THE IMAGE OF A PUBLICLY TRADED UNIVERSITY

A IMAGEM DE UMA UNIVERSIDADE DE CAPITAL ABERTO

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Paulo Roberto da Costa Vieira
Universidade Estácio de Sá (UNESA), Rio de Janeiro/RJ, BRASIL
paulo.vieira@estacio.br

Cecilia Queirós Mattoso
Universidade Estácio de Sá (UNESA), Rio de Janeiro/RJ, BRASIL
cecilia.mattoso@estacio.br

Rosimar Bessa Couto
Universidade Estácio de Sá (UNESA), Rio de Janeiro/RJ, BRASIL
rosimar.couto@estacio.br

Abstract
The present study's objective was to assess the consistency of a model constructed to measure corporate image in the higher education sector. This exploratory study used the Partial Least Squares Structural Equation Modeling technique. The survey research was undertaken in a publicly traded university, with a unit located in Rio de Janeiro, Brazil - using a structured questionnaire with five Likert type response options. The sample consisted of four hundred and twenty four students of the Administration and Accounting Science courses. The study's hypothesis were confirmed, attesting to the model's solidity. The results showed that the following elements are crucial for the construction of a publicly traded university's corporate image: student administration office's service; trust placed in the university regarding the excellence of its student training capacity; university's solidity in capital markets; quality of teaching; and quality of facilities.

Keywords: Corporate Image. Publicly Traded University. Structural Equation Modeling.

Resumo
O objetivo do presente estudo foi avaliar a consistência de um modelo construído para medir a imagem corporativa no setor de ensino superior. Este estudo exploratório utilizou Modelagem de Equações Estruturais, com mínimos quadrados parciais. A pesquisa de opinião foi realizada em uma universidade de capital aberto, com uma unidade localizada no Rio de Janeiro, Brasil – por meio de questionário estruturado com cinco opções de resposta tipo Likert. A amostra consistiu de 424 estudantes dos cursos de Administração e Ciências Contábeis. As hipóteses do estudo foram confirmadas, atestando a solidez do modelo. Os resultados mostraram que os seguintes elementos são cruciais para a construção de imagem corporativa de uma universidade de capital aberto: serviço de atendimento ao estudante; confiança depositada na universidade com relação à formação de excelência do aluno; solidez da universidade nos mercados de capitais; qualidade do ensino; e qualidade das instalações.

Palavras-chave: Imagem Corporativa. Universidade de Capital Aberto. Modelagem de Equações Estruturais.

Introduction

Image is a filter that influences the public's interpretation of an organization's actions and, as it cannot be reproduced, is considered a rare strategic resource. Studies of corporate image, such as Herstein et al.'s (2008), highlight its strategic role.

In the higher education sector corporate image constitutes one of the resources that are important for distinguishing firms and increasing the market share of universities with a solid corporate image. Tran et al. (2015) observe that a strong and distinctive corporate image is fundamental for sustaining competitive advantage. Existing research and the bibliography consulted regarding the corporate image of higher education institutions do not include studies related to publicly traded universities[1]. Tran et al. (2015) hold that the management of corporate image requires an understanding of how it is formed and how it should be measured. Given the importance of corporate image for publicly traded private higher education institutions and also considering that no model that explains this image quantitatively was found in the literature consulted, this study's objective was to assess the consistency of a model constructed with this aim. The present study thus investigated whether the following constructs – trust placed in the university, teaching quality, facility quality, student service quality and solidity of the university in the stock market – have a positive impact on the corporate image of a publicly traded university.

The article has four other sections in addition to this introduction. The second section discusses the study's theoretical underpinnings based on a review of the literature. The latter examines topics that are apparently independent but in reality profoundly inter-related, as a conceptual prerequisite for understanding the study's hypothetical model, results and conclusions.

The third section lays out the present study's research methodology, highlighting the procedures adopted for obtaining the sample and the main characteristics of the Partial Least Squares Structural Equation Modeling (PLS-SEM) technique used to treat the data. The fourth part presents the study's results, while the last analyzes the latter and draws some conclusions.

Theoretical background

This section discusses the theoretical underpinnings of the study, beginning with an analysis of the concept of corporate image. This is followed by a presentation of arguments that attest to the essential role that can be played by corporate image in a firm's business strategy. Finally, it presents the main results of studies related to the corporate image of private universities.

Corporate Image

The forerunner of image studies was the economist Boulding (1956) and they arose due to the need to understand the nature of people's perception of their surroundings. The author emphasizes that people do not have direct knowledge of the world. They only know it through an image they construct of it based on the result of their experiences.

Martineau (1958a) is considered the forerunner, in the marketing sphere, of the concept of corporate image. He holds that a successful brand generates psychological effects which are so real that they can superimpose themselves on its functionalities. However, focusing solely on developing the brand through advertising is not enough and should be accompanied by efforts to enhance corporate image.

Martineau (1958a) also states that when individuals interiorize and consolidate an image in their minds it becomes more difficult to change, given that individuals' habit and perceptions are used as emotional filters when making decisions. Martineau (1958b) also believes that people's relations with companies are based on beliefs rather than facts or numbers. In other words people are concerned not so much with truth but with what they judge to be true. Images can be "true or false, real or imaginary" (VIEIRA 2007, p.13). Thus, it follows that image and reality are not necessarily one and the same.

Burke and Berry (1975) performed an empirical study showing that a firm's social actions can improve its image and lead to better economic results. According to Aaker (1991), firms seek to make their image tangible by associating it with symbols, such as a commercial name, which transfer meanings that evoke quality to their products and services, thus influencing consumers' perception and buying decisions and their satisfaction.

Gray and Balmer (1998) postulate that, in addition to having to assess corporate image and how it has been

positioning itself, managers need to understand how the company's employees perceive it so that they can direct and control corporate communication better. It is fundamental that managers continuously monitor these perceptions, verifying how employees, suppliers, customers, regulatory bodies, investors, shareholders and the media express their recognition and view of the way the company operates.

Gaines-Ross (2010) holds that a company's image represents the way customers – current or potential – view the organization. Gioia et al. (2014) state that corporate image imparts meaning and affects everything related to the presentation of company's actions.

After a detailed investigation of the existing literature on the meaning of corporate image, Cervai (2014) postulates that it represents the sum of a corporation's external audiences' perceptions of it, comprising emotional, functional and symbolic components. Meanwhile, Golgeli (2014) observes that corporate image is constituted by perceptions, impressions, beliefs and emotions regarding the company on the part of its stakeholders and is positive when they have a set of favorable opinions.

According to Jha et al. (2013), with the increasing convergence of various markets in terms of relative performance, price and availability of competitive offerings, the development of corporate image has grown in importance as a constituent component of the firm's strategic planning, especially because it is a resource that cannot be imitated. These authors' opinion reinforces the thesis advocated by Flávian et al. (2005), which suggests that corporate image has become a key factor in the marketing strategy of firms, not only because it can be considered a source of competitive advantage - thus attracting new customers – but also because it positively influences other stakeholders' trust.

Corporate image and business strategy

In a market economy firms have to create a basis for long-term growth or disappear. And what does it mean to grow in the long term? It means to expand demand, increase the portfolio of products and create a loyal customer base in a sustainable fashion or offer products at low prices by employing more qualified and productive professionals, thus enabling the firm to reduce costs. The corporation can also charge lower prices when it deals with competent and reputable suppliers.

On the demand side corporate image's role is to make the firm more attractive, increasing its share of the consumer market and strengthening the loyalty of traditional customers. Kaur and Soch's (2013) study was the first of its kind to undertake an empirical examination of corporate image's effect on the relation between trust and customer loyalty, defined as the willingness of customers to recommend and speak positively about the company. The authors hold that customer loyalty, which depends on the firm's credibility and quality of its products and services, is related to the ability to minimize the discrepancies between the expectations and perceptions of customers and suppliers.

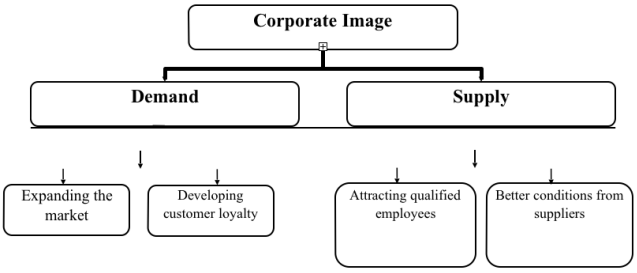
In addition, Cravens and Oliver (2006) argue that employees and corporate image are unique resources that generate positive financial results and create sustainable competitive advantage. These authors hold that, once the role of synergy that employees can play in the general positioning of corporate image has been recognized, the company's top management cannot ignore them if they intend to achieve the firm's strategic objectives. Corporate image is associated with employees in two ways. On the demand side, motivated employees project a solid corporate image, as they are the firm's "salespeople". A solid corporate image leads to an expansion in the customer base and conquers the loyalty of existing customers. Thus, a stronger corporate image is a function of qualified and motivated employees.

On the supply side this image will likely attract qualified professionals who, in addition to financial rewards, seek to obtain psychological income, which is earned due to the mere fact of being a member of an organization that is recognized and well-positioned in the market place. The strengthening of ties between employees and the firm leads to a virtuous circle whereby greater motivation leads to an increase in productivity.

Thus, from a supply viewpoint, "causality" is inverted. With a solid corporate image the firm is able to attract more qualified workers, whose higher productivity enables the firm to charge lower prices than its competitors with an equal, or even higher, level of quality. Turban and Cable (2003) investigated whether corporate image influences the quality and number of job candidates and obtained results confirming that firms with better images tend to attract higher quality candidates

In addition, on the supply side, image can interfere in a firm's relationship with suppliers by enabling it to establish partnerships that improve its bargaining position and enables it to conquer a position of prestige, thus giving it a privileged position as regards its competitors.

Fig. 1 . Dimensions of Organizations



Source: Prepared by the authors

A positive image, maintained over time, endows the firm with distinct advantages, such as: i) its products attract more customer and investors; ii) enables it to charge higher prices; and iii) generates more loyalty along with higher employee productivity (Figure 1).

Finally, the sales of companies with a strong image are more stable and the risks of a crisis are lower.

Vieira et al. (2012) hold that a solid image constitutes the most effective tool for neutralizing competitive actions and is fundamental as a mechanism for increasing market share.

The results of Alves and Raposo's study (2010) demonstrate that a university's corporate image influences student satisfaction and loyalty. The authors affirm that it is essential to measure and understand the university's corporate image, given its impact on the student satisfaction and loyalty formation process. These authors also claim that it is only when one is able to measure and understand how the university's image is constructed that it is possible to modify it in the desired direction. The corporate image can constitute an invaluable asset in the competitive arena.

Corporate image of a private university

Herstein et al. (2008) consider that corporate image management has become an essential strategy for private higher education institutions (PHEI), as it constitutes a fundamental tool for attracting new students and retaining existing ones.

According to Saiz (2005), social marketing, which addresses social and cultural actions directly, becomes an element of business strategy when its modus operandi involves marketing actions that seek to associate corporate image with voluntary rather than strictly for-profit actions. Thus, similarly to private sector companies that operate in other business segments, the PHEIs use social marketing to establish positive and far-reaching ties with their image.

Kazoleas et al.'s (2001) study examined the concept of universities' institutional image. The results indicate that images are controlled by the institution and can vary due to other external factors, but that organizational factors have a great influence on decision-making.

Donaldson and McNicholas (2004) assure that, when choosing a university – an uncertain and highly risky decision –, the students observe the evidence regarding service quality, thus confirming its importance in the constitution of the university's image. A lack of awareness of the competitive nature of the student attraction process, coupled with a negligent stance towards corporate image, can generate an adverse impact and put the university at a disadvantage.

Helgesen and Nesset's (2007) results show that student satisfaction is an extremely important issue in the management of a university, thus highlighting the role of corporate image given that it also influences customer satisfaction. This fact underlines the importance of developing and continually reviewing a specific model for managing corporate image in the higher education sector. The favorable perception of image is positively related to student loyalty (JOHNSON et al. 2001; MacMILLAN et al. 2005; SIMIC and CARAPIC, 2008).

According to Alwi and Kitchen (2014), a solid corporate image benefits the university in various ways, including a better classification, increase in the number of high-level students enrolled, attraction of new and better forms of funding, recruitment of more qualified employees and increase in student donations. In addition, these authors hold that corporate image has a positive influence on customer satisfaction and loyalty, especially in educational institutions. Alves and Raposo (2010) observe that, after graduating, the

loyal student may continue to support the academic institution, whether through financial contributions or word-of-mouth recommendation.

Methods

The study is a quantitative cross-sectional one, given that the data were collected at a single point in time without verifying behavior over time. The procedure used to gather primary data consisted of a survey which, according to Hair et al.'s (2009) definition, is a study in which a structured and self-administered questionnaire is employed to collect information from a significant portion of the population. In addition, Cidade et al. (2010) consider it the most suitable one for the study at issue given that it tests a hypothetical causal model.

Sample

The convenience sample was constituted by 424 students of the Administration and Accounting Science courses of a publicly traded private university - representing around 1.3% of the population of the students enrolled in these courses -, with a unit located in the district of Barra da Tijuca, in the west zone of the city of Rio de Janeiro.

Data Collection Tool

We employed the same questionnaire used by Couto (2015), whose study's aim was to validate a scale for the measurement of the corporate image of publicly traded universities. The questionnaire was semi-structured and self-administered, comprising 26 closed questions referring to five latent variables (trust placed in the university, teaching quality, facility quality, service quality and solid stock market position) with five Likert scale response options, ranging from 1 (totally disagree) to 5 (totally agree); a question for assigning a score, ranging from 0 to 10 and another three questions for demographic records. It was applied individually to undergraduate students enrolled in a PTPU.

Variables

The variables are divided into latent variables, which are not measured directly and constitute this study's constructs, and observed variables, which can be measured, explain the constructs and constitute the items of the questionnaire (Hair et al. 2009). According to Hair et al. (2014b) there are two ways of measuring constructs: formative and reflective. In the case of formative measurement the observed variables or indicators determine the latent variable (construct), while in reflective measurement causality flows from the construct to the observed variables (or indicators). In the latter case, it is the observed variables which, despite being determined by the latent variables and able to be measured directly, make it possible to measure latent variables, given that the latter cannot be measured directly. The present study employed reflective measurement.

The study's latent and observed variables are listed in Table 1:

Table 1 . Observed and latent variables

Observed Variable	Description of the observed variable	Latent Variable
TPU1	Verifies whether the University provides its students with a sold professional training.	TPU- Trust Placed in the University
TPU2	Measures whether top firms prefer to hire professionals trained at this University.	
TPU3	Estimates whether the University seeks to adjust to changes in the labor market.	
TPU4	Measures whether the University contributes positively to society's welfare.	
TPU5	Measures whether the University communicates efficiently with its students.	
TQ1	Measures whether course disciplines are fundamental for students' professional training.	TQ – Teaching Quality at the University
TQ2	Estimates whether professors have a good grasp of the content of the discipline they teach.	
TQ3	Measures whether the content of course disciplines provides a solid professional training.	
TQ4	Checks whether students are prevented from expressing their opinions to professors.	
TQ5	Verifies whether professors are assiduous in their academic commitments.	
TQ6	Verifies whether professors have the didactic skills needed to teach.	
TQ7	Measures whether methods used to assess learning are adequate.	
TQ8	Verifies whether professors clarify doubts that arise in the classroom.	
FQ1	Assesses whether physical classroom facilities are appropriate.	FQ – Quality of Facilities at the University
FQ2	Estimates whether the equipment used in the course are in good working condition.	
FQ3	Verifies whether classrooms are adequately cleaned.	
SQ1	Assess whether the student administration office addresses students' demands.	SQ – Student service quality
SQ2	Estimates whether the course coordination office addresses course teaching problems.	
SQ3	Assesses whether professors are available to deal with student's requests outside class times.	
SQ4	Measure whether the quality of University service corresponds to students' expectations.	
SQ5	Measure whether the University's student administration office is fully knowledgeable regarding the services it executes.	

Table 1 . Observed and latent variables (contd.)

Observed Variable	Description of the observed variable	LatentVariable
MS1	Verifies whether publicly traded educational institutions are more solid.	MS – University's market solidity
MS2	Measures whether the performance of its shares in the stock market reflects the educational institution's sound financial management.	
MS3	Measures whether being a publicly traded institution guarantees transparency of financial results.	
MS4	Measures whether the publicly traded University has a strong presence in the market.	
MS5	Verify whether the University's stock market performance affects a student's choice.	
SCORE	Proxy metric variable of the university's image.	IMAGE – University's corporate image

Source: Prepared by the authors

Hypothesis

The model tested using structural equations has two intrinsically inter-related parts: measurement, involving factor analysis, and a structural part, involving path analysis (RIBAS and VIEIRA 2011), thus entailing the need to describe the hypothesis of each of these models separately.

Hypothesis of the measurement model

In SEM the measurement part refers to factorial analysis and describes the relationship between latent and observed variables (RIBAS and VIEIRA 2011). The measurement model is generally used as an independent or null model. The hypothesis of the measurement model are the following:

The observed variables TPU_i, for i=1,...,5, are influenced by latent variable TPU.

The observed variables TQ_i, for i=1,...,8, are influenced by latent variable TQ.

The observed variables FQ_i, for i=1,...,3, are influenced by latent variable FQ.

The observed variables SQ_i, for i=1,„...,5, are influenced by latent variable SQ.

The observed variables MS_i, for i=1,...,5, are influenced by latente variable MS.

In addition, it is assumed that that all factorial loads are statistically significant at the 5% level.

Hypotheses of the structural model

The structural part of the model refers to path analysis and corresponds to the relationship between latent variables (RIBAS and VIEIRA 2011). The structural model's hypotheses is the following:

IMAGE = g(TPU, TQ, FQ, SQ, MS)

Data Treatment

Given that the present study's data will be treated using Partial Least Squares Structural Equation Modeling (PLS-SEM), it is recommendable to discuss the main characteristics of this versatile statistical tool.

Structural Equation Modeling (SEM) enables researchers to estimate structural concepts, in which latent variables, measured through observed variables (manifest variables or indicators of latent variables) are

interlinked through linear relationships. SEM is characterized by two levels of relationships: the first involves relationships between latent variables (structural model), while the other considers the association of each latent variable with its own block of observed variables (measurement model).

Hair et al. (2014a) hold that it is not surprising that SEM has become one of the most prominent statistical analysis techniques, given the growing importance of understanding latent phenomena such as consumer perceptions, attitudes and intentions.

There are various techniques for estimating SEM parameters and they can be grouped into two distinct broad approaches. The first is the covariance-based approach which seeks the best parameter estimators by reconstructing the empirical covariance matrix of the observed variables. Countless estimation techniques can be used to obtain parameter estimates but one should highlight the maximum verisimilitude estimation. However, some restrictions compromise its wide application, especially the absolute necessity for observed variables to have a multivariate normal distribution. Failing to meet this condition may make the model non-identifiable. The second approach involves the use of Partial Least Squares (PLS).

As Couto (2015) did not find normality in his study's observed variables, it was decided to use SEM with PLS in the present study, given that this approach does not require normality of variables, in addition to being indicated for exploratory causal studies.

Results

In the sample containing 424 respondents, 198 (46.7%) are male, 222 (52.4%) are female and 4 (0.9%) did not respond. As regards age groups, most of the respondents were aged 25 or under, totaling 234 (55.2%), followed by 156 (36.8%) aged 26-35, and only 30 (7.1%) aged 36 or over. Most of the respondents were enrolled until the fifth semester, 317 (74.8%), while 79 respondents were sixth to eighth semester students (18.6%). 28 (6.6%) did not respond.

SEM is composed of a measuring model, also identified as an external model in the context of the PLS-SEM, and a structural model, also called an internal model in the PLS-SEM. The PLS-SEM does not have a single criterion to assess quality of fit (HAIR et al. 2014a). According to Ringle et al. (2014), this assessment should be undertaken in two parts, by first assessing the external model (measurement) and then the internal model (structural). This two-stage process contributes to ensuring that scale items are statistically consistent and that the constructs effectively measure what they are supposed to, before drawing inferences about the structural model.

The external model is assessed by assessing the reliability and validity of construct measurements. Considering that in the present study all constructs are measured through reflective indicators, or in other words, the indicators are explained by (are reflections of) the latent variable (construct), the assessment includes the average variance extracted (AVE) to assess convergent validity, which is the extent to which a measure is positively correlated with alternative measures of the same construct; composite reliability (CR) to assess internal consistency which refers to the individual reliability of the indicator; and cross loadings, or the Fornell-Larcker criterion, to assess discriminant validity, which is the extent to which a construct is truly distinct from other constructs by empirical standards (HAIR et al. 2014a).

The first criterion to be assessed is convergent validity, through average variance extracted (AVE), which is defined as the average squared loadings of the indicators associated with the construct, i.e. the sum of the squared loadings divided by the number of indicators. In this item a value of 0.50 or more indicates that, on average, the construct explains more than the average of the variance of its indicators (HAIR et al. 2014a), thus this is the minimum reference value considered appropriate for AVE (Table 2).

Table 2 . AVE and CR

Latent Variable	Average Variance Extracted	Composite Reliability
TPU	0.270	0.634
TQ	0.372	0.825
FQ	0.625	0.832
SQ	0.526	0.843
MS	0.530	0.845
IMAGE	1.000	1.000

Source: Prepared by the authors

If the AVE of the TPU and TQ constructs have values of less than 0.50 it is necessary, according to Ringle et al. (2014), to eliminate the observed variables of the constructs with AVE of less than 0.50. To improve AVE it is necessary to eliminate variables with smaller factorial loadings (correlations) and it should be observed that the remaining variables should have theoretical underpinnings that justify their inclusion. The conceptual and statistical analysis recommended the exclusion of three of the construct's observed variables TPU (TPU2, TPU4 and TPU5); and five variables of construct TQ, i.e. TQ2, 4, TQ5, TQ7 and TQ8.

Table 3 shows the magnitudes of AVE after the exclusion of the less important variables. Thus, the AVE of all constructs surpassed the minimum limit of 0.50.

Table 3 . AVE and CR

Latent Variable	Average Variance Extracted	Composite Reliability
TPU	0.555	0.714
TQ	0.554	0.787
FQ	0.625	0.832
SQ	0.526	0.843
MS	0.530	0.845
IMAGE	1.000	1.000

Source: Prepared by the authors

According to Hair et al. (2014a), the second criterion to be assessed is internal consistency reliability. Although internal consistency is usually measured using Cronbach's alpha, this index is sensitive to the number of indicators of the scale. Thus, in the case of PLS-SEM, Composite Reliability is considered to be more suitable for measuring reliability (HENSELER et al. 2009). Considering the same levels adopted for Cronbach's alpha, composite reliability values of 0.60 - 0.70 are deemed acceptable in exploratory research, with values of between 0.70 and 0.90 considered to be adequate in more advanced stages of research (HAIR et al. 2014a) (Table 2).

Discriminant validity is the third criterion analyzed and its aim is to assess whether a construct is unique and captures the phenomenon which is not represented by other constructs in the model. Hair et al. (2014a) propose two measures of discriminant validity: one method involves examining the cross loadings of the indicators, given that an indicator's external loading is associated with the construct if it is higher than all the indicator's loadings in the other constructs (i.e. the cross loadings), as the presence of cross loadings that exceed the indicator's external loading represents a problem of discriminant validity. This criterion is generally considered to be more flexible for establishing discriminant validity (Table 4).

Table 4 . Cross Loadings

	TPU	TQ	FQ	SQ	MS	IMAGE
TPU1	**0.745**	0.393	0.147	0.256	0.210	0.388
TPU3	**0.745**	0.080	0.064	0.086	0.026	0.088
TQ1	0.259	**0.796**	0.259	0.321	0.211	0.361
TQ3	0.257	**0.646**	0.196	0.278	0.230	0.308
TQ6	0.187	**0.782**	0.229	0.232	0.086	0.258
FQ1	0.128	0.216	**0.823**	0.308	0.220	0.255
FQ2	0.167	0.264	**0.840**	0.306	0.139	0.285
FQ3	0.028	0.244	**0.700**	0.200	0.174	0.161
SQ1	0.163	0.219	0.256	**0.809**	0.308	0.375
SQ2	0.188	0.289	0.236	**0.647**	0.270	0.304
SQ3	0.089	0.268	0.245	**0.500**	0.217	0.263
SQ4	0.211	0.318	0.270	**0.814**	0.298	0.447
SQ5	0.168	0.282	0.264	**0.803**	0.415	0.416
MS1	0.148	0.210	0.185	0.398	**0.782**	0.337
MS2	0.129	0.229	0.198	0.384	**0.818**	0.324
MS3	0.086	0.135	0.236	0.268	**0.763**	0.228
MS4	0.093	0.162	0.129	0.254	**0.758**	0.287
MS5	0.134	0.140	0.021	0.204	**0.461**	0.236
Score	0.319	0.418	0.300	0.505	0.388	**1.000**

Source: Prepared by the authors

A second, more conservative, approach is to use the Fornell-Larcker criterion which contrasts the square root of the average variances extracted (AVE) with the correlations between latent variables. Specifically, the square root of each average variance extracted (AVE) should be greater than its highest correlation with any other construct, given that, in statistical terms, a latent variable shares more variance with its indicators than with any other latent variable (HENSELER et al. 2009; HAIR et al. 2014a) (Table 5).

Table 5 . Correlations between constructs and the square root of AVE*

	TPU	TQ	FQ	SQ	MS	IMAGE
TPU	**0.745**					
TQ	0.318	**0.744**				
FQ	0.141	0.305	**0.790**			
SQ	0.230	0.374	0.347	**0.725**		
MS	0.158	0.243	0.224	0.421	**0.728**	
IMAGE	0.319	0.418	0.300	0.505	0.388	**1.000**

*The square root of average variance extracted (AVE) is shown in the main diagonal.

Source: Research data

As can be seen in Table 5 the Fornell-Larcker criterion is fulfilled and all values in the table have a p-value equal to or less than 0.001, meaning that all correlations and average variances extracted exhibit statistical significance.

The next step, according to Hair et al. (2014a), is to assess the results of the internal model, which involves examining the model's predictive capacity and the relationship between constructs, thus enabling researcher to determine how well the empirical data supports the theory. However, before assessing the structural model's quality of fit Wong (2013) emphasizes that a detailed PLS-SEM analysis includes an assessment of multicollinearity. Thus, this issue should be examined in the internal model, given that the path coefficients can be biased if estimation involves significant levels of collinearity between predictor constructs. To assess the level of collinearity it is necessary to calculate tolerance, which is the amount of variance in an exogenous construct that is not explained by other constructs. A measure of collinearity is the variance inflation factor (VIF) - defined as the inverse of tolerance - and in the context of PLS-SEM, a tolerance value of 0.20 or less and a VIF value of 5 or more, indicate a potential collinearity problem (HAIR et al. 2014a).

Table 6 . Variance Inflation Factor (VIF)

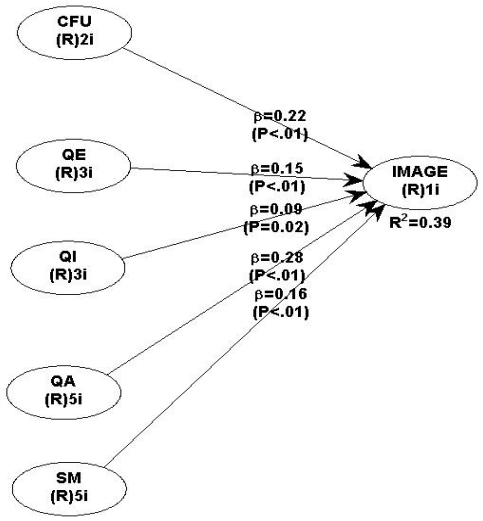
Construct	VIF
TPU	1.302
TQ	1.410
FQ	1.187
SQ	1.454
MS	1.255

Source: Prepared by the authors

Instead of using quality of fit measures, the structural model in SEM using PLS is assessed using a heuristic criterion which is determined by the model's predictive capacity which does not allow, by definition, the testing of the model's overall fit. Instead, it is supposed that the model was correctly specified and it is assessed in terms of how well it predicts the endogenous variable (or construct) (HAIR et al. 2014a).

According to Henseler et al. (2009) and Ringle et al. (2014) the first analysis of this second stage involves the assessment of the coefficients of determination (R^2). Interpreted in the same way as in a multiple regression, the R^2 indicates the amount of variance explained by the model (Lee and Chung 2009). According to Hair et al. (2014a) the values of R^2 range from 0 to 1, with lower levels indicating greater predictive precision. However, it is difficult to have a rule of thumb for acceptable R^2 values as they depend on the model's complexity and the area of research. In the present study the R^2 of the model – considering IMAGE as its endogenous construct – was 0.387, while R^2 adjusted was 0.379, with both coefficients of determination being statistically significant ($p<0.001$), as can be seen in the path diagram of Graph 1.

Graph 1. Path diagram of the corporate image model



Source: Prepared by the authors

After assessing the coefficients of determination, one should verify the importance of path coefficients, which represent the hypothetical relationships between constructs (HENSELER et al. 2009; RINGLE et al. 2014). It is not only the magnitude of the coefficients that is important but also the fact that they exhibit statistical significance ($p<0.05$). According to Hair et al. (2014a), the standardized path coefficients have values of between -1 and 1, with estimated values close to 1 representing a strong positive relationship (vice-versa for negative values); the closer to zero, the weaker the relationship (Table 7).

Table 7 . Standardized path coefficients

Path	B Coefficient	P-value*
TPU -> IMAGE	0.217	<0.001
TQ -> IMAGE	0.145	<0.001
FQ -> IMAGE	0.087	0.021
SQ -> IMAGE	0.283	<0.001
MS-> IMAGE	0.161	<0.001

* The symbol < means less than.

Source: Research data

Thus, one can see that the most important constructs for determining the corporate image of the study's publicly traded university are SQ, TPU, MS, TQ and FQ, respectively. All constructs exhibit statistical significance at the 5% level.

Proceeding with the assessment of the internal model, two other quality of fit indicators should be considered: Stone-Geisser's Q^2 to measure the model's predictive importance and the effect size (f^2) (RINGLE et al. 2014). Stone-Geisser's Q^2 assesses how closely the model corresponds to expectations ((RINGLE et al. 2014). Q^2 values larger than zero for a reflexive and endogenous variable indicate predictive importance for the path model of this particular construct, with the values 0.02, 0.15 and 0.35 indicative that an endogenous construct has a small, medium or high predictive importance, respectively, for an endogenous construct (Hair et al. 2014a). In the present study the model's exogenous variable (IMAGE) has a Q^2 value of 0.389.

The effect size (f^2) is obtained by the inclusion and exclusion of constructs from the model, assessing how much each construct contributes to the model's fit ((RINGLE et al. 2014). Hair et al. (2014a) stipulate that the guideline for assessing f^2 is that 0.02, 0.15 and 0.35 represent small, medium and large effects of the exogenous latent variable respectively (Table 8).

Table 8 . Effect size

Path	f^2
TPU -> IMAGE	0.093
TQ -> IMAGE	0.061
FQ -> IMAGE	0.027
SQ -> IMAGE	0.143
MS -> IMAGE	0.063

Source: Prepared by the authors

As all path coefficients are statistically significant, the constructs that have the greatest impact on the corporate image are Student service quality (SQ) and Trust placed in the University (TPU), respectively.

These results corroborate Alves and Raposo's (2010) concepts for corporate image, reflecting the intangible organizational factor mentioned by these authors. It is important to mention Confidence in the university, among the variables of the intangible factor.

Considered relevant by Alves and Raposo (2010) and the most critical by Kazoleas et al. (2001), the tangible organizational factor (FQ) was considered the least important in the present study.

These results reflect the crisis experienced by Brazilian higher education, in the recent past, with the bankruptcy of private universities, reinforcing Trust in the institution as a fundamental element in corporate image.

Final Considerations

The construction and preservation of corporate image should always be pursued by all firms, independently of their line of business or economic sector, given that it constitutes the overall impression the public has of them. In addition, as it is a volatile and multidimensional perception, corporate image requires constant assessment and monitoring, given that the true image very often does not correspond to the one imagined by top management.

Recognizing that a positive image is one of a university's main assets, the present study tested a model which considers the scale developed to assess corporate image, and whose results enable important insights to be gleaned that may conflict with top management's common sense. The most important constructs were, respectively, student service quality, trust placed in the University, solidity of the University in the stock market, teaching quality at the University and quality of the University's facilities.

Firstly, according to the audience surveyed the construct that most influences corporate image is service quality, instead of teaching quality as common sense might suggest.

Thus, it is crucial that service meet students' expectations, that their queries are answered and that employees of the student administration office have a complete grasp of the work involved to be able to provide quality service.

Thus, it is extremely important to keep employees trained and qualified in order to deliver service excellence. In addition, this initiative helps motivate employees, further strengthening the institution's image as they are the "salespeople" par excellence of the corporation and its different audiences.

It should be observed that the respondents were students of two undergraduate courses. This means that if the data had been gathered from master's and doctoral students, it is possible that the teaching quality construct would have been considered one of the most important. There could also be a change in the relative importance of constructs if the sample were to be expanded to include students of other courses such as Medicine and Dentistry.

The second most important construct was trust placed in the University: in this case trust in the University's ability to provide a solid professional training for students and adjust to changes in the labor market were the most prominent characteristics of this construct.

The third most important construct among respondents was the University's stock market solidity.

Indeed, the fact that a publicly traded university's management is monitored by financial market participants increases transparency and therefore the ability to gauge the institution's solidity, enabling investors to protect themselves against the risk of a possible cessation of its commercial activities. One should remember that the recent closing of some private higher education institutions caused considerable inconvenience to students who were studying at those institutions.

Teaching quality was considered the fourth most important construct by respondents.

The concern with adapting course disciplines to the needs of solid professional training and teachers' didactic skills constituted the most important elements of this construct. This result reveals that students, above all, are seeking a teaching structure that will prepare them for the job market and thus they require a curriculum which includes professionally-oriented disciplines.

The fifth most important construct was the quality of the University's facilities.

The most important aspect of facility quality is related to the efficient functioning of material resources – "the equipment used in my course are in good working condition" – which is typically what the young audience that constitutes the sample would focus on. This being the case, it is a well-known fact that a high value is attached to the technological resources provided by the university and that they are crucial in the construction of the institution's image.

The quality and design of physical classroom facilities to ensure the better assimilation of discipline program

content was also considered an important facet of the facility quality construct.

Once again, it should also be highlighted that although the model is suitable for assessing the corporate image of a publicly traded private university, additional studies should be undertaken to calibrate it by applying it in various faculties of the same university and different Brazilian publicly traded universities.

As a convenience study was used in this study, its results cannot be generalized to the population. Moreover, partial least squares structural equation modeling does not permit the validation of the theory underlying the model, thus constituting another limitation of the study. To overcome these limitations, future studies should be undertaken of other courses, offered by other publicly traded universities, that employ random samples whose data can be treated using structural equation modeling, based on a covariance matrix.

Despite the study's limitations, the results discussed above can serve as a guide for managers in the implementation of courses of action aimed at strengthening the corporate image of publicly traded universities among their target audiences.

The contribution of the present work was to find out that the variable Student confidence in the university was relevant. In fact, the supposed idea that facilities would be the critical factor in the building of a corporate image was not corroborated in the present work.

The credibility of the university was deemed the most important asset in building up and strengthening the corporate image, which indicates a promising research path.

Within this context, it is up to senior management to develop a full transparency program of their actions, communicating all decisions that may interfere with the academic life of their students. At the same time, top management should be hold accountable for all previously announced actions, aiming to strengthen Trust in the university and, consequently, the corporate image.

Notes

_In Brazil private universities are privately held or publicly traded. In the latter case the ordinary shares of a publicly traded university are traded in a stock market, more specifically the BM&FBOVESPA.

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