

THE INFLUENCE OF BRAND EQUITY ON THE COGNITIVE DIMENSION OF STUDENT BEHAVIOR WHEN OPTING FOR A HIGHER EDUCATION INSTITUTION

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ABSTRACT

This study aims to examine whether and how elements of brand equity influence the cognitive dimension of student behavior when opting for a higher education institution. Based on Keller's model, brand awareness and brand image are used in this research as measures of brand equity, which represents the independent variable in the analysis. The cognitive dimension of behavior (the dependent variable) refers to an individual's thoughts, knowledge, and perceptions acquired through direct interaction with the attitude object, as well as information obtained from other sources. To achieve the defined objective and test the proposed hypothesis, primary data were collected through field research using a survey technique in Bosnia and Herzegovina (BiH). A random stratified sample included 1,141 students from the three largest university centers in BiH: Sarajevo, Mostar, and Banja Luka. The collected data were analyzed using IBM SPSS Statistics 25. The influence of the independent variables on the dependent variable was examined using regression analysis, with a significance level of 0.05. The results showed that brand awareness and brand image, as variables through which brand equity was operationalized, have a significant positive impact on the cognitive dimension of student behavior when opting for a higher education institution.

KEYWORDS: brand equity, Keller's model, consumer behavior, cognitive dimension of consumer behavior, higher education institution

UTJECAJ TRŽIŠNE VRIJEDNOSTI MARKE NA KOGNITIVNU DIMENZIJU PONAŠANJA STUDENATA PRI ODABIRU VISOKOŠKOLSKE INSTITUCIJE

SAŽETAK

Cilj rada je istražiti utječu li i kako elementi tržišne vrijednosti marke na kognitivnu dimenziju ponašanja studenata pri odabiru visokoškolske institucije. Oslanjajući se na Kellerov model, poznatost marke i imidž marke se u ovom istraživanju koriste kao mjere tržišne vrijednosti marke, koja predstavlja nezavisnu varijablu u analizi. Kognitivna dimenzija ponašanja (zavisna varijabla) odnosi se na misli pojedinca, na znanje i percepcije koje osoba stječe kroz izravnu interakciju s objektom stavova, kao i informacije dobivene iz drugih izvora. U svrhu dosezanja definiranog cilja i testiranja postavljene hipoteze primarni podaci su prikupljeni terenskim istraživanjem, tehnikom anketiranja, na području Bosne i Hercegovine (BiH). Slučajni stratificirani uzorak obuhvatio je 1141 studenta u tri najveća Sveučilišna centra u BiH i to Sarajevo, Mostar i Banja Luka. Analiza prikupljenih podataka provedena je u programu IBM SPSS Statistics 25. Utjecaj nezavisnih varijabli na zavisnu istražen je regresijskom analizom, uz granicu značajnosti 0,05. Rezultati su pokazali da poznatost marke i imidž marke kao varijable kroz koje se operacionalizirala tržišna vrijednost marke značajno pozitivno utječu na kognitivnu dimenziju ponašanja studenata pri odabiru visokoškolske institucije.

KLJUČNE RIJEČI: tržišna vrijednost marke, Kellerov model, ponašanje potrošača, kognitivna dimenzija ponašanja potrošača, visokoškolska institucija

1. INTRODUCTION

In today's fast-paced and technologically advanced society, marked by increasing market competition, both businesses and institutions face numerous challenges. To remain competitive, it is essential to adapt marketing strategies and build strong brands aligned with the expectations of contemporary target groups. Public higher education institutions are increasingly recognizing the importance of developing a distinctive brand in order to strengthen their position in the highly dynamic and internationalized higher education market. Bosnia and Herzegovina is no exception, as public universities face growing competition from private institutions and professional programs. Therefore, clear and authentic branding emerges as a necessary strategy for differentiation and long-term positioning. Branding a higher education institution not only contributes to its visibility and the attraction of high-quality students, but also supports the fulfillment of broader social responsibility. In this context, the focus of this paper is the analysis of the impact of brand equity elements, measured using Keller's model, on student behavior when opting for a higher education institution, specifically addressing the cognitive dimension of their decision-making behavior.

2. REVIEW OF PREVIOUS RESEARCH

This paper focuses on three fundamental concepts: brand, brand equity, and the cognitive dimension of consumer behavior. For the purposes of this study, brand equity is examined from the consumer-based perspective, according to Keller (1993), who emphasizes the importance

of brand knowledge in consumer decision-making. This knowledge consists of two components: brand awareness and brand image, and brand equity is achieved when the consumer associates the brand with positive and unique associations. The cognitive dimension of behavior, as part of the three-component attitude model by Schiffman and Kanuk (2004), includes awareness, knowledge, and beliefs about a product or service. Previous research confirms its influence on consumer behavior. Due to the increasingly intense competition among higher education institutions, students are more frequently viewed as consumers (Rutter et al., 2016; Royo, 2017). In analyzing the existing scientific literature on brand equity and the cognitive dimensions of consumer behavior in higher education, several key themes emerge. Research focusing on brand equity, particularly its impact on university reputation, dominates the available literature (Khoshtaria et al., 2020; Arian & Khoshtaria, 2020; Rizard et al., 2022). In this context, various models have been employed to explain the decision-making process of students when opting for a higher education institution (Hossler et al., 1999; Aydın, 2015; Obermeit, 2012). While the importance of brand awareness in higher education is undisputed, the number of studies focusing exclusively on students' brand-based decision-making remains limited (Stephenson et al., 2016). Keller (2008) emphasizes the importance of brand awareness in his model, referring to the consumer's ability to recognize or recall a brand. According to his model, brand awareness is the foundational component of brand equity and consists of two key elements: brand recognition and brand recall. In this context, brand recognition plays a significant role in consumer behavior when choosing products or services, and brand awareness is considered a strong predictor of consumer choice among various alternatives (Macdonald & Sharp, 1996). In his experimental study, Zhang (2020) avoids traditional marketing tools and instead investigates the cognitive processes triggered by brand awareness. His findings show that the cognitive processes of identification and attention allocation vary depending on the level of brand familiarity. Similarly, brand equity in Keller's model is also derived from brand image. Keller (2013) defines brand image as the consumer's perception of a brand, shaped by the associations the brand evokes in the consumer's memory. Brand image plays a key role in the success and reputation of a brand (Song et al., 2023), and previous studies have shown that it significantly affects the consumer's purchase intention (Gupta et al., 2021; Agdigos et al., 2022; Hui & Salman, 2023). In the context of higher education institutions, Mulyono (2016) concludes that brand awareness has a positive and significant impact on brand image, which in turn has a strong influence on students' decision-making when selecting a university. Although studies directly linking brand image to the cognitive processes of consumers in the context of higher education are still limited, the existing literature clearly demonstrates the interconnection between brand equity, brand image, and the cognitive dimensions of consumer behavior.

The research problem addressed in this paper can be defined by the following question: To what extent and in what ways do elements of brand equity influence the cognitive dimension of consumer behavior, specifically among students when opting for public higher education institutions? This study aims to explore whether and how elements of brand equity influence the cognitive dimension of student behavior in the decision-making process for choosing a higher education institution. Based on the literature reviewed, the defined research problem, and the stated objective, the following research hypotheses have been formulated:

H1a: Brand awareness has a positive influence on the cognitive dimension of student behavior when opting for a higher education institution.

H1b: Brand image has a positive influence on the cognitive dimension of student behavior when opting for a higher education institution.

3. RESEARCH METHODOLOGY

To achieve the set objective and test the hypotheses, an empirical study was conducted in Bosnia and Herzegovina (BiH) on a sample consisting of 1,141 students from public higher education institutions. The basic characterization of the sample in this study is a stratified random sample. When forming the strata, the territorial division of BiH was taken into account (two entities: Federation of BiH and Republic of Srpska, as well as the Brčko District), along with the size of the higher education institutions, specifically the number of students at each public university. In this context, students from the three largest university centers in BiH—Sarajevo, Mostar, and Banja Luka—were included in the research.

The data collection technique used was surveying. Respondents answered the questions in the questionnaire personally through anonymous participation. The instrument for primary data collection at this stage was a questionnaire consisting of two parts. The first part contained questions about gender, university, study cycle, mode of study, and origin. The second part included a set of statements related to the research topic, developed based on relevant scientific literature (Oliver, 1997; Low & Lamb, 2000; Kim et al., 2003; Chang & Chieng, 2006; Esch et al., 2006; Salinas & Pérez, 2009; Ismail & Spinelli, 2012; Sasmita & Mohd Suki, 2015; Ndaaba et al., 2016; Panda et al., 2019; Rajh, 2022). In this section of the questionnaire, brand awareness (PB) was measured with four statements, while brand image (IB) and the cognitive dimension of student behavior (COG) were each measured with five statements. Respondents expressed their level of agreement with the offered statements on a five-point Likert scale (1—strongly disagree; 5—strongly agree). The statements are presented in Table 1.

Table 1. Questionnaire statements

Code	Statement
PB1	When choosing this university, its name was very well known to me.
PB2	When choosing this university, I easily recognized its logo among the competition.
PB3	When choosing this university, I knew what its brand looked like.
PB4	When choosing this university, I could immediately recall some characteristics of its brand.
IB1	When choosing this university, I believed that it is a university with tradition and culture.
IB2	When choosing this university, I believed that it is a quality university.
IB3	When choosing this university, I believed that it is a recognized university.
IB4	When choosing this university, I believed that it has international acclaim.
IB5	When choosing this university, I believed that this university offers good knowledge at an acceptable cost.
COG1	When choosing this university, I knew all the advantages of studying there.
COG2	When choosing this university, I knew all the disadvantages of studying there.
COG4	When choosing this university, I had enough information about it.
COG3	When choosing a university, I rationally considered all available options.
COG5	By choosing this university, I believe that I made a good decision.

Source: Author's work

For the statistical analysis of the data, IBM SPSS Statistics 25 (IBM SPSS Statistics for Windows, version 25.0; Armonk, NY: IBM Corp., 2017) and Microsoft Excel (Office 2016 version; Microsoft Corporation, Redmond, WA, USA) were used. Descriptive statistics, as well as correlation and regression analyses, were employed. The significance level was set at Alpha = 0.05.

4. RESEARCH RESULTS

The research included a total of 1,141 students from three universities in Bosnia and Herzegovina: specifically, 344 students (30.4%) from the University of Mostar, 438 students (38.4%) from the University of Sarajevo, and 356 students (31.2%) from the University of Banja Luka. The gender structure of the surveyed students shows that the majority were women—745 (65.3%)—while 389 (34.1%) were men. Seven students did not respond to the gender question. More than half of the respondents are enrolled in first-cycle study programs (784; 68.4%), while 347 students (30.4%) are in the second cycle. Fifteen students did not provide an answer to this question. The majority of students come from Bosnia and Herzegovina (1,014; 88.9%), while the remaining 127 students (11.1%) are from other countries. These students were asked to indicate their country of origin, and their responses were as follows: Croatia – 58 students; Germany – 23 students; Republic of Srpska – 10 students; Turkey – 9 students; Montenegro – 9 students; India – 7 students; Spain – 4 students; Australia – 2 students; and one student each from Bangladesh, France, Hungary, Libya, and North Macedonia. An analysis of the responses to the question about student status shows that the majority are full-time students—1,035 (90.7%). Among the remaining students, 100 (8.8%) are part-time, and 6 (0.5%) are exchange students.

The reliability check of individual measurement scales showed that none of the scales had questionable internal consistency ($CA < 0.7$). The Cronbach's Alpha coefficients for all three scales indicate a satisfactory to good level of internal reliability (Table 2). An additional reliability check—examining how the removal of specific items would affect the overall scale—showed a slight increase in the coefficient for the Brand Awareness scale if item PB1 were removed (Cronbach's Alpha if Item Deleted = 0.899). However, given that the scale already shows a satisfactory/good level of internal reliability, the item was retained. For the other two scales, no improvements in internal consistency were observed when any individual items were removed. The values of each scale were calculated as the arithmetic mean of the items comprising the respective measurement scale. The mean values of the scales indicate high scores ($M > 3.5$), which, considering the rating range (min = 1; max = 5), suggest that respondents rated all scales relatively highly. The minimum values indicate that some respondents gave low ratings on the investigated scales. However, the skewness indicators and interquartile ranges suggest that the distributions are left-skewed, with most responses clustered around higher values and relatively high central tendency scores. The distribution of results for all three scales significantly deviates from normality. However, upon examining the distribution shape indicators and histograms, the deviation was deemed acceptable, and parametric tests were applied.

Table 2. Selected descriptive statistics and internal reliability of the scales

	code	M	SD	C	Q1-Q3	Skew-ness	Kurto-sis	K-S	CA	NofI
Brand awareness	PB	3.97	1.03	4.25	3.5-5	-1.009	.277	0.159**	0.880	4
Brand Image	IB	4.21	0.80	4.40	3.8-4.8	-1.301	1.728	0.163**	0.865	5
Cognitive Dimension of Behavior	COG	3.86	0.89	4.00	3.2-4.6	-0.496	-0.379	0.099**	0.857	5

M – mean; SD – standard deviation; C – median; Q1 – first quartile; Q3 – third quartile; K- S - Kolmogorov-Smirnov test; CA - Cronbach's Alpha coefficient; NofI – number of items;
**significant at the 0.01 level

Source: Author's work

Correlation analysis showed a significant relationship between all measurement scales (Table 3). Positive correlation coefficient values indicate that higher scores on one scale are associated with higher scores on another scale. Specifically, higher scores on the Brand Awareness scale are accompanied by higher scores on the Brand Image and Cognitive Dimension of Behavior scales, and higher scores on the Brand Image scale correspond with higher scores on the Cognitive Dimension of Behavior scale. The values of the correlation coefficients suggest a moderate to strong association between the analyzed variables.

Table 3. Pearson correlation coefficients between scales

	IB	COG
PB	0.550**	0.585**
IB		0.627**
**significant at the 0.01 level (2-tailed)		

Source: Author's work

To examine the impact of Brand Awareness and Brand Image on the Cognitive Dimension of Consumer Behavior, a regression analysis was conducted. The model was specified with the Cognitive Dimension of Behavior as the dependent variable, while Brand Awareness and Brand Image served as independent variables. The results of the analysis are presented in Table 4.

Table 4. Regression analysis results

	b	β	F value	R	R ²	Adjusted R ²
Constant	0.621					
PB	0.297**	0.345	518.161**	0.690	0.477	0.476
IB	0.488**	0.438				
**significant at the 0.01 level (2-tailed)						

Source: Author's work

The results indicate a significant model in which the independent variables explain 47.6% of the variance in the dependent variable (Table 4). Significance testing of the independent variables shows that both have a significant impact on the dependent variable. The positive signs of the regression coefficients associated with the independent variables suggest a positive influence (both regression coefficients are positive). The standardized beta coefficients indicate that brand image contributes more to the cognitive dimension of behavior.

5. DISCUSSION AND CONCLUSIONS

An analysis of the research results allows us to conclude that the hypotheses are supported; specifically, brand awareness has a positive impact on the cognitive dimension of student behavior when opting for a higher education institution, and brand image also positively influences this cognitive dimension. Although the existing literature still lacks a sufficient number of studies directly examining the impact of these brand equity elements on cognitive processes in the context of higher education, certain similarities support the validity of these findings. For example, Zhang (2020) confirms that brand awareness generally affects consumers' cognitive processes during decision-making, while Bohara et al. (2022) highlight the influence of brand awareness on student decisions depending on their sociodemographic characteristics. It is particularly important to emphasize that, in this study, brand image emerged as a stronger predictor of consumer behavior compared to brand awareness alone. This result is supported by cognitive consumer behavior theories, which consider brand image a

multidimensional psychological construct encompassing tradition, culture, experiences, emotions, and consumer perceptions. This complexity enables a deeper impact on the level of knowledge and perception about the institution, which is reflected in a more informed and rational decision-making process among prospective students.

A significant contribution of this study lies in the fact that the research is conducted within the context of Bosnia and Herzegovina, where the concept of branding higher education institutions has not yet been systematically developed or scientifically explored. Previous available studies have primarily focused on examining the conative dimension of consumer behavior, while the cognitive dimension has remained largely overlooked. This research addresses these scientific gaps and opens the door to a deeper understanding of student behavior in the process of selecting educational institutions. From a practical standpoint, the results underscore the importance of strategic branding for public higher education institutions, with a particular focus on the systematic development of a positive and differentiated brand image in the eyes of the target audience. It is recommended that strategies extend beyond visual identity elements (e.g., name and logo) to embrace deeper brand values and promises that communicate the institution's quality, reliability, and reputation. Moreover, Iwuchukwu et al. (2025) emphasize the importance of student experiences and participation in shaping brand perception, which is crucial for understanding the impact of brand equity on the cognitive dimension of student behavior when opting for a higher education institution. In a broader context, the findings affirm the importance of applying marketing theories and tools in the public higher education sector, pointing to the need for contextualization and adaptation of these concepts to the specifics of the local market and institutional environment. Although still developing, branding of higher education institutions in Bosnia and Herzegovina represents a key step toward strengthening competitiveness, attracting and retaining students, and positioning these institutions within the wider European higher education space.

In conclusion, it can be stated that establishing a strong, consistent, and relevant brand is an imperative in today's competitive higher education market. Institutions that successfully integrate elements of brand equity into their strategic goals and communication with target audiences secure a more recognizable long-term position and greater resilience against increasing competition at both national and international levels. Thus, this study not only expands scientific insights in the field of consumer behavior but also contributes to shaping more effective marketing strategies for public higher education institutions.

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