



Determinants of Brand Equity in Ecuadorian Private Universities

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ABSTRACT

This paper provides empirical evidence about the determinants of brand equity in higher education, using a sample of 211 students from Ecuadorian universities. Using findings of the literature we conduct a survey to construct some variables related to brand equity, named: brand awareness, brand image, perceived brand quality and brand loyalty. We test for the influence of these variables on brand equity through a structural equation model. The results show that the measured variables are significant. Moreover, the model explains around 70% of the brand equity.

Keywords: Brand Equity, Structural Equation Model, Brand Loyalty, Brand Image

JEL Classifications: M30, M51, I21

1. INTRODUCTION

Considering the increasing competition in university offerings, which allow students to have a high number of options to carry out their studies, it becomes necessary to determine which aspects generate value in the universities' brands. The competition among universities' offers have become more aggressive and the line of differentiation between one institution and another becomes more demanding, making the positioning of the brand a relevant factor when making the decision to purchase services. The aim of this research is to determine the incidence of brand awareness, brand image, perceived quality, and brand loyalty on brand equity of universities. This study has been carried out in Ecuador, a small emerging market economy.

We do a systematic review of the literature of the models that propose the determining variables in the brand equity to justify our modelling assumptions. We use the multivariate statistical technique of structural equations. This methodology allows us to evaluate not only the dependency relationships, but also to incorporate the effects of measurement error on the structural coefficients.

Through the results, it is expected to better understand the relevant aspects that affect the university brand. That is, being able to

determine the variables that should be given the most attention when trying to position the brand in the mind of the university user.

The rest of this paper is structured as follows: Section 2 reviews the relevant literature, section 3 describes the statistical methodology, the recollection of the data and the relevant hypotheses, section 5 presents the results and section 6 present the conclusions.

2. LITERATURE REVIEW

Global markets and marketing evidence a persistent dynamic change over time, especially in higher education. Therefore, staying in the market urges universities to be more competitive. The little theorization that exists in marketing on how to systematically manage the commercialization of its activities towards new markets has become an important research branch in the education field (Asaad et al., 2013). However, Asaad et al. (2013) point out that although the literature on marketing has been widely studied, it is considered that in the higher education sector it may be scarce. Ho and Hung, (2008) mentioned that there are few studies based on the consumer perspective in the education sector. Hernández-Zamora (2010) also detected a lack of image studies within universities. From an academic point of view, the

literature on brand management in universities is very scarce when compared to that of other sectors (Alessandri et al., 2006; Hemsley-Brown and Goonawardana, 2006).

A well-developed brand in a higher education institution will be the basis for achieving sustainable recognition, loyalty, positioning and processes that last over time, and acquiring a competitive advantage over other university services offered in the market (Chapleo, 2011; Pashkus et al., 2015). Given this, it is relevant to understand the incidence of certain factors such as brand awareness, brand image, perceived quality, and brand loyalty, and their importance in the construction of university brand equity.

Although a variety of definitions of brand equity are presented in the literature, most of them are consistent with that proposed by Farquhar (1989) where brand equity is conceptualized as the value that a brand adds to what is offered. That is to say, brand equity is the inherent value, whether positive or negative, that the brand adds to a product or service that is delivered by a private or public agent.

There are various models that aim to explain brand equity, however, among the most applied and prominent are the contributions of (Aaker, 1991; 1996; Keller, 1993; 2003; Yoo and Donthu, 2001). Keller (1993) proposed a conceptual model where brand equity results from the consumer's brand awareness and favorable experiences with it. In subsequent studies, this analysis is complemented with the brand value pyramid proposed by Keller (2003), who places the following levels: as the initial element is the identification of the brand, followed by the meaning of the brand, as the third element are the responses and finally the relationships that are evident with the loyalty and attachment that the user has with respect to the brand.

Aaker (1991; 1996) identifies that brand equity is made up of five dimensions: four dimensions from the consumer's point of view and one from the market's point of view. The dimensions from the customer's perspective are brand awareness, perceived quality, brand associations and loyalty, while the dimension from the market point of view is performance. Loyalty is the most relevant dimension in brand equity since it leads to its survival despite possible triggers such as competition, changes in trends, among other factors. Perceived quality is another necessary factor since it allows the brand to be characterized by certain attributes and valued by others of its kind.

Saavedra (2004) and Casanoves (2016) concluded that consumers play the key role in the brand equity construction. Therefore, their opinion is necessary to build brand equity. Both authors identify that the proposals of Aaker (1991) and Keller (1993) are the most consistent when considering the parameters that are more relevant within consumer opinion. Both authors agree that there are four fundamental elements for brand equity: Awareness, brand image, perceived quality and brand loyalty.

Aaker (1996) and González and García (2012) argue that brand awareness is associated with the strength of the brand's presence in the minds of a certain number of users or potential clients.

According to Aaker (1991; 1992), the image of the brand depends on the attributes, benefits and quality it provides to the customer, which will create the reputation that is created about it. The brand image is synonymous with presence, character and power in the social, cultural and economic scenario, having an effect in the psychology of consumer because of the satisfactions, emotions, sense of belonging, lifestyle and status that it represents for individuals (Costa, 2004).

In addition to the image, the equity of the brand is closely linked to the perceived quality. Although consumption choice also depends on a fundamental variable such as price, the effect of the perceived quality can have a larger effect. Seetharaman et al. (2001) supported that consumers have a greater willingness to pay for those goods and services perceived to have high quality. This perception of quality is subject to objective factors such as performance, and subjective factors such as the emotions and feelings that it awakens individually and/or collectively because of the image or positioning it has.

On the other hand, brand loyalty has some key elements: The emotional affinity obtained from the consumer, and the satisfaction with the product or service, which leads to repeat purchases. This is how brand equity depends on the number of people who consume frequently, so the number of customers is a determinant and at the same time an indicator to measure loyalty (Biel, 1993).

In the context of university services Boix et al. (2017), also propose brand awareness, brand image, perceived quality, and brand loyalty as determinants of brand equity. For Koku (1997), the relationship between brand awareness and brand equity is explained by the motivation of higher education institutions to create awareness maximization strategies. Brand image has become a strategic tool for issues of differentiation and competitive advantage (Jevons, 2006; Levario and Campos, 2018). Bosch et al. (2006) consider that factors such as reputation, relevance, personality, performance, relationship and identity exert some influence on the brand image of universities. If the effects of these variables are strong and positive, the brand image that is developed will be significantly differentiated. For Costa (2004), the brand image is the perception that is achieved mentally and that is obtained through the senses, allowing the passage from the abstract to the concrete. Therefore, the image needs to be associated with positive and desired elements. This set of associations in the user's memory and linked to the brand are produced thanks to the marketing and communication stimuli that the current consumer is induced to use based on the identity of their brands (Curubeto, 2007).

Regarding the perceived quality, one of the factors that impact the quality of the educational service and determines its level of excellence is the performance of the teacher. To evaluate the fulfillment of the trainer's functions and the degree of satisfaction of the students towards him, there are performance indicators that allow determining and verifying the quality of the teachers' work and, with this, guaranteeing excellent performance that can be translated into greater willingness to pay (Ramsden, 1992). But the teacher's performance is not the only indicator that affects

the quality of the educational service. Other elements such as ensuring conditions to provide good studies, willingness of the staff to resolve any student queries, library service, availability of computers, leisure facilities, class size, level and degree of difficulty of the contents taught, and workload for the student outside the classroom, determine the quality perceived by the student (Athiyaman, 1997; Álvarez, 2022). Likewise, digital technology, tutoring, teacher support and course content add value during the learning process. According to Peltier et al. (2007), perceived quality improves by having these enablers in the training system.

Factors such as the image and reputation of the university affect the loyalty that an individual has towards it. According to (Nguyen and LeBlanc, 2001; Garbarino and Johnson, 1999), if students perceive a good image of their university and its reputation is high, the student body will feel greater loyalty. Something relevant to highlight is that the importance of loyalty to the university brand does not lie only through the continuity of consumption of the service available to the student, but also when complementary or related services are acquired to those they have, such as, for example, new professional or continuing education courses (Paswan and Ganesh, 2009). Likewise, a student's loyalty to the university brand should not focus absolutely on the present, but also on the future. Rojas et al. (2009) consider that a successful indicator of loyalty is perceived when, once graduated, the student can be attracted years later through other educational services offered by the institution.

3. METHODOLOGY, DATA AND HYPOTHESIS

We adopt a quantitative methodology with a descriptive and correlational approach. We use the multivariate statistical technique of structural equation model (SEM), where brand equity will be treated as a dependent variable and the factors of brand awareness, brand image, perceived quality and brand loyalty as explanatory variables. This approach has been previously used in the study of different types of relationships of indicator within higher education systems, for example (Bajaña and Chacón, 2020; and Zeebaree, 2024).

According to Zeebaree (2024), SEM is a comprehensive term covering a group of multivariate statistical methods and is regarded as a second-generation data analysis approach. Hair et al. (2005) and Kline (2011) highlight two functions of SEM within the data analysis. First, SEM integrates path and confirmatory factor analysis, which exclusively deals with measured variables. Second, SEM facilitates the examination of causal relationships between two or more variables. Additionally, the SEM method provides the advantage of conceptualizing a broad spectrum of relationships between variables, accommodating diverse types of associations and dependencies in the analysis (Zeebaree, 2024).

The population is made up of all Ecuadorian private universities' undergraduate students. This study included a sample design stratified under several criteria. First, we focus

on universities located in provinces that cover more than 50% of the university student population, Guayas and Pichincha. Then, we choose only universities that cover more than 10% of the student population within each province. Finally, using a target sample of 200 individuals, we use the distribution of population over the population resulting from the last criteria to sample from each university. We consider only active students in just one career.

Following Luque (1999), we conducted a survey that includes questions related to the factors of brand equity, awareness, image, quality and brand loyalty. This survey is powered by questions reviewed in previous research but adapted to the field of higher education. As mentioned in the previous sections, there are few studies of university brand equity, much less studies that evaluate this topic in the Ecuadorian context. To raise the appreciation of the respondents regarding the elements of brand equity, 54 items (Brand awareness, 6 items; brand image, 11 items; perceived brand quality, 19 items; brand loyalty, 14 items; and brand equity, 4 items) are presented that will be evaluated on Likert scales of up to five points, where 1= Totally disagree and 5= Totally agree. Following Casanoves (2016), the Likert scale is the most ideal way to measure responses since it allows for homogenizing and facilitating responses. Under this setting, elements of awareness, image, perceived quality and brand loyalty appear as dependent variables of the items to be evaluated in the model. Data were recollected in 2023 through face-to-face and online surveys.

The following hypotheses are formulated:

- H_1 : Brand awareness is a factor that influences the brand equity of Ecuadorian private universities
- H_2 : Brand image is a factor that influences the brand equity of Ecuadorian private universities
- H_3 : Perceived quality is a factor that influences the brand equity of Ecuadorian private universities
- H_4 : Brand loyalty is a factor that influences the brand equity of Ecuadorian private universities

The model is estimated using SPSS 21 and Amos.

4. RESULTS

4.1. Descriptive Analysis

Most of the surveyed participants are female, between 18 and 24 years old. 42% live in Guayas and 58% live in Pichincha. According to the descriptive analysis, 96% of the participants are young people while 4% are adults. Regarding their occupations, 17% divide their days between studies and work, while 83% focus most of their time on academic activities as they do not have a work commitment. Most of the respondents are pursuing their undergraduate studies. Only 5% are pursuing postgraduate studies. Thus, more than 60% of the sample is only in their 2nd year of study, so their seniority in the higher education center is low. Only 1% of the sample has been at the institution where they study their professional education program for more than 5 years. In relation to study programs, more than 75% study careers with a social focus, approximately 15% study engineering programs and around 10% are enrolled in programs related to health and well-being.

4.2. Preparation of the Data

4.2.1. Data lost and outliers

Although the target sample was set at 200 respondents, the survey was applied to 227 university students. Data lost and removal of outliers resulted in a sample of 211 valid observations. Outliers were detected using the Mahalanobis distance test (Hair et al., 1999; Tabachnik and Fidell, 2013). It was identified that 16 observations presented multivariate outliers. Having adjusted the sample to 211 observations, Cook’s (1977) statistical distance test was applied, and it was reaffirmed that there are no outliers in the remaining sample since the distance was <1.

4.2.2. Normality

Following Brown (2006), it is concluded that the univariate data present normality since the skewness values were found in the interval (-3, 3) and the kurtosis values in the interval (10, -10). It was determined whether the multivariate data set follows a normal distribution taking into consideration the multivariate kurtosis. Values >5 reported in multivariate kurtosis can be treated as significant evidence of multivariate normality (Bentler, 2005). The statistical evidence demonstrates the presence of normality under the univariate and multivariate analysis.

4.2.3. Homoskedasticity

We use the Engle (1982) test to evaluate whether the errors of each construct follow a homoscedastic normal distribution. According to the results the errors presented statistical evidence of homoscedastic behavior given that the significance was >0.05 for each variable.

4.2.4. Structural validity of measuring instruments

The structural validity of the instrument was verified, by means of a confirmatory analysis, through: (a) Validity of the content; (b) validity of constructs, and (c) internal consistency of each construct using Cronbach’s Alpha. The content validity was carried

out through a rigorous literature review, followed by the validity of an expert panel, and finally a pilot test.

To evaluate validity, convergence and discrimination methods were implemented. The convergence analysis is satisfied since the factor items have values greater than or close to 0.60 and the average loadings of the factors are quite close to or >0.70 (Hair et al., 2005). Likewise, the divergence analysis is satisfied since the factors have an average variance extracted (AVE) ≥0.50 in their constructs (Table 1).

Following Anderson and Gerbing (1988) and George and Mallery (2003), the internal consistency or reliability of the instruments is evaluated. According to the criteria established in the literature: (1) If the Cronbach’s alpha coefficient is >0.90, the reliability is excellent; (2) If the Cronbach’s alpha coefficient is >0.80, the reliability is highly good; (3) If the Cronbach’s alpha coefficient is >0.70, the reliability is acceptable; (4) In all other situations, reliability is questionable and unacceptable. When applying the statistics, it is evident that there is high reliability and internal consistency in the constructs since the Cronbach coefficient in most cases is greater than or quite close to 0.90 (Table 1).

4.3. Findings from the Structural Equation Model

Before test the hypotheses, an evaluation of the goodness of fit of the measurement scales used was carried out. There are three goodness of fit criteria, these are: absolute fit, incremental fit and parsimony fit. Table 2 display classical goodness of fit measures for all the constructs and for the model. In general, results show a good fit of the model, since the values associated with each statistic belong to intervals generally accepted in the literature.

Then we proceeded to estimate the P-values of the regression coefficients to validate the hypotheses. Figure 1 presents the structural model and Table 3 display the findings obtained in the hypothetical relationship. Specifically, we show the estimated standardized parameters and the associated P-values. All the individual hypotheses are accepted because the P-value is less than the significance level of 5%. Brand equity is directly affected by brand awareness ($\beta = 0.101$, $P < 0.05$). It could be said that the knowledge or associations that the client internalizes about the brand influence its choices; therefore, if university students perceive the brand as representative, then they will lean toward it.

Table 1: AVE and Cronbach’s alpha

Factor	Average loading	AVE	Cronbach’s alpha
Brand awareness	0.7	0.5	0.87
Brand image	0.71	0.58	0.92
Perceived quality	0.77	0.62	0.97
loyalty	0.7	0.65	0.96
Brand equity	0.76	0.58	0.89

AVE: Average variance extracted

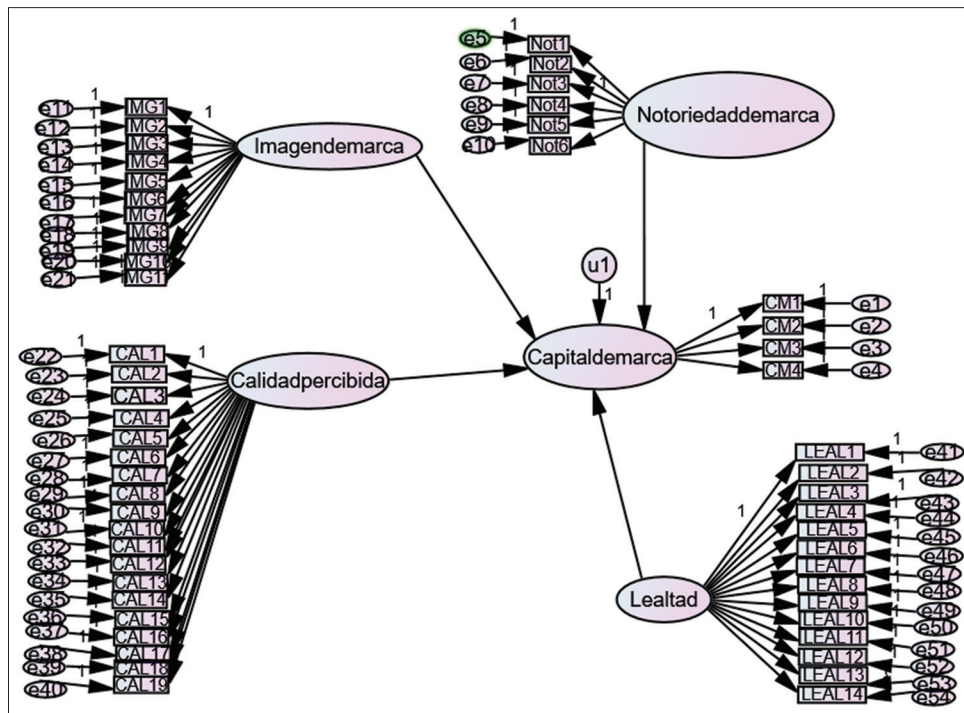
Table 2: Goodness of fit measures for each construct

Measures	Awareness	Image	Perceived value	Loyalty	Brand equity	General model
Absolute adjustment measures						
Chi-squared	2.10	2.52	0.73	2.63	1.45	2.12
GFI	0.99	0.91	0.86	0.89	0.99	0.69
RMSEA	0.07	0.09	0.09	0.09	0.05	0.07
RMR	0.03	0.05	0.04	0.04	0.02	0.04
Incremental adjustment measures						
TLI	0.98	0.94	0.93	0.95	1.00	0.87
CFI	0.99	0.96	0.94	0.96	1.00	0.88
NFI	0.99	0.93	0.91	0.94	1.00	0.79
RFI	0.96	0.91	0.89	0.92	0.98	0.78
Parsimony measures						
PGFI	0.62	0.58	0.61	0.58	0.20	0,619

Table 3: Hypothesis analysis results, with standardized coefficients

Proposed hypotheses	Relationship	Standardized estimate	P-value	Observation
H_1 : Brand awareness is a factor that influences the brand equity of Ecuadorian private universities	Significant	0.101	0.046	Accepted
H_2 : Brand image is a factor that influences the brand equity of Ecuadorian private universities	Significant	0.168	0.001	Accepted
H_3 : Perceived quality is a factor that influences the brand equity of Ecuadorian private universities	Significant	0.464	0.000	Accepted
H_4 : Brand loyalty is a factor that influences the brand equity of Ecuadorian private universities	Significant	0.667	0.000	Accepted

P<0.05 significant

Figure 1: Structural model

Brand equity is directly affected by brand image ($\beta = 0.168$, $P < 0.05$). The attributes, benefits and quality provided by the image give significant value to it, which leads university students to a selection process because of the differentiating effects that universities offer through the brand image. Brand equity is directly affected by perceived quality ($\beta = 0.464$, $P < 0.05$). Perceived brand quality is closely related to the perceived value and therefore to the opinion that students form of the university, which induces individuals to have a disposition to select the university in relation to the perception of quality that the university offers to them. Brand equity is directly affected by brand loyalty ($\beta = 0.667$, $P < 0.05$). The issues of emotional affinity and satisfaction with the service received are key elements when selecting the university, which leads to repeat purchases. It can be inferred that this affinity is transmitted by parents, family members or friends who have previously received educational services and who transmit their feelings of satisfaction and complacency with the product received.

Finally, we calculated the R^2 coefficient. This is done by determining the difference between 1 min the proportion of variance that is not directly explained in the model (Kline, 2005). This R^2 is

interpreted as the explained variance of the dependent variable. In this case the R^2 is 0.70. Therefore, brand equity is explained by the exogenous variables: awareness, image, perceived quality and loyalty, by 70%. Likewise, it must be interpreted that 30% of variability is not explained by the model. This gap should be addressed in future research, considering other variables according to a rigorous review of the literature.

5. CONCLUSION

The aim of this research was to determine the factors that affect university brand equity. Brand awareness, brand image, perceived quality and brand loyalty are among the main variables that contributes to brand equity according to the literature. Consequently, we test for the influence of these variables, by the construction of four hypotheses, on brand equity using a sample a university student in Ecuador.

We conducted a survey which we validity with experts, and the reliability test on the recollected sample was carried out using Cronbach's Alpha. We use a structural equation model to test for the hypotheses.

The first hypothesis presents a significant relationship between brand awareness and brand equity. It can be concluded that for the student population, brand awareness significantly influences brand equity. This is the population appreciates brand equity the more awareness or knowledge they have about it. Regarding the second hypothesis, brand image has a positive and significant influence on brand equity. It is concluded that the attributes and benefits give it a significant value in the opinion of the population regarding brand equity. In the third hypothesis, it was also evident that there is a significant relationship between perceived brand quality and brand equity, allowing us to conclude that quality seen from the perspective of performance influences the population when determining university brand equity. The fourth hypothesis is also significant. Brand equity improves the more loyalty there is to the institution. Therefore, emotional affinity and satisfaction with the service received are key elements when selecting the university, which leads to repeat purchases. Finally, by determining the R^2 it can be deduced that all the exogenous variables proposed in this study explain 70% of the endogenous variable.

In relation to the results obtained, it is recommended that universities work on activities that consolidate the loyalty of students and their graduates since, as could be seen, it is the variable with the greatest impact on brand equity. In further studies it is recommendable to extend the sample and to test for possible significant differences between sociodemographic groups.

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