USING CUSTOMER-BASED BRAND EQUITY MODEL IN THE HIGHER EDUCATION CONTEXT: SIMULATING THE CURRENT UNIVERSITY'S BRAND

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Abstract. *Purpose* – the purpose of the article is to simulate the current version of a university's brand using the Customer-Based Brand Equity (CBBE) model.

Research methodology – the methodology of the paper includes analysis of theoretical sources and prior research on branding in higher education. For collecting primary data, a questionnaire based on the multi-dimensional CBBE model was used; a survey was conducted in Transport and Tele-communication Institute (Latvia). Structural equation modelling was then applied for confirmatory factor analysis of relationships between brand equity-related factors.

Findings – Statistical analysis of the conducted survey's data disclosed the importance of different brand dimensions within the CBBE model: Performance, Imagery, Judgments, Feelings, and Resonance. There is a notable difference between the perception of brand equity and associated factors by local and foreign students; it was discovered that local students have more concerns about the Imagery of the university brand, while foreign students are more focused on the Resonance factor.

Research limitations – the research was conducted within one higher education institution. Further study with a broader research base that confirms the applicability of the Keller's model in different settings would be beneficial.

Practical implications – as brand equity affects the choice of a marketing strategy adopted by a university, the information obtained through simulation of the current version of the corresponding brand is vital for developing and updating an efficient strategy aimed at accomplishing a competitive advantage in both local and international settings.

Originality/Value – the current brand's version has been successfully stimulated in higher education settings, applying the CBBE model as a scalable framework – to demonstrate how different factors related to brand equity are perceived by the university's students.

Keywords: university's brand, brand equity, CBBE model.

JEL Classification: M31.

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Introduction

Contemporary higher education institutions are under the impact of several forces associated with the globalization process (Organisation for Economic Cooperation and Development [OECD], 2009), as they contribute a lot to social development and economic growth through producing innovations, creating human capital, generating and sharing knowledge, ensuring social cohesion, etc. (OECD, 2008a, 2008b, 2015, 2017, 2018). Due to substantial changes occurring in the modern turbulent environment, universities are more focused on the needs and anticipations of their stakeholders, and students in particular, as students are now regarded as basic consumers of educational services provided by an academia (Roskosa & Stukalina, 2018, 2020).

It has resulted in increased marketing orientation of higher education institutions with more emphasis on building a strong institutional brand (Chapleo, 2009; Filip, 2012; Chapleo, 2015; Chapleo & Clark, 2016; Dean et al., 2016; Hemsley-Brown et al., 2016; Stukalina, 2019a; Clark et al., 2020). According to the results of the survey performed by Maue & Hayes (2015), for assessing the state of research-based brand strategies in the higher education sector, 76 percent of respondents (one hundred twenty five senior marketing managers of private and public higher education institutions) indicated they had implemented a brand strategy project; more than 50 percent of respondents said that they had spent more than $100,000 on the marketing activities; 31 percent of respondents said they had spent more than $200,000, and nearly all managers admitted that the investment was worth it. Traditionally, universities rely on their academic reputation, which differentiates one institution from another; a respected identity can become the university's competitive advantage. Different activities aimed at building a unique identity should become a central part of the university's strategy. Strategic brand management is critical for assisting a higher education institution to outline its place (position) in the global market; strategic brand positioning has become a necessity for accomplishing competitive advantage of an academia, in the context of generating encouraging brand attitudes (Stukalina, 2019a).

So, the applicability of the research matter is determined by the fact that university managers, who make strategic decisions, have to become more market-oriented owing to strengthened competition in the international higher education market. In this context, it is vital to cultivate and enhance a university's brand assets whose value becomes a differential impact that brand knowledge may have on consumer response to the promotion of this brand – i.e. consumer-based equity. To this extent, brand equity can be used as an essential criterion for understanding and updating marketing strategies (Keller, 2013); on its basis various marketing activities can be initiated.

1. Literature review. Branding in higher education: Current context and terminology

The literature review highlights how a market-oriented approach is widespread within the higher education sector, providing information on what marketing concepts are generally accepted in the field, and what is the current state of thinking on the research issue.

1.1. Higher education marketing: Using a market-oriented approach

As universities are becoming essential "contributors to the innovation process" and sources of human capital (League of European Research Universities, 2006), more attention is paid to modernization of the higher education area. In the context of modernization, the ability to apply innovation (implementing technology-supported pedagogic models and enhancing the choice of learning opportunities accessible by students) is vital for creating an improvement strategy in higher education (OECD, 2010, 2013, 2018). This brings about customer uncertainty and lead to bigger emphasis on local and international marketing, a widening scope of educational services and programmes.

Since marketing (external) environment is changing fast, marketing experts must consider current trends and developments for making proper modifications of their marketing strategies; a strong emphasis is put on constructing and sustaining a robust brand that "endorses" the credibility of a university in the international education marketplace (Kotler & Keller, 2016). Most marketing concepts originated in the business environment (Nicolescu, 2009). Nevertheless, as a sector with increasing competitive pressure, higher education may take advantage of traditional business theories and processes in the course of making strategic and brand management decisions (Williams & Omar, 2014). The importance of marketing in the field is linked with its more-and-more globalized, competition-driven and "marketized" nature (Elken, 2019). The massifiaction of higher education, a growing "student consumerism" in the modern revenue-generating market settings have a strong impact on all university's activities (Chapleo & O'Sullivan, 2017).

For accomplishing competitive advantage the possible benefits of applying traditional marketing theories are now recognized by higher education marketers (Hemsley-Brown & Oplatka, 2006; Hemsley-Brown & Goonawardana; 2007; Hemsley-Brown et al., 2016; Elken, 2019; Stukalina, 2019b). For example, marketing managers employ diverse marketing models and concepts (Marketing Mix, branding, etc.) which are also valid for higher education (Kotler & Fox, 1995). Though, the range of marketing activities and tools in universities is different from business on account of many internal and external factors (Białoń, 2015). Being a service area, higher education is more concentrated on the public (Williams & Omar, 2014). Thus, marketing methods used in education are more similar to those applied in services marketing and social marketing, which is determined by the fact that they are all affected by the development of social needs of their "customers" (Filip, 2012).

It should be mentioned that marketing in the higher education sector is constantly moving from "selling the institution to a more proactive role of determining future strategies" (Naudé & Ivy, 1999). Marketing strategies of a contemporary university are developed for improving its position in the international education marketplace (Białoń, 2015); promotion tools associated with the "product of universities" – their faculties and departments are in the centre of these strategies (Hall & Witek, 2015).

A marketing strategy is "framed by the response" to the following factors (Furrer, 2006): a) meeting local demands; b) capitalizing on worldwide competitive advantage. The choice of a marketing strategy is determined by the globalization-associated challenges the agenda of customer-driven education (Stukalina & Zervina, 2019), circumstances in the international

education marketp and the level of marketing knowledge obtained through the marketing environment analysis (Białoń, 2015).

Below, branding in higher education and related issues are discussed in more detail.

1.2. Some issues related to branding in the higher education sector

There exists considerable research on branding in business settings. Modern organizations have accepted the importance of endorsing the brand message both externally and internally (Judson et al., 2009). Branding is related to differentiating the service/product from rivals (Kotler & Keller, 2012, 2016), brand signifying information about this service/product (Keller, 2003, 2013). Positive brand image and reputation directly influence consumer behaviour (Kotler & Keller, 2016).

Most of the challenges that modern universities encounter are associated with branding (Woyo et al., 2014); this in turn, is directly related with changing practices, internal culture, strategies and policies (Mihajlovic et al., 2016). So modern higher education institutions have "much to gain from the benefits of successful branding"; they are progressively adopting marketing and branding strategies (Hemsley-Brown et al., 2016).

In higher education, such topics as brand identity, meaning, image, reputation, etc. are now the catchwords, because better understanding of these notions can allow brand owners communicating successfully with their numerous stakeholders (Hemsley-Brown et al., 2016). The complicated nature of the brand concept determines the existence of various approaches to this notion; the choice of a particular approach is based on the context-specific and comprehensive analysis of the brand environment, including its vision and values as communicated by managers, and their meaning for main stakeholders (Tarnovskaya, 2017).

As stated by Keller (2013), brand elements may be exposed in a different way. For example, a brand in higher education can be manifested as a tangible and intangible element (Valitov, 2014). Tangible brand elements may be also characterized as "functional" components, which, according to Kennedy (1977), can be measured. For example, university brand value can be evaluated using the so-called "Gallup-Purdue Index" (Gallup & Perdue University, 2015; Gallup & University of Virginia, 2016; Butler University & Gallup, 2018), which assesses the following aspects: purpose, financial, social, community, physical well-being. In turn, "emotional" components are associated with stakeholders' attitudes (Kennedy, 1977). Now, consumers are becoming more demanding, as they are not in quest of tangible (physical) benefits only; they are also seeking for intangible benefits (attributes), for instance, status, image, etc. – this "added value" of the product (service) is referred to as "brand equity" (Abd Aziz & Mohd Yasin, 2010).

Brand equity includes a number of "brand assets and liabilities" connected to brand name (i.e. its symbol), which may "differ from context to context" (Aaker, 1991). According to Mourad et al. (2020), recently, brand equity in the higher education sector has got noteworthy attention from managers and academics. Brand equity includes a number of dimensions: brand meaning, brand identity, brand responses, brand relationships; they are associated with brand salience, brand performance, brand imagery, consumer judgements, as well as brand resonance (Keller, 2001, 2003, 2007, 2009).

Brand identity is embodied in the unique features an organization is characterized by its culture, vision, personality, positioning, relationships, etc.; later brand identity can be transformed in some components resulting in the expected brand image: its logo, messages and actions, products, emotions, etc. (Mindrut et al., 2015). As stated by Williams and Omar (2014), brand management in an academia must ensure that the brand identity is concordant with the brand image (accepted by consumers), plus the brand "soul" accepted by staff of an organization.

Brand image can be considered as a more emotional phenomenon, being related to how consumers of educational services perceive university brand identity (Hemsley-Brown et al., 2016). A university fully depends on its image (Azoury & Daou, 2014); however brand image is volatile, as there are multiple contexts and multiple stakeholders in higher education who may have different expectations (Tarnovskaya, 2017). Forming a positive brand image (encouraging brand associations) is accompanied by building brand awareness, which is vital for creating brand equity, and would bring about the following advantages: learning, consideration, and choice advantages (Keller, 2013). Brand awareness is a very important aspect of brand equity (Keller, 1993, 2003, 2013). Brand equity possesses an "awareness dimension", being predominantly induced by marketing activities, which have a considerable potential impact on overall brand equity (Mourad et al., 2011).

Recently, the concept of brand equity has received much attention in many markets. Growing competition and economic pressures in the higher education industry have demanded institutions respond with strong unique brands, and, as a result, intensified studies in this area. Kaushal and Ali (2020) established the strong positive relationship between university brand personality and students' satisfaction and loyalty. Mampaey et al. (2020) paid a special attention to the student diversity as an important component of university brand value. Their study provides evidences of the complex structure of the branding process. Mourad et al. (2020) constructed a brand equity conceptual model and empirically investigated its components in the USA and Egypt. Comparative analysis was conducted to discover cultural dimensions in university brands and their perception. Pringle and Fritz (2019) highlighted the importance of social media for university brand management and revealed that brand premises can be used against the university. Pinar et al. (2020) illustrated brand equity dimensions by a case study for a public university in Turkey. Summarising the recent studies of brand models in the higher education industry, we state that a university brand is a complex multidimensional entity with country-, market-, and culture-specific components and accents. Thus, the emerging scientific attention to this topic has been observed.

In view of the above, based on the outcomes of the marketing environment examination, different marketing strategies can be created, which are aimed at enhancing brand awareness and increasing brand value. A selected marketing strategy will then be supported by a set of marketing tactics, or concrete marketing initiatives university marketing specialists will develop for maintaining a competitive advantage in the international education sector (Stukalina, 2019b). In the course of preparating and executing a marketing strategy, different approaches and models can be applied for interpreting and assessing marketing tactics integrated in the strategy, the choice of the appropriate model being dependent on various contextual factors (Stukalina, 2019b).

In order to demonstrate how a brand's success is linked to customers' attitudes towards the brand, a customer-based brand equity (CBEE) model can be used. As stated by Liu et al. (2017), the majority of CBBE studies deal with the following theoretical frameworks: 1) Aaker's CBBE model; 2) Keller's CBBE theory. According to Aaker (1991), the Customer-Based Brand Equity is a "multidimensional" notion, including an assortment of "brand assets and liabilities" connected with it, as well as the "name and symbol" adding to or subtracting from the value that is delivered by a particular product (service). In turn, Keller's definition (1993, 2003, 2013) puts more emphasis on the marketing aspect, relating brand equity to the distinguishing influence of customers' knowledge of a specific brand on reactions to marketing activities associated with the brand. Below, the Customer-Based Brand Equity (CBBE) model advocated by Keller (2001) is discussed.

1.3. Customer-Based Brand Equity model

Consistent with the Customer-Based Brand Equity (CBBE) model, the procedure of building a robust brand includes a few successive steps towards creating strong devotion relationship between consumers and this brand (Keller, 2001, 2003, 2007, 2008, 2009): generating the "right" brand identity, generating the "right" brand meaning, inspiring the "right" brand responses and finally, establishing a durable bond between the brand and its consumers. These "stages" can be also depicted as different levels of a brand pyramid.

In the CBBE model, the brand identity dimension is epitomized by brand salience, i.e. how recurrently and easily the brand is induced in memory under different situations (Romaniuk & Sharp, 2004). The brand meaning dimension is epitomized by brand performance and imagery – how well the brand satisfies consumers' practical needs and how they perceive its external properties (Keller, 2001). The brand responses dimension is represented by consumer judgements associated with the brand's value, trustworthiness, superiority; the brand relationships dimension was presented by consumer brand resonance associated with devotion, community and engagement – so, brand resonance becomes the result of building a strong brand (Keller, 2001).

In the branding hierarchy presented by the CBBE model, every phase depends on successfully reaching the preceding stage, the final goal being attaining brand resonance as "harmonious" relationship between this brand and customers (Kuhn et al., 2008). The model was thought to include elements of different brand models used today, meeting five criteria (Keller, 2001): it is supposed to be up-to-date, consistent, wide-ranging, well-grounded, and workable. Besides, it reflects the twofold nature of a brand – emotional and rational constituents (Keller, 2001). The CBBE model is presented below (Figure 1).

As seen from Figure 1, the CBBE model presupposes holistic understanding of a brand, integrating various brand aspects. Due to this fact, it appears to be rather flexible for using in various settings and it can become an efficient tool for addressing brand building from diverse perspectives. It may be utilized for developing more capable communication programs as part of a competitive marketing strategy (Keller, 2009). The model can also be tailored for different purposes, which makes it quite helpful for marketing managers
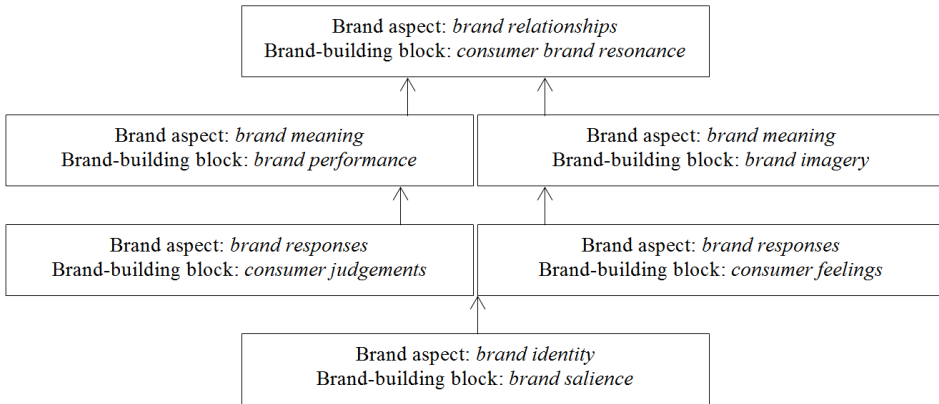
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┌─────────────────────────────────────────────────────┐
│       Brand aspect: brand relationships               │
│  Brand-building block: consumer brand resonance       │
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│ Brand aspect: brand meaning │ │ Brand aspect: brand meaning │
│ Brand-building block:      │ │ Brand-building block:      │
│ brand performance          │ │ brand imagery              │
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│ Brand aspect: brand responses │ │ Brand aspect: brand responses │
│ Brand-building block:      │ │ Brand-building block:      │
│ consumer judgements        │ │ consumer feelings          │
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         │ Brand aspect: brand identity │
         │ Brand-building block:      │
         │ brand salience             │
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Figure 1. Band aspects and associated brand-building blocks incorporated in the Customer-Based Brand Equity model (based on Keller, 2001)

who have to develop and implement a competitive marketing strategy. It can be refined and edited to suit a variety of purposes.

The research methodology and the obtained results are discussed below.

2. Research method

The methodology of the paper includes the analysis of 1) theoretical sources and prior research on marketing and branding in the higher education area; 2) the quantitative data obtained from a survey conducted in Transport and Telecommunication Institute (Riga, Latvia) – a University of Applied Sciences – in the second semester of the 2019/2020 academic year.

The aim of the empirical research was to simulate the current version of a university's brand using the Customer-Based Brand Equity (CBBE) model. Brand equity being a multi-faceted concept, there exist several approaches to this concept. The theoretical framework for this research is based on the brand equity model suggested and refined by Keller (2001, 2003, 2007, 2009).

In business, the CBBE model is usually employed to demonstrate how a brand's achievement can be related to consumers' attitudes to this brand (Keller, 2001). In the paper, the CBBE model was applied in the higher education settings.

The first step of the research involved designing a questionnaire based on the multi-dimensional CBBE model. The questionnaire presented an advanced version of the survey form developed by Roskosa and Stukalina (2020) for examining students' perceptions of different facets of the university's brand. The purpose of the survey was to explore students' attitudes concerning their university's brand equity dimensions.

Then the questionnaire was distributed among the 2nd- and 3rd-year local and foreign (in equal proportion) students of Transport and Telecommunication Institute (TSI), who represented the whole range of study directions offered by TSI – Business and Management, Information Technologies, Logistics and Aviation Engineering. The total number of

distributed questionnaires was 304, from which 248 were returned: 126 from local students, and 122 – foreign students.

The questionnaire included 22 items (statements) split into four sections, each section dealing with one of the brand aspects included in the Keller's model (represented by certain brand-building blocks); the sections are presented below.

1. Brand salience (1 item): I am well-aware of the University's brand, its personality and values.

2. Brand performance (4 items) and imagery (4 items) associated with the brand meaning dimension:
    – The brand is exclusive compared to other universities in Latvia, with which it competes.
    – The brand satisfies well the basic needs of the service category (educational services).
    – The University's brand completely meets my requirements.
    – The brand is reliable in terms of quality of educational services.
    – The people, whom I respect and admire, like this brand.
    – Thinking of the brand can evoke pleasant reminiscences.
    – The words "up-to-date" and "upper-class" can be used to describe the brand.
    – The design aspects of the brand are eye-catching and memorable.

3. Consumer judgements (5 items) and feelings (4 items) associated with the brand responses dimension:
    – The providers of the brand are experienced and supportive.
    – The providers of this brand care about my sentiments and attitudes.
    – The providers of this brand understand my needs and expectations.
    – The providers of the brand are inventive.
    – The providers of the brand are fast in learning.
    – The brand gives me a feeling of social approval.
    – The brand gives me a feeling of self-respect.
    – The brand has a respect for keeping my personal identity.
    – The brand has a respect for maintaining my professional identity.

4. Consumer brand resonance (4 items) associated with the brand relationships dimension:
    – I feel loyal to the brand.
    – I feel an emotional bond with others who use this brand.
    – I want to know more about the brand and I always follow the news about it.
    – I would certainly recommend the brand to others.

The students' responses were a three-point rating scale: "disagree"; "neither agree nor disagree", "agree". The obtained data were then processed using Excel tools and Mplus statistical package.

Structural equation modelling was applied for confirmatory factor analysis of relationships between brand equity-related factors. Recently this approach has been successfully utilized for analyses of higher education institutions' brands and their components (Casanoves-Boix et al., 2016).

The constructed measurement model is bi-factor: each response item loads on the primary dimension of interest (brand equity) and no more than one secondary dimension (performance, imagery, judgements, feelings, and resonance). Factors loadings were estimated by the weighted least squares means and variance adjusted method and analysed in the standardised

form. The model's goodness-of-fit was estimated using four popular approaches: chi-squared statistic, root mean square error of approximation (RMSEA), comparative fit index (CFI), as well as Tucker-Lewis index (TLI). The regular test and corresponding p-value were applied for testing statistical significance of the chi-squared statistic and the predefined thresholds were applied for other indices for identifying satisfactory goodness-of-fit: RMSEA < 0.08, CFI > 0.9, TLI > 0.9.

All input variables were handled as ordinal categorical (three-point Likert scale is for all survey questions), so the polychoric correlation technique was applied for estimating relationships between them. It was assumed the possibility of significant differences in the HEI's brand perception between local and foreign students.

Thus, the structural equation model was separately estimated for three samples: foreign students, local students and the pooled sample. The conducted analysis allows identifying similarities and differences of factors loadings between local and foreign students.

3. Results and discussion

3.1. Descriptive statistics

Radar charts were chosen as a graphical method of displaying multivariate data; five quantitative variables are represented on the five quantitative axes. The axes denote the following categories: consumer judgements (value 1) and feelings (value 2), performance (value 3), imagery (value 4), resonance (value 5), which are brand-building blocks that are incorporated in the CBBE model.

Using the charts it was possible to compare the respondents' groups – the attitudes of local and foreign students towards the university's brand. Figure 2 indicates the number of local and foreign students who agreed with the twenty-two statements formulated in the questionnaire, disagreed with the statements, or chose "neither agree nor disagree" responses.

The above radar charts show the categories, which are more pronounced than others. As seen from Figure 2 foreign students more often chose "neither agree nor disagree" responses; local students more frequently chose "agree" responses. In turn, for the "disagree" category, foreign students more often disagree with the statements related to their brand resonance, while local students – with the statements related to their brand imagery.
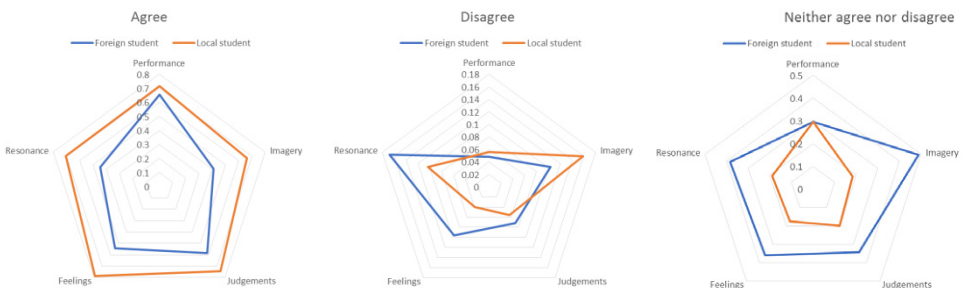

Figure 2. University brand-building elements as perceived by foreign and local students
(source: authors' elaboration)

3.2. Model's summary

Summary of the model's fit indices is presented in Table 1.

Table 1. Models' fit summary (source: based on the obtained data)

	Complete sample	Local students	Foreign students
Chi-Square statistic (p-value)	314.01 (0.000)	229.801 (0.012)	254.566 (0.000)
RMSEA	0.053	0.044	0.056
CFI	0.910	0.912	0.898
TLI	0.897	0.899	0.884

The chi-squared test indicates statistical validity of the factor structure (the null hypothesis about absence of factor loadings is rejected). RMSEA, CLI, and TLI values indicate borderline performance of the structural model for all samples: RMSEA values are smaller than the acceptable threshold (0.08) and close to the good threshold (0.05). CFI and TLI values are close to the acceptable 0.9 threshold. Summarising the model fit statistics, it can be concluded that the model satisfactorily meets the recommended fit requirements and can be used for further analysis of factor loadings.

Figure 3 represents the general structure of the structural equation model with standardised factor loading for the pooled sample.

The structure of factors is research design-based, and performance of the model fit confirms this structure. All 5 factors of the secondary dimension significantly load to the brand equity: the smallest standardised loading (0.85) is identified for the Performance factor, while loadings of other factors exceed 0.92.
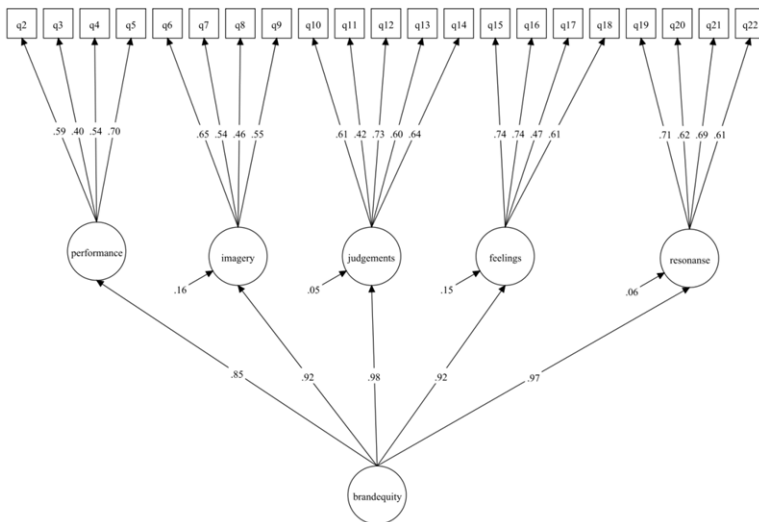

Figure 3. Diagram of the resulting structural equation model
(source: authors' elaboration based on the obtained data)

First-level factors loadings are also significant for all input variables (questions) and generally uniformly distributed. The most notable deviations are:

- Question 5 (reliability in terms of quality of educational services) has the highest loading for the Performance factor (0.70);
- Question 11 (care about student's sentiments and attitudes) has the lowest loading for the Judgements factor (0.42);
- Question 17 (keeping student's personal identity) has the lowest loading for the Feelings factor (0.47).

At the next step, the differences of the structural equation model for samples of local and foreign students were analysed. Firstly, it was noted that the model fit is slightly better for local students, which is probably related with a larger number of uncertain answers among foreign students (see Figure 2). Standardised factor loadings for local and foreign students' samples and the pooled sample are presented in Table 2.

Table 2. Model's factor loadings (source: based on the obtained data)

	Standardised factor loadings (standard errors are provided in brackets)		
	Complete sample	Local students	Foreign students
Performance by			
Q2. The brand is exclusive compared to other universities in Latvia, with which it competes	0.591 (0.076)	0.639 (0.101)	0.538 (0.094)
Q3. The brand satisfies well the basic needs of the service category	0.404 (0.082)	0.357 (0.125)	0.496 (0.093)
Q4. The University's brand completely meets my requirements	0.539 (0.073)	0.620 (0.103)	0.471 (0.090)
Q5. The brand is reliable in terms of quality of educational services	0.696 (0.068)	0.871 (0.090)	0.518 (0.093)
Imagery by			
Q6. The people, whom I respect and admire, like this brand	0.645 (0.061)	0.552 (0.104)	0.699 (0.073)
Q7. Thinking of the brand can evoke pleasant reminiscences	0.535 (0.068)	0.409 (0.109)	0.668 (0.070)
Q8. The words "up-to-date" and "upper-class" can be used to describe the brand	0.460 (0.079)	0.495 (0.112)	0.410 (0.115)
Q9. The design aspects of the brand are eye-catching and memorable	0.552 (0.067)	0.511 (0.111)	0.553 (0.086)
Judgements by			
Q10. The providers of the brand are experienced and supportive	0.612 (0.059)	0.540 (0.107)	0.595 (0.072)
Q11. The providers of this brand care about my sentiments and attitudes	0.416 (0.076)	0.356 (0.132)	0.409 (0.090)
Q12. The providers of this brand understand my needs and expectations	0.732 (0.050)	0.647 (0.100)	0.704 (0.062)
Q13. The providers of the brand are inventive	0.602 (0.061)	0.779 (0.096)	0.415 (0.089)
Q14. The providers of the brand are fast in learning	0.637 (0.063)	0.783 (0.087)	0.488 (0.092)

	Standardised factor loadings (standard errors are provided in brackets)		
	Complete sample	Local students	Foreign students
Feelings by			
Q15. The brand gives me a feeling of social approval	0.740 (0.052)	0.873 (0.090)	0.577 (0.072)
Q16. The brand gives me a feeling of self-respect	0.738 (0.055)	0.743 (0.094)	0.704 (0.068)
Q17. The brand has a respect for keeping my personal identity	0.468 (0.067)	0.354 (0.109)	0.468 (0.076)
Q18. The brand has a respect for maintaining my professional identity	0.607 (0.061)	0.685 (0.086)	0.485 (0.089)
Resonance by			
Q19. I feel loyal to the brand	0.708 (0.054)	0.735 (0.084)	0.634 (0.074)
Q20. I feel an emotional bond with others who use this brand	0.621 (0.059)	0.698 (0.086)	0.488 (0.087)
Q21. I want to know more about the brand and I always follow the news about it	0.695 (0.058)	0.765 (0.085)	0.709 (0.071)
Q22. I would certainly recommend the brand to others	0.613 (0.061)	0.517 (0.107)	0.614 (0.074)
Brand equity by			
Performance	0.853 (0.061)	0.762 (0.088)	1.076 (0.084)
Imagery	0.917 (0.062)	0.992 (0.142)	0.859 (0.067)
Judgements	0.976 (0.036)	0.829 (0.073)	1.095 (0.049)
Feelings	0.920 (0.041)	0.824 (0.067)	1.025 (0.064)
Resonance	0.972 (0.037)	0.893 (0.071)	1.038 (0.049)

Factor loadings for local and foreign students are generally consistent. The most notable differences are as follows:

- the Imagery factor has the highest loading for local students (0.992, while other factor loadings are smaller than 0.893) and the lowest loading for foreign students (0.859, while other factor loadings are higher than 1.025);
- For the Performance factor, question 5 (reliability in terms of quality of education services) has the highest loading for local students (0.871) and moderate loading for foreign students (0.518); oppositely, question 3 (satisfying basic needs of the educational service category) has significantly higher loading for foreign students;
- For the Imagery factor, question 6 (opinion of respected persons) and question 7 (pleasant reminiscences) have higher loadings for foreign students;
- For the Judgements factor, question 13 (inventive brand) and question 14 (feeling of social approval) have higher loadings for local students;
- For the Feelings factor, question 15 and question 18 have higher loadings for local students;
- For the Resonance factor, question 20 has higher loadings for local students.

Conclusions

In the paper, an attempt to simulate the current version of a university's brand, using the Customer-Based Brand Equity (CBBE) model, was made. The Customer-Based Brand Equity model was applied as a scalable framework to demonstrate how different factors related to brand equity were perceived by university students.

Statistical analysis of the conducted survey's data disclosed the importance of different brand dimensions within the CBBE model: Performance, Imagery, Judgments, Feelings, and Resonance. The estimated structural equation model supports representation of the university brand equity as a combination of these factors and allows discovering factor-specific aspects.

In general, the obtained results are in line with recent studies in this area: CBBE model dimensions collectively influence on university brand perception. This confirms that the analyzed brand model is applicable in different countries and socio-economic environments. The main contribution of this study is that there is a notable difference between the perception of brand equity and associated factors by local and foreign students. It was discovered that local students have more concerns about the Imagery of the university brand, while foreign students are more focused on the Resonance factor, which lead to significant implications for the university senior management. In addition, the survey revealed specific aspects of the brand equity factors: for example, the highest importance of quality of educational services for the Performance factor and the modest importance of care about students' sentiments for the Judgements factor.

So, the article provides some insights into the way local and foreign students perceive their university's brand (that is both local and international perspectives were considered), which would be of interest for the professionals working in the higher education sector, as well as for those seeking a career in higher education administration. Brand equity affects the choice of a marketing strategy adopted by a university, so the information obtained in the course of simulating the current version of the corresponding brand is vital for developing and updating an efficient strategy aimed at accomplishing a competitive advantage in both local and international settings.

The research was conducted within one higher education institution, so the results may represent some specific factors, which are not illustrative of all universities. Another limitation of the research is its focus on students' perception only, while other stakeholders (secondary school graduates, their parents, alumni, etc.) are not taken into consideration. Further study with a broader research base that confirms the applicability of the Keller's model in different settings would be beneficial. A sufficiently large sample size would extend the range of possible data and would form a better representation for analysis.

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