the significance level obtained with the test. The result of the test reveals that there is homogeneity between the variances, since the obtained p-value of F-test was 0.084, higher than 0.05, which is the significance of test.

Face on the results infers that, statistically, there are significant differences between male and female participants in the OI perceived of the organizations, considering the sample. The p-value was lower than the level of significance of the test (0.05).

A linear regression analysis was conducted. The results revealed that the correlation between gender and the OI is not significant, indicating that hypothesis H3 should be rejected because although the groups differently perceive the OI of the organizations under study, the presented correlation is not significant. Finally, hypotheses H4, which investigates if age is related significantly with the perceived image of HEI, and H5, which examines if income is related significantly with the perceived image of HEI, were rejected. The t-test showed no significant differences two both cases.

5. DISCUSSION

Studies that address how the audience perceives the public HEI are still few. Part of this behaviour is related to the mistaken view that marketing science is not applicable to such entities. One of the main marketing principles is the segmentation. Given that, we aimed to understand the role of individual factors in high education institutions image, given the distance education courses.

Considering the institutions, we observed among the incoming and graduating students that OI was not perceived differently. Thus, there is evidence that the exposure of an audience to the same environment, influenced at the same time, by equal variables, the perceived image of this institution does not suffer the effects of the interaction time with them. The results do not corroborate Tubillejas et al (2011), Doña-Toledo et al (2017) and Waithaka, Kibera and Munyoki (2018). They establish the need for a long-term process for the image to be designed. In turn, these results confirm Balmer and Grayser (2006) that define image as a response to how the institution is perceived by the public. They also corroborate Dowling (1986) who emphasized being the image resulting from what is perceived by the individual when contacting the institution.

Analyzing the effect of the area of knowledge, we found a significant different opinion of exact and human sciences' students from the others. The results corroborate the view of Aghaz et al (2015), Duarte et al (2010) and Luque-Martínez and Del Barrio-García (2009) who indicate that different groups observe the institution in a different manner, using their own criteria in determining the image.

Moreover, the exact sciences students presented a lower OI perceived. This result is an indication that expectations are not being met and there are gaps or inconsistencies in the interactions with this group. A group with a negative view of the OI can negatively influence other groups, causing damage to organization image.

Analyzing the effect of socioeconomics variables, we find that the differences of age, income, and gender are not related to overall image of the institution. In other words, the socioeconomic factors analysed did not influence the OI perceived considering undergraduate distance students. It contradicts the conclusions of Kazoleas et al. (2001) and Šneideriene (2013).

All these results reinforce the idea that image can be thought as a momentary picture. Therefore, this image can be changed contemplating the emission of aspects in the present of their identity, how the organization relates to the environment, market, competitors, beyond the expectations met or not recently

according your audience.

Given that, this research has achieved its objectives, showing how to use marketing to benefit public HEI, given that their image impacts their activities and relationship with government, funding and regulatory agencies and is thus connected to their future existence. Specifically, for distance education, marketing strategies is more significant because in this teaching modality, there is an interaction between students from different realities and regions.

The research corroborated other studies indicating that this image is a momentary picture created based on individual and external references of both the individual who observes and the observed organization. The image can be understood as the way in which institutions are perceived, through the reception of the stimuli generated by the observed object and its subsequent translation, considering beliefs, personal values, impressions, life experiences, and individual expectations, positives or even negatives, satisfied or not.

5.1. Limitations and suggestions

The sample of this study was composed by students of the same consortium and enrolled in the same center. This is a limitation of the study. Thus, future studies may consider undergraduate distance students from different universities and other centers to understand the influences of students from different institutions on overall image.

Another suggestion to be investigated in future studies is whether the CEDERJ influences the image perception of public institutions surveyed. Considering the features of the public service, it is possible to conduct research in private institutions offering undergraduate distance courses and to verify the results between the institutions.

In addition, other studies may use other approaches, such as qualitative research, allowing further exploratory analysis of the elements that contribute to image perception of distance education institutions. Further studies also can be conducted in institutions offering both classroom and distance courses to determine whether the image perceived differs between them.

Finally, other variables should be considered for the studied factors. Since in the present study there was an explanation of 72% of the variance of the overall image, other variables influencing the perceived image should be researched in the literature and observations of reality, and these should be included in new research models.

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