

Assessing Brand Equity of Affiliated Universities in Vietnam National University, Hanoi

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Abstract: - This research aimed to assess the brand equity of affiliated universities in Vietnam National University, Hanoi (VNU). There were 486 undergraduates and post-graduates from member universities in VNU participating in the research. Exploratory factor analysis, confirmatory factor analysis, Delphi analysis, and Structural Equal Modeling (SEM) were utilized to identify components of brand equity of the affiliated universities. The findings show that brand equity consists of seven components: brand recognition, lecturer quality, university reputation, brand association, facilities, loyalty, and perceived quality. Among these, facilities have the biggest impact on brand equity with $\beta=0.819$, followed by brand recognition and lecturer equity with $\beta=0.783$ and $\beta=0.758$. On the other hand, loyalty appears to be the factor with the least influence with $\beta=0.740$. In short, strategies of investment in the teaching staff need greater attention and effective enforcement; besides, it is also necessary to continuously supplement and upgrade technical facilities for teaching and research activities and improve brand recognition in line with the university identity.

Key-Words: - brand equity, university, facilities, brand recognition, lecturer quality, affiliation.

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1 Introduction

1.1 Overview of University Brand Equity

Brand equity is a marketing term referring to the values of a brand. A brand represents a business and best expresses its success. Successfully branding, the business has built up its position in customers' minds as the brand reminds them of the business. Brands can be considered an asset of a business.

Brand equity is regarded as an added value to products or services assessed by consumers and representing a business's competitiveness in the market. It is an intangible asset that brings about huge value, encouraging businesses to seek to improve their brand equity. This may be a vague concept related to values that a brand can offer to customers, the community, or other direct stakeholders such as employees or shareholders.

Factors contributing to brand equity include the logo, slogan, and symbol of a company or a product. Such factors are also the company's assets which help it thrive on success and direct access to its customers. The factors are identified and evaluated by customers through their awareness and experiences with a brand. To be more specific, if a business can provide its customers with positive experiences and has good brand recognition, it indicates that the company has positive brand equity. On the contrary, if customers are disappointed due to poor experiences with the products or services, the company has negative brand equity.

From a business perspective, brand equity is identified based on financial and accounting statistics. On the other hand, from the customers' viewpoint, brand equity can be determined by consumer behaviors and measured with various

marketing methods, [1].

In [2], the author confirmed that digital transformation and global integration both play a role in executing brand management activities in universities, especially private universities in Hanoi. The protocols and decisions made during brand management, as well as the level of interaction in brand management, greatly depend on the effectiveness of digital transformation on campus and the administrators' willingness to integrate globally. Her paper adds to the literature on deploying brand management activities, with theoretical and practical values for improving understanding of the effect of digital transformation and the need to integrate globally in university brand management.

1.2 Introduction to Vietnam National University, Hanoi

Vietnam National University, Hanoi, or VNU is a hub of training, scientific research, and high-quality multidisciplinary knowledge and technological transfer. It has now reached the regional level and is about to approach the global one, meeting the nation's needs of development and keeping up with the advanced higher education development trends worldwide.

VNU based in Hanoi is acknowledged as one of the top 1000 highest-quality universities and affiliated universities in the world. VNU has implemented a high level of autonomy and accountability. Its affiliated institutions are highly autonomous organizations of training, scientific, and technological research and serve as legal entities equal to any independent university under Law on Education and Law on Higher Education.

At present, VNU has 10 member universities, namely the University of Natural Sciences, University of Social Sciences and Humanities, University of Languages and International Studies, University of Engineering and Technology, University of Economics and Business, University of Education, Vietnam Japan University, University of Medicine and Pharmacy, School of Law and International School.

VNU is a high-quality multidisciplinary hub of training and technological and scientific research which is greatly supported by the State. It is currently implementing several training programs in natural sciences, social sciences, humanities, languages, technology, economics, and education. To be more specific, there are 140 undergraduate training programs, 187 post-graduate ones, and 115 doctoral training ones, 32 of which have been accredited by AUN and 26 of which are

internationally cooperated.

1.3 Overview of the Teaching Staff in VNU

According to VNU, its teaching staff is considered the best in both quantity and quality in the university system nationwide. The number of staff on the payrolls with social insurance covered is 3,476, which consists of 1,876 scientific officers and 1,719 lecturers including 44 professors, 274 associate professors, 872 doctors, and 1,330 masters. There are several leading researchers with high prestige within and without the country in the fields of natural sciences, social sciences, humanities, languages, technology, law, economics, and education. The percentage of scientific officers (lecturers and researchers) with doctoral degrees and scientific doctoral degree has made up 44%, while which that of professors and associate professors is more than 17%, triple the average percentage of the country. In certain units, the percentage of scientific officers with doctoral degrees or more accounts for 55%. The exact percentage at University of Economics and Business, University of Education, University of Engineering and Technology, University of Natural Sciences, and the School of Law is respectively 77%, 70.8%, 60.5%, 58.6%, and 55.6%. Additionally, the percentage of staff with bachelor's degrees in some units, who are sources for master's and doctoral training, is only 15%.

Moreover, VNU also has a team of guest lecturers who are foreign scientists engaged in teaching and research. 250 lecturers and scientists working at VNU have been assigned to work as guest lecturers and researchers in universities and research centers in developed countries. A lot of scientific officers in VNU have received outstanding rewards including 15 Ho Chi Minh Prize winners, 10 National Prize winners and some other prestige scientific awards in the world.

2 Theoretical Background

2.1 Concepts of Brand Equity

Brand equity can be defined in different ways. In general, it refers to the added value that a brand brings to the branded product(s). Such value is perceived by consumers so it is also known as customer-based brand equity (CBBE). According to [3], CBBE consists of four components: brand recognition, perceived quality, brand association, and brand loyalty.

In [4], it is pointed out that the majority of the

studies around the world only deal with the exploration of scales measuring brand equity, but set aside the relations between these scales and brand equity as a whole.

According to [5], findings from global research projects have revealed two groups of factors that can measure a university's brand equity, namely core factors (brand recognition, lecturer quality, university reputation, brand loyalty, and language competence) and supporting factors (library services, students' life, career development and facilities).

In [5], the author has proved that the factor of loyalty has impact of the overall brand equity of a university. In her research, she has adopted Aaker's four components constituting brand equity including brand recognition, perceived quality, brand image, and brand loyalty.

2.2 Characteristics of Brand Equity

Brand equity is a collection of attributes governing consumers' choices, namely (1) brand recognition, (2) consumers' attitudes to the brand, and (3) business activities, [4].

It has also been pointed out that brand equity is a product's attractiveness originating from factors that are not its features and created by the producer including (1) brand recognition, (2) brand association, (3) attitudes, (4) engagement and (5) operations, [4].

Brand equity consists of three fundamental components: consumers' awareness, positive or negative impacts, and result values, [5]. First, consumers' awareness includes knowledge and experiences of a brand, its products, and brand building. Such awareness has direct impacts which

can be either positive or negative. To be more specific, if brand equity is positive, its producer, products, and financial status are beneficial; while if it is negative, the reverse scenario takes place. These impacts can turn into tangible or intangible values. Tangible values are achieved and revenue or profits increase when business performance is positive. On the other hand, in the case of negative impacts, neither tangible nor intangible values are positive. For example, this can happen when a company has a notable product recall or causes widely-known environmental consequences.

2.3 Importance of Brand Equity

In general, have concluded that brand is a company's asset, [5], [6]. Brand equity tends to generate remarkable values for companies. To be more specific, companies can charge insurance fees for products with high positive brand equity. Positive brand equity can be added to another product line, increasing the company's revenue and profits. Besides, positive brand equity also helps them gain more market shares as the brand(s) is known to, acknowledged, and loved by more consumers.

3 Research Model, Methodology and Sample

3.1 Research Model

Based on findings from previous research projects, the author has come up with the research model as illustrated in Figure 1 below.

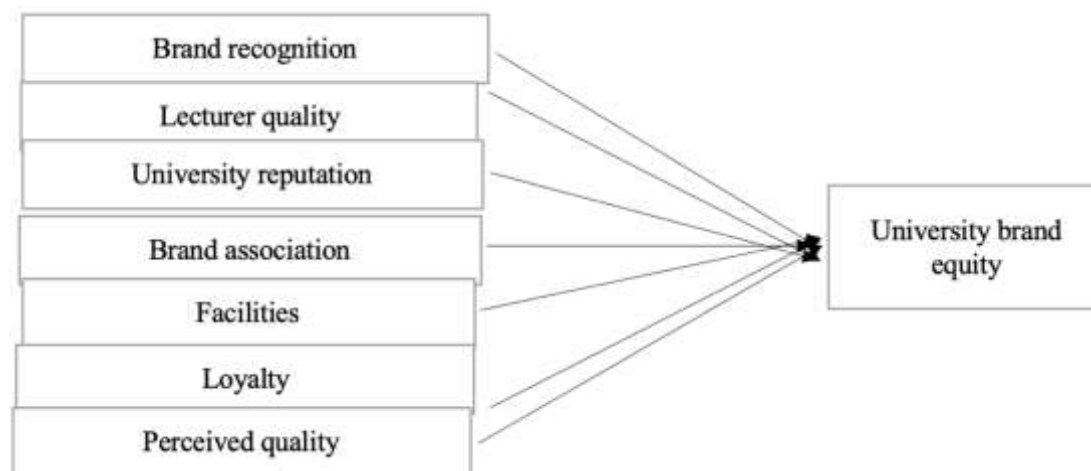


Fig. 1: Components of brand equity
Source: Authors' research

In this model,

Brand recognition (variable coded as NDTH):

Brand recognition refers to cases when customers can memorize and name a brand and associate it with a specific product(s), [3], [5]. To improve brand recognition, companies often resort to digital marketing, billboard advertising, or OOH. Generally, any channel can be utilized and the most decisive factor is the content and messages delivered.

Lecturer quality (variable coded as CLGV):

Lecturer quality is acquired from lecturers' teaching, training, research, and social services and illustrated through students' learning and training outcomes. It is assessed based on how they satisfy requirements for their positions and of their university, [7].

University reputation (variable coded as DT):

According to [5], theories on university reputation have mainly been developed based on existing research on business reputation and greatly influenced by studies on education marketing. There is a lack of a consistent definition of business reputation as several scholars still have mixed opinions on the subject matter. This is partly because service providers, such as universities, stand a higher chance of losing reputation if their service quality is not effectively managed, and reputation has a strategic role in the sustainable future of higher education institutions, [5]. In education service management, reputation, and its related terms are widely used as an orientation tool that greatly affects students' choice of university, [5]. Students may have already been aware of the university and its training curricula. Reputation management is considered crucial to attract and retain students. It is undeniable that an institutions' reputation is the factor with the strongest impact on students' choice of university, [7].

Brand association (variable coded as LTTH):

Positive brand association must be a strong, convenient, and unique brand, [1]. Brand association can be customers' imprints on one or more characteristics of a product when it is mentioned through visualization of its product look or features, [8], [9]. Therefore, brand association is considered a fundamental factor in deciding consumers' purchasing decisions, [6]. In general, consumers' brand association is a component constituting brand equity, [10].

Facilities (variable coded as CSVC): According to [5], the university's technical facilities are necessary means allowing students to conveniently and easily study by themselves, acquire knowledge faster, and retain it longer. They also help lecturers

reduce time spent on presentation and lecturing and have more time to carry out interactive tasks and activities that allow the students to get access to, experience and proactively search for and be creative in knowledge acquisition and skill training. Additionally, other modern means are also helpful in reducing theory-based lectures and facilitating more interactive lessons. As a result, students can easily and quickly understand and memorize the lessons.

Loyalty (variable coded as LTT): According to [3], customers' loyalty has a vital role in a business as it affects its success and sustainability. Customers' loyalty can be defined as their level of satisfaction, trust, and engagement in a brand, product, or service. Loyal customers tend to repurchase the product or service of a supplier, recommend it to others and are hardly lured by a competitor's product or service. A brand with high loyalty stands a high chance of bringing such benefits as lower marketing costs, improved negotiation power, new customer attraction, and more time to address competition risks, [11]. Loyal customers are regarded as the biggest asset or the heart of a brand. Therefore, it is a part of brand equity, [3].

Perceived quality (variable coded as CLCN): Perceived quality has a direct impacts on customers' purchasing decisions and loyalty as it offers a reason for a person to buy the product of one brand rather than another, [9], [10]. This is the factor for customers to compare products between brands, [12]. Hence, it is also a component of brand equity, [8].

3.2 Research Methodology

In this research, the author has adopted the following research methods: exploratory factor analysis to identify component factors constituting a university's brand equity, confirmatory factor analysis, Delphi, to identify component factors in brand equity and variables in each component factor, and structural equal modeling (SEM).

3.3 Research Sample

To collect necessary data, the researcher administered a survey to 525 undergraduates and post-graduates from VNU's universities with 486 returned, accounting for 92.57%. The collected data was then analyzed using SPSS version 2022.

The following are details of the research sample:

Gender:

Male respondents: 275/486, accounting for 56.58%

Female respondents: 211/486, accounting for 43.42%

Respondent structure:

Undergraduates: 318/486, accounting for 65.43%

Post-graduates: 168/486, accounting for 34.57%

Student allocation:

University of Social Science and Humanities: 58/486, accounting for 11.9%

University of Languages and International Studies: 59/486, accounting for 12.1%

University of Engineering and Technology: 66/486, accounting for 13.5%

University of Economics and Business: 67/486, accounting for 13.7%

University of Education: 53/486, accounting for 7.4%

Vietnam Japan University: 34/486, accounting for 10.9%

University of Medicine and Pharmacy: 40/486, accounting for 8.2%

School of Law: 58/486, accounting for 11.9%

International School: 51/486, accounting for 10.4%

4 Research Findings

4.1 Scale Testing with Confidence Coefficient and Exploratory Factor Analysis

Table 1 showed the Cronbach’s Alpha results of all

scales. It can be seen that the results of all factors were above 0.6 and their corrected item-total correlation values were above 0.3, indicating all scales in the author’s recommended research model ensured reliability and met the standards to be used in the next analysis.

Based on exploratory factor analysis, independent variables can be categorized into seven groups with KMO = 0.847 > 0.5, Sig. = 0.000 < 0.05, and total variance explained = 61.319% > 50%. The analysis for dependent variables can be derived into one group with KMO = 0.825 > 0.5; Sig. = 0.000 < 0.05, (Kaiser 1988), and total variance explained = 68.466% > 50%. Generally, EFA revealed that all independent and dependent variables met the standards. The Factor loading of all factors coded as independent variables, including Brand recognition, Lecturer quality, University reputation, Brand association, Facilities, and Loyalty, ranges from 0.875 to 0.892, which indicates that they all satisfied the testing indices. This allowed the authors to confirm that the research model was in line with the research goals and objectives and could be used for further analysis without adjustments. The detailed results of the exploratory factor analysis of independent and dependent variables are illustrated in Table 2.

Table 1. Cronbach’s Alpha of all scales

Factors	Number of variables	Cronbach’s alpha	Factor loading	Means
Brand recognition	4	0.812	0.619-0.723	3.29
Lecturer quality	6	0.895	0.697-0.792	3.14
University Reputation	5	0.811	0.518-0.721	3.75
Brand association	4	0.828	0.599-0.719	3.48
Facilities	6	0.817	0.596-0.678	3.32
Loyalty	5	0.861	0.614-0.755	3.19
Perceived quality	6	0.882	0.608-0.741	3.39

Source: SPSS version 2022

Table 2. Exploratory factor analysis of independent and dependent variables

Independent variables	KMO	Sig	Total variance explained	Factor loading
Brand recognition	0.847	0.000	61.319%	0.711-0.802
Lecturer quality				0.698-0.814
University Reputation				0.705-0.859
Brand association				0.722-0.819
Facilities				0.717-0.825
Loyalty				0.780-0.839
Perceived quality				0.763-0.816
Dependent variable (overall brand equity)	0.825	0.000	68.466%	0.875-0.892

Source: SPSS version 2022

4.2 Confirmatory factor analysis (CFA)

CFA testing results of each component in the scales showed that all chi-square had P-value >5%; CMIN/df<2, GFI>0.8, TLI and CFI≥0.9, which means CFA for all components were unidirectional, ensuring convergent validity, reliability, and discriminant validity.

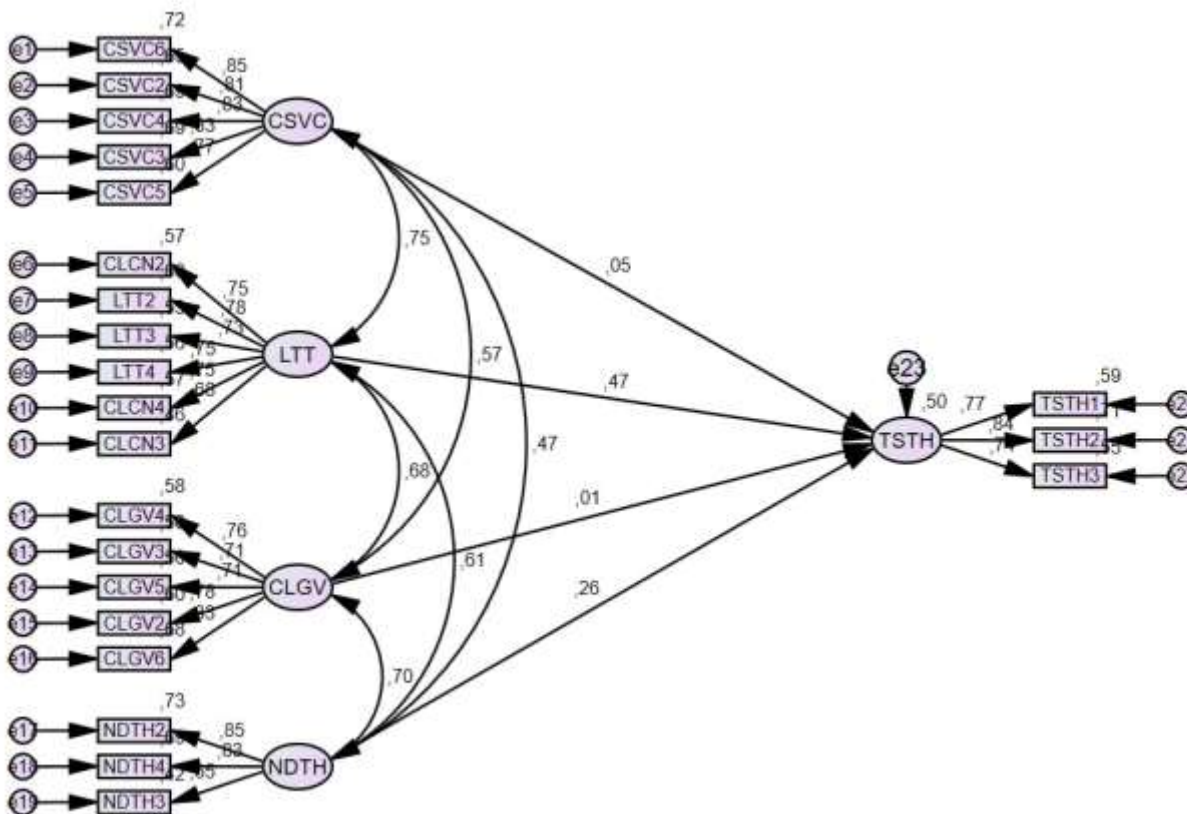


Fig. 2: CFA results of all components in brand equity
 Source: Authors' research

The model had 699 free tiers with chi-square = 1306.219, P-Value = 0.000 and chi-square/df = 1.764 < 2 and other figures showing that the model is suitable for market data (GFI = 0.819, CFI = 0.909, TLI = 0.933, and RMSEA = 0.036). Besides, the values of all observed variables met the standard (>= 0.5); and with P value of 0.000, they were proved to be statistically significant. The detailed CFA results are exhibited in Figure 2 as follows.

In general, based on confirmatory factor analysis, all variables were unidirectional, ensuring convergent validity, reliability, and discriminant validity. The model was shown to be suitable for market data. The above CFA results are similar to what has been drawn in [2] in the identification of independent variables (including CSVC, LTT, CLGV, and NDTH) and the dependent one

(TSTH).

4.3 Hypothesis Testing and Regression Analysis

The estimated results (which have been standardized) of the research model had chi-square = 14990.230 with P value = 0.000, chi-square/df = 1.865 < 2, and other indices (GFI= 822, CFI = 906, TLI = 941 and RMSEA = 0.041), which indicated that the research model is suitable for market data and data collected for the research. All hypotheses in the research were proved to be statistically significant as even the highest P value was below 0.05 at a reliability rate of 95%. In other words, all hypotheses were acceptable. Among the seven surveyed factors, lecturer quality had the biggest impact on VNU's member universities' brand equity (β=0,268). In general, this leads to the need

for continued lecturer investment strategies which are to be carried out effectively.

Table 3. Hypothesis testing and regression coefficient of the research model

Hypotheses	Coefficient	Standardized coefficient	S.E.	C.R.	P	Conclusion
Brand recognition is in a proportional correlation with brand equity	0.188	0.149	0.0459	17.076	0.000	Hypothesis accepted
Good lecturer quality leads to higher brand quality	0.108	0.122	0.0469	17.619	0.000	Hypothesis accepted
Brand association is in a proportional correlation with brand equity	0.101	0.126	0.0488	17.673	0.000	Hypothesis accepted
Loyalty is in a proportional correlation with brand equity	0.154	0.149	0.0476	17.599	0.000	Hypothesis accepted

Source: SPSS version 2022

In [2], the author also pointed out the correlation among the factors and assessed similar hypotheses to those in this particular research which are (1) Good lecturer quality leads to higher brand quality, (2) Brand association is in a proportional correlation with brand equity and (3) Loyalty is in a proportional correlation with brand equity. The hypothesis testing and regression coefficients of the research model are shown in Table 3.

4.4 Correlation among Factors

The collected data showed that all factors were closely correlated and had mutual impacts. This proved that the research model was appropriate and all measuring scales were accurate, reliable, and able to confirm the possibility of the factors' impacts on universities' brand equity. Figure 3 below illustrated the standardized weights of all components in brand equity.

Standardized Regression Weights: (Group number 1 - Default model)

	Estimate
TSTH <--- CSVC	,050
TSTH <--- LTT	,475
TSTH <--- CLGV	,011
TSTH <--- NDTH	,257
Cosovatchat6 <--- CSVC	,850
Cosovatchat2 <--- CSVC	,805
Cosovatchat4 <--- CSVC	,831
Cosovatchat3 <--- CSVC	,832
Cosovatchat5 <--- CSVC	,774
Chatuongcamnhan2 <--- LTT	,754
Longtrungthanh2 <--- LTT	,777
Longtrungthanh3 <--- LTT	,725
Longtrungthanh4 <--- LTT	,748
Chatuongcamnhan4 <--- LTT	,754
Chatuongcamnhan3 <--- LTT	,681
Chatuonggiangvien4 <--- CLGV	,761
Chatuonggiangvien3 <--- CLGV	,709
Chatuonggiangvien5 <--- CLGV	,710
Chatuonggiangvien2 <--- CLGV	,776
Chatuonggiangvien6 <--- CLGV	,826
Nhandienthuonghieu2 <--- NDTH	,853
Nhandienthuonghieu4 <--- NDTH	,832
Nhandienthuonghieu3 <--- NDTH	,650
Taisanthuonghieu3 <--- TSTH	,741
Taisanthuonghieu2 <--- TSTH	,841
Taisanthuonghieu1 <--- TSTH	,769

Fig. 3: Standardized regression weights of all components in brand equity

Source: SPSS version 2022

5 Conclusions, Implications for Administration, and future Research Approaches

5.1 Conclusion

This particular research has identified seven factors constituting brand equity of affiliated universities in VNU, Hanoi, including brand recognition, lecturer quality, university reputation, brand association, facilities, loyalty, and perceived quality. Among these factors, facilities have the biggest impact on universities' brand equity $\beta=0.819$, followed by brand recognition with $\beta=0.783$ and lecturer quality with $\beta=0.758$; and loyalty has the least influence on brand equity with $\beta=0.740$.

This paper also pointed out the typical features of universities' brand administration amid the strong digitalization and autonomy implementation in Vietnam. The findings theoretically and practically serve as references in brand administration for learners of different levels including undergraduates, graduates, and research students, as well as practitioners and professionals in the field. All of the factors considered in the research were proved to be valid as shown in Table 4 below.

Table 4. Validity analysis of all components in brand equity

Validity Analysis								
	CR	AVE	MSV	MaxR(H)	CSVC	LIT	CLGV	NDIH
CSVC	0.911	0.671	0.559	0.913	0,819			
LIT	0.879	0,548	0.559	0.881	0.748***	0,740		
CLGV	0.870	0.574	0.490	0.876	0.569***	0.681***	0,758	
NDIH	0.825	0.614	0.490	0.849	0.471***	0.609***	0.700***	0,783

Source: SPSS version 2022

5.2 Implications for Administration

Since established, affiliated universities in VNU have always placed great focus on developing their teaching staff and making policies and an ecosystem for them to devote to their best and be acknowledged. Judging from the current situation in the universities, lecturer quality is a significant prerequisite for VNU's development in general, and brand equity in particular. In short, there is a need for continued lecturer investment strategies in the member universities with effective enforcement mechanisms. More importantly, it is necessary to continuously supplement and upgrade technical facilities for teaching and scientific research and

improve brand recognition in association with university's identity.

5.3 Future Research Approaches

In the coming time, there should be an overall assessment of the brand equity of all universities in Vietnam, paving the way for specific policy consultations for the Government and these universities. Shortly, the authors plan to carry out studies comparing and contrasting the current situation of brand administration between universities in Vietnam and those in the Top 100 in THE ranking system, providing insights into more modern and effective brand administration methods.

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Contribution of Individual Authors to the Creation of a Scientific Article (Ghostwriting Policy)

- Nguyen Ngoc Trang studied previous research papers related to the topic, identified the research gap and came up with the research model.
- Nguyen Anh Tuan designed, tested and administered the questionnaires, quantitatively analysed the data and discussed the findings.
- Le Nam Long translated the manuscript, reviewed all references and made the final edition.

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Conflict of Interest

The authors have no conflicts of interest to declare.

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