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Tulay Girard

The Pennsylvania State University-Altoona, tug1@psu.edu

Musa Pinar

Valparaiso University, musa.pinar@valpo.edu

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Importance-Performance Gap Analysis of the University Brand Equity Dimensions

Tulay Girard, The Pennsylvania State University-Altoona, tug1@psu.edu
Musa Pinar, Valparaiso University

Abstract - This study examines the gaps between the importance students place on brand equity dimensions and their perceptions of how well their university performs on each dimension. It also assesses if the brand equity dimensions differ based on student demographics including gender, class level, and their living arrangement. Data were collected from a university in the Midwestern U.S. from undergraduate students. The findings reveal significant gaps between the importance and performance perceptions of students, and that females, students living on campus, and freshman require special attention. Implications for university management and stakeholders are discussed.

Keywords - Importance-Performance Gap Analysis, University Brand Equity

Relevance to Marketing Educators, Researchers and/or Practitioners - The study identifies the differences (gaps) that are beneficial for university administrators to know and provides insights about branding strategies.

Introduction

A brand is considered the most valuable asset of any business (Aaker, 1991; 2003; Kapferer, 1997; Blackett, 1993) and a source of information. It provides consumers with a signal or a promise to be delivered (Erdem and Swait, 1998), and serves as a tool for differentiation and eases the consumer choice process by creating distinctiveness (Gabbott and Hogg, 1998). As a result, the brand is increasingly recognized as an important determinant of consumer choice, especially in the service industries (Turley and Moore, 1995). Moreover, research indicates that a strong brand benefits from consumer knowledge and loyalty, resulting in sustainable profitable customer relationships (Aaker, 1996; Keller, 1993; 2008), ultimately creating brand equity as a key indicator of brand performance (Christodoulides *et al.*, 2015; Cobb-Walgren, Beal, & Donthou, 1995). Brand equity was described by Keller (2008) as the value of a brand consumers perceive that affects how consumers respond to a brand over time. Aaker (1991) conceptualized brand equity as a multi-dimensional concept that is comprised of the dimensions of brand awareness, brand associations, perceived quality, and brand loyalty.

Over the years, several studies focused on marketing and branding of higher education institutions (HEIs). Most of the early studies seem to focus on promotional and branding features (Argenti, 2000; Jevons, 2006; Bunzel, 2007). Ivy (2008) identified the factors important for students in selecting a business school, such as academic program reputation, tuition, brochures, interactions among faculty, students, staff, and electronic media, publicity. Other studies (Cowell, 1982; Nicholls *et al.*, 1995) have focused on the importance of interactions among faculty, students, staff, and community in the marketing of universities. Additionally, facilities were found

to be important for university branding (Price *et al.*, 2003). However, there have been questions regarding the effectiveness of these promotional activities (Jevons, 2006), and the increased use of common mottos and taglines (Goldney, 2008) for branding universities. While these studies provided some insights about the importance of these factors for marketing and branding of university, they do not offer any indication how well universities perform on these factors in meeting the expectations. In addition, Hemsley-Brown *et al.* (2016) pointed out that various studies have increased the understanding of brand by examining different areas of higher education. The topic areas addressed included brand meaning (e.g., Dean *et al.*, 2016; Wilson and Elliot, 2016), brand image (e.g., Rauschnabel *et al.*, 2016), the impact of educational brand on students, alumni, employees (e.g., Naidoo *et al.*, 2014, Saurombe *et al.*, 2017), brand identity (e.g., Balaji *et al.*, 2016; Palmer *et al.*, 2016), and brand reputation (e.g., Plewa *et al.*, 2016).

Ng and Forbes (2009) suggest that the student learning experience is the focal point in core value-creation for university branding. Based on the branding literature, Pinar *et al.* (2014) identified the core value-creation activities (factors) that are critical for creating a strong university brand and brand equity. The core value creation activities are supplemented with the supporting value-creation activities (Ng and Forbes, 2009) as part of the student university learning experience. Pinar *et al.* (2011) also identified supporting activities (factors) that are relevant for creating university branding. The application of the core and supporting factors to university branding is consistent with and relevant to the core and supporting associations for services (Gronroos, 2007; Kimpakorn and Torquer, 2010). In fact, supporting activities help to differentiate and add value to services brands (Kimpakorn and Torquer, (2010). Pinar *et al.* (2014) developed and validated the measurement scale for core and supporting brand equity dimensions that were important for creating a strong university brand. However, they did not provide any evidence regarding the performance of these brand equity dimensions to determine how well students' expectations were or were not met in creating a strong university brand.

Therefore, given that both core and supporting factors are established university brand equity dimensions, this study aims to examine how important students perceive the core and supporting brand equity dimensions (as expectations) for creating a strong university brand and brand equity and how well a university performs on these dimensions in meeting students' expectations. Any difference will indicate an existence of gaps in meeting student expectations that, if not remedied, could have an adverse effect on developing a strong university brand and brand equity. Prior studies regarding gap analysis (Parasuraman, Zeithaml, and Berry, 1985; Brown and Swartz, 1989) indicate the importance of managing the gaps for long-term success of the brands. This study identifies the existence of any gaps, which could be beneficial for university administrators to know, and provides insights about branding strategies. More specifically, while identifying these gaps offer an opportunity to determine the deficient areas, the size of the gaps allows the university administrators to identify and prioritize the most urgent branding areas to be addressed in creating a strong university brand and brand equity.

Literature Review

Brands, as valuable assets and sources of information (e.g., Aaker, 1991; Kapferer, 2012; Keller, 1993), can help firms and organizations like HEIs gain a competitive advantage stemming from being authentic (Chaharbaghi and Lynch, 1999) and difficult to imitate (Kor and Mahoney, 2005),

all of which could contribute to financial performance (Kim *et al.*, 2003; Ponsonby-McCabe and Boyle, 2006). At the same time, given that students' learning and educational experience is the focus of the core value creation, HEIs provide opportunities for students to enhance their knowledge and develop employability skills for their future careers (Khanna *et al.*, 2014). Because of the growing domestic and global competition, administrators of HEIs have come to a realization that the traditional branding and marketing efforts such as advertising and the use of mascots, logos, mottos do not suffice to build strong university brands (Argenti, 2000; Bunzel, 2007; Jevons, 2006). As a result, decision makers in HEIs were forced to develop better and more effective marketing and brand strategies (Whisman, 2007), and focus on branding through differentiation of their HIEs (Jevons, 2006) in response to ever increasing competitive challenges. In order to differentiate, HEIs across the world have focused on developing branding strategies (Hemsley-Brown and Goonawardana, 2007, Pinar *et al.*, 2014), and have become increasingly "marketing oriented" treating students as "consumers" (Chen, 2008; Mazzarol and Soutar, 2008). Because a strong brand can play an important role as a risk reliever by giving consumers confidence in their decision making and increasing trust (Erdem and Swait, 1998), creating a strong brand will be beneficial for HEIs in current dynamic global marketplace.

Several studies have examined various aspects of higher education that students found important for promoting universities. For example, Ivy (2008) identified the attributes that are important for students when selecting a university's business school are the academic program, reputation, tuition, and prospectus, interactions with faculty, other students, staff, and promotion and premiums (i.e., various offerings). In addition, Price *et al.* (2003) point out the significance of facilities. Other studies (Gatfield *et al.*, 1999; Gray *et al.*, 2003; Mazzarol, 1998; Price *et al.* 2003) have found that the academic instruction and learning environment, facilities, career prospects for graduates, access services, campus life, and reputation are the most influential aspects in creating university brand equity. These studies provide insights about factors relevant for marketing and branding of the higher education institutions. However, the effectiveness of the promotional practices as external branding efforts has been questioned (Bunzel, 2007; Jevons, 2006). In addition, they have not been examined how well the student expectation were met by comparing the performance of university on these factors to identify if there were any gaps between importance and performance of these factors.

Some of the studies have explored the various topics related to university branding. A study by Palmer *et al.* (2016) found that recalled academic and social experiences significantly influence brand identification; therefore, brand identification is a good predictor of alumni brand loyalty and brand support. These findings are in line with those with regard to the importance of students' academic and learning experience for university branding (Ng and Forbes, 2009, Pinar *et al.*, 2014). Dean *et al.* (2016) who investigated how HEIs' employees co-create brand meaning confirmed that the employees play a critical role in creating brand meaning and delivering the brand promise. A study by Dennis *et al.* (2016) found that perceived quality and reputation cause feelings of attachment, which lead to satisfying relationships and building brand equity for HEIs in United States. Based on their research, Parameswaran and Glowacka (1995) suggest that HEIs need to develop and/or maintain a distinct image to create a competitive advantage because such a distinct image is likely to impact a student's willingness to apply for admission. This is because the brand image of a university plays an important role in attitudes toward the HEIs (Landrum *et*

al., 1999; Yavas and Shemwell, 1996). Additionally, a research by Mourad *et al.* (2011) found that image-related determinants were the major drivers of brand equity.

Brand Equity and Branding Gap

Keller (1993) provided the definition of brand equity as the positive differential effect that consumer knowledge of the brand name has on their responses to the product or service. A strong brand leads to a higher level of consumer brand awareness and brand loyalty, which lays the foundation for a profitable customer relationship that leads to creating brand equity (Aaker, 1996; Keller, 1993, 2008). Brand equity has been widely accepted as a key indicator of marketing performance, an edge for competitive advantage, and a critical factor for business success (Cobb-Walgren *et al.*, 1995; Christodoulides *et al.*, 2015). Aaker (1991) originally conceptualized brand equity as a multidimensional concept that includes brand awareness, brand associations, perceived quality, and brand loyalty. Besides Aaker's (1991) four brand equity dimensions, brand equity has also been operationalized including brand personality (Aaker 1997), organizational associations (Buil *et al.* 2008) and brand trust (Aekura and Mat, 2008; Atilgan *et al.* 2005; Christodoulides *et al.* 2006; Liao and Wu, 2009).

The study by Pinar *et al.* (2014) show that, of the core brand equity dimensions, perceived quality (all related to faculty) was the most important brand equity dimension, followed by university reputation and emotional environment, brand loyalty and brand awareness dimensions for creating a strong university brand. Their findings emphasize that the relevance of these core factors in a strong university brand. In addition, Pinar *et al.* (2014) found that library services were the most important supporting brand equity dimensions in creating a strong university brand, followed by student living, career development, and physical facilities. Their results provided insights about the perceived importance of university brand equity dimensions as expectations of students (customers), however, these results do not indicate how well the university performed on the core and supporting brand equity dimensions in meeting student expectations. More specifically, in order to design successful and effective branding strategies, it is important for universities to know if they are any difference or gaps between the perceived importance as expectations and performance of the brand equity dimensions. An existence of gap(s) for any of the brand equity dimensions could lead to further weakening of the university brand equity.

Given that university education as a service, one of the major challenges for services branding is to minimize the difference between the consumer perception of university brand and its branding efforts (Pinar *et al.*, 2016). This could lead to brand perceived expectation - performance GAP, which means any inconsistency or discrepancy between the intended branding identity and the consumers' experience with the service-brand. While there are several theoretical frameworks to explain the service quality GAPS, the best-known GAP model developed by Parasuraman, Zeithaml, and Berry (1985). Known as PZB GAP model, it identifies five service quality GAPS of knowledge, standards, delivery, communication, and expected-perceived service gap. In addition, Brown and Swartz (1989) proposed a three part GAP model, where GAP 1 represents customer expectations–customer experiences, GAP 2 represents customer expectations–management/contact personnel perceptions of customer expectations, and GAP 3 represents customer experiences–management/contact personnel perceptions of customer experiences. These GAP models, especially PZB model, have served as the main foundations for

most of the service quality GAP research. According to by Parasuraman et al. (1985) GAP model, the customer gap is most important one, which reflects the difference between the service level customers expect and their perceptions of the brand performance based on the service received. Understanding and managing these gaps is essential for the long-term health and success of a service brand, including building brand equity. In this study, customer gap based on the student perceptions of importance and performance of the university brand equity dimensions are examined.

Study Objectives and Contribution

Recently, several studies have examined the various aspects of university branding and factors relevant for developing a strong university brand (e.g., Gray *et al.*, 2003; Khoshtaria, Datuashvili, and Matin 2020; Pinar *et al.*, 2011, 2014, 2020; Tran, Nguyen, Sa Do, & Nguyen 2020). While these studies provided some insights about different aspects of university branding and consumer-based brand equity (CBBE) dimensions, these studies did not address how well the university brands' performance meet the expectations of their target market. To fill this void in the university branding literature, this study is designed to examine the expectations and performance of CBBE dimensions for a university to compare to determine an existence of any gaps for CBBE dimensions (Figure 1). To accomplish this, perception of importance of CBBE dimensions are compared with perceived performance of these dimensions. The specific research objectives (ROs) are to:

- RO 1. Evaluate the importance and performance of university brand equity dimensions and determine if any significant gaps exist between student perceptions of importance (expectations) and performance of the university brand equity dimensions.
- RO 2. Determine if student perceptions of importance (expectations) and performance of brand equity dimensions differ by student demographics including gender, living arrangement, and class standing.
- RO 3. Discuss the implications and relevance of the findings for developing university branding.

Figure 1. Brand Equity GAP: Comparing Importance vs Performance

| |
|--|
| <p><u>Brand Equity GAP = Importance – Performance</u></p> <p><u>Core Factors</u></p> <ul style="list-style-type: none">• Brand awareness• Brand associations• Perceived quality• Brand loyalty• Brand emotion• Brand trust• Learning environment• University Reputation <p><u>Supporting Factors</u></p> <ul style="list-style-type: none">• Dining services• Library services• Residence hall |
|--|

Methodology

Survey and Measurement Scales

To examine the research objectives, a survey instrument was adopted from Pinar *et al.* (2014). Compiling from prior literature, Pinar *et al.* (2014) had originally developed and validated the core and supporting university brand equity scale measures. Various studies have adopted, successfully used (e.g., Hayford, 2016), tested them, and confirmed the construct and discriminant validity of the measurements (e.g., Pinar *et al.*, 2020; Khoshtaria *et al.*, 2020). Research by Pinar *et al.* (2014) and Pinar *et al.* (2020) found that the Cronbach's alphas for reliability of both core and supporting dimensions were above .70, indicating internal consistency and reliability of the measurements (Hair *et al.*, 2014). The validated core university brand equity CBBE dimensions include brand awareness, perceived quality, brand association, brand trust, learning environment, emotional environment, university reputation, and the supporting university brand equity dimensions include library services, dining services, residence hall and learning environment. Because the study aims to compare the student perceptions of importance (expectations) and performance with regard to the university CBBE dimensions, two separate surveys were prepared. One of the surveys used the importance scale to measure expectations and other one used an agreement scale to measure performance. To make sure that scale items were clear and convey the intended meanings, the scale measures of both surveys were pretested with students, which are the target population of this study. These pretests improve the survey questions and established the face validity of the factors used in both surveys (Churchill and Iacobucci, 2005). The scale items for expectations were measured with a 7-point importance scale ranging from 1=very unimportant to 7=very important, and the scale items for performance were measured with a 7-point agreement scale ranging from 1=strongly disagree to 7=strongly agree. Finally, both surveys included demographics questions of gender, age, class level, college, and living on/off campus.

Data Collection and Sample Characteristics

Data for both surveys were collected at a university located in the Midwestern section of the United States in different semesters. To achieve representation for both of the survey data sets, a purposive sampling method was utilized including freshmen, sophomore, junior, and senior level students from thirty classes of different sizes and various colleges including business, engineering, nursing, and arts and sciences. To assure that students did not complete the same survey twice, students were instructed not to participate if they had already completed it. After eliminating improperly completed surveys, we obtained 440 usable importance surveys and 266 usable agreement surveys. In order to ensure that the survey was completed properly, trained students were asked to read the instructions vocally before collecting the completed surveys.

The respondent profiles in Table 1 show that 48.5% of all respondents were male, 51.5% were female, 53.2% of the respondents of the importance survey were male and 46.8% were female, and 41.0% of the respondents of the agreement survey were male and 59.0% were female. As intended and shown in Table 1, the student class standing was equally dispersed ranging from 20.7% to 26.7% for both importance and agreement surveys. About 65 percent of respondents resided on-campus and 35 percent resided off-campus. The average age was 21 years old.

Table 1. Selected Demographic Profiles of Respondents

| Demographics | All respondents | | Importance survey | | Agreement survey | |
|---------------------------|-----------------|------------------|-------------------|------------------|------------------|------------------|
| Gender | n | Percent | n | Percent | n | Percent |
| <i>Male</i> | 343 | 48.5 | 234 | 53.2 | 109 | 41.0 |
| <i>Female</i> | 364 | 51.5 | 206 | 46.8 | 157 | 59.0 |
| Total | 707 | 100.0 | 440 | 100.0 | 266 | 100.0 |
| Class Standing | n | Percent | n | Percent | n | Percent |
| Freshman | 168 | 23.8 | 113 | 25.8 | 55 | 20.7 |
| Sophomore | 184 | 26.1 | 117 | 26.7 | 67 | 25.2 |
| Junior | 175 | 24.8 | 108 | 24.7 | 67 | 25.2 |
| Senior | 164 | 23.2 | 94 | 21.5 | 69 | 25.9 |
| Graduate | 14 | 1.9 | 6 | 1.3 | 8 | 1.0 |
| Total | 705 | 100.0 | 438 | 100 | 266 | 100 |
| Living Arrangement | n | Percent | n | Percent | n | Percent |
| On campus | 449 | 63.6 | 288 | 65.5 | 161 | 60.5 |
| Off campus | 257 | 36.4 | 152 | 34.5 | 105 | 39.5 |
| Total | 706 | 100.0 | 440 | 100.0 | 266 | 100.0 |
| Age | Mean | Std. Dev. | Mean | Std. Dev. | Mean | Std. Dev. |
| | 20.9 | 2.66 | 20.7 | 2.8 | 20.9 | 2.6 |

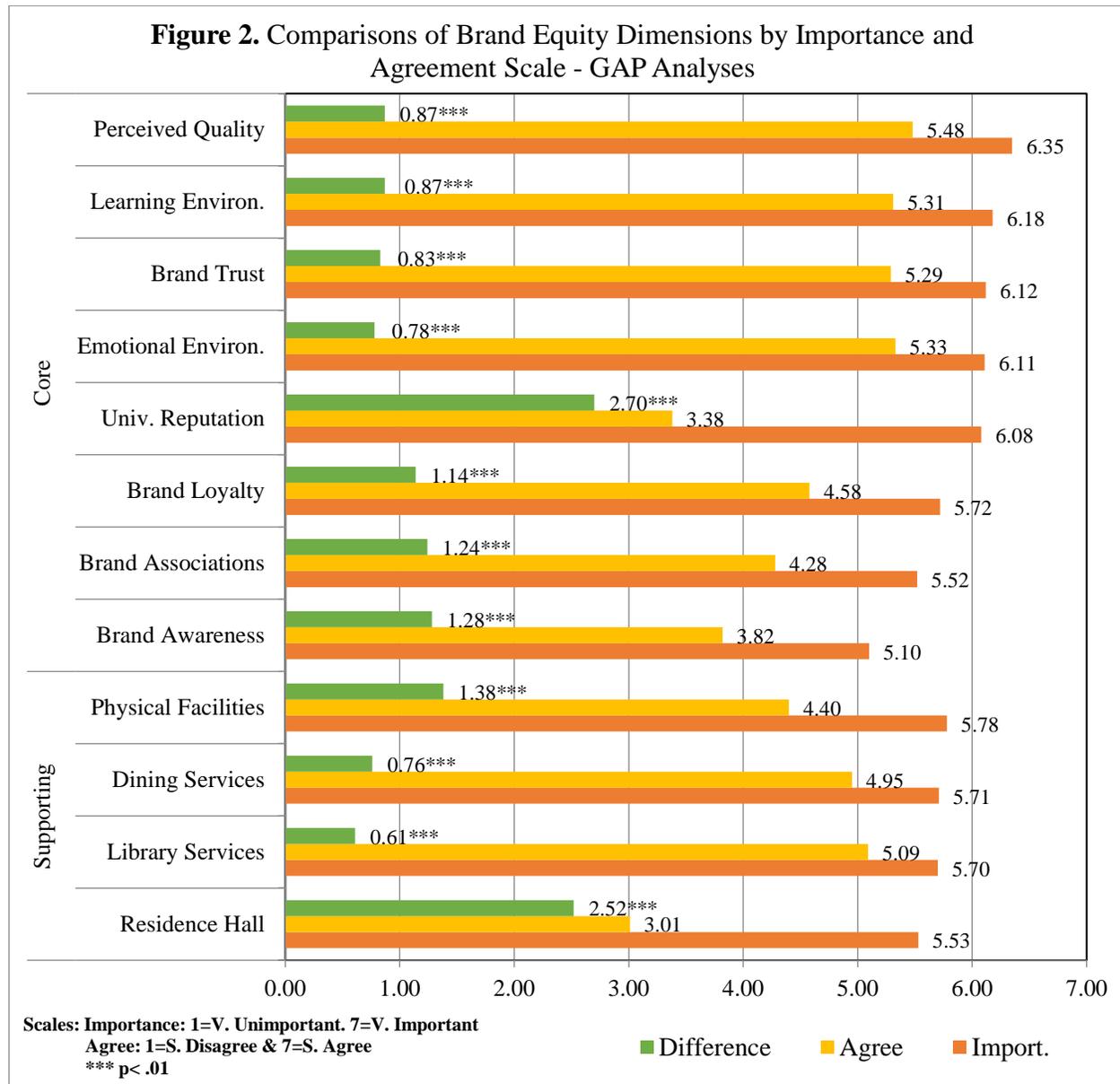
Analyses and Results

To accomplish the first research objective (RO), we compared the mean values of the summated core and supporting items. The mean scores of all perceived importance (expectations) and agreement (performance) factors, and the differences between them are presented in Figure 2. The mean scores for importance indicate that perceived quality is the most important core brand equity dimension for creating a strong university brand and brand equity, followed by learning environment, brand trust, emotional environment, university reputation, brand loyalty, brand associations, and brand awareness. Physical facility is the most important supporting brand equity dimension, followed by dining services, library services, and residence hall.

Concerning the agreement scale for university performance of the CBBE dimensions, the mean scores in Figure 2 show that perceived quality has the highest performance score among the core dimensions, followed by emotional environment, learning environment, brand trust, brand loyalty, brand associations, brand awareness, and university reputation. Concerning supporting dimensions, the mean performance scores indicate that library services have the highest score, followed by dining services, physical facilities, and residence hall.

The independent samples t-test also shows that both core and supporting dimensions are significantly different at $p < .01$ level. For the Midwestern university under study, the university reputation dimension has the largest difference (gap) among the core dimensions, followed by brand awareness, brand associations, brand loyalty, perceived quality, learning environment, brand trust and emotional environment. As for the supporting dimensions, residence hall has the largest difference (gap), followed physical facilities, dining services and library services. The perceived importance of the brand equity dimensions indicates the expectations of students from the university. The bigger the gap represents how poorly the university is meeting the student

expectations in each of the CBBE areas that impact university branding. Because all of the gaps are statistically significant at $p < .01$ level, the findings have important implications.



The RO2 aimed to determine whether student perceptions of importance (expectations) and performance of brand equity dimensions differ by student demographics including gender, living arrangement, and class standing. The independent sample t-tests for the gender and living arrangement, and the one-way ANOVA test with a Tukey HSD test for the class standing categorical variable were performed with the eight university CBBE dimensions as the dependent variables using the importance and performance datasets separately in SPSS. Table

2 and Table 3 summarize the significant differences found in the university CBBE dimensions by gender, living arrangement, and class standing.

The female students were found to place significantly more importance on learning environment at $p < .05$ level, and emotional environment, library services, dining services and residence halls at $p < .01$ level than the male students. In addition, students who live on campus significantly place more importance on dining services and residence halls at $p < .01$ level than those who live off campus (Table 2). The ANOVA test revealed that freshman students consistently placed significantly more importance on quality, brand trust, learning environment, physical facilities, library services, dining services, and residence halls than the upper-class level counterparts at $p < .05$ and $p < .01$ levels. No significant differences were found based on gender, living arrangement, or class standing with regard to student perceptions of the university performance of the core or supporting CBBE dimensions (Tables 2 & 3).

Table 2. Significant Differences in the Student Perceptions of Importance and Performance of University CBBE Dimensions by Gender and Living Arrangement

| | Importance | | Performance | | | |
|------------------|---|----------------|-------------------------------|----------------|--|----------------|
| | Gender n=232, n=203 | t-value | Gender n=106, n=152 | t-value | | |
| Learning Environ | Male=6.06 | -2.49** | | Not sig. | | |
| | Female=6.29 | | | | | |
| Emotion Environ | Male=5.97 | -2.80*** | | | | |
| | Female=6.25 | | | | | |
| Library Services | Male=5.49 | -4.29*** | | | | |
| | Female=5.95 | | | | | |
| Dining Services | Male=5.58 | -2.82*** | | | | |
| | Female=5.87 | | | | | |
| Residence Hall | Male=5.35 | -3.45*** | | | | |
| | Female=5.71 | | | | | |
| | Living Arrangement n=289, n=146 | t-value | | | Living Arrangement n=159, n=97 | t-value |
| Dining Services | On=5.86 | 3.48*** | | | | Not sig. |
| | Off =5.44 | | | | | |
| Residence Hall | On=5.64 | 2.88*** | | | | |
| | Off =5.30 | | | | | |

Table 3. Significant Differences in the Student Perceptions of Importance and Performance of University CBBE Dimensions by Class Standing

| | Importance | | Performance | |
|---------------------|---|---|---|----------|
| | Class Standing n=113, n=117, n=108, n=95 | | Class Standing n=55, n=67, n=67, n=69 | |
| Perceived Quality | 1.Freshman=6.23 2.Sophomore=5.89 3.Junior=5.86 4.Senior=5.84 | F=5.65*** 1>2*** 1>3*** 1>4*** | | Not sig. |
| Brand Trust | 1.Freshman=6.36 2.Sophomore=5.92 3.Junior=6.14 4.Senior=6.14 | F=3.72** 1>2*** | | |
| Brand Loyalty | 1.Freshman=5.92 2.Sophomore=5.55 3.Junior=5.69 4.Senior=5.79 | F=2.60** 1>2** | | |
| Learning Environ | 1.Freshman=6.41 2.Sophomore=6.07 3.Junior=6.13 4.Senior=6.11 | F=2.68** 1>2** | | |
| Emotional Environ | 1.Freshman=6.35 2.Sophomore=6.11 3.Junior=5.99 4.Senior=6.03 | F=2.91** 1>3** 1>4** | | |
| Physical Facilities | 1.Freshman=5.96 2.Sophomore=5.58 3.Junior=5.60 4.Senior=5.49 | F=4.62*** 1>2** 1>3** 1>4*** | | |
| Library Services | 1.Freshman=6.16 2.Sophomore=5.61 3.Junior=5.58 4.Senior=5.54 | F=9.56*** 1>2*** 1>3*** 1>4*** | | |
| Dining Services | 1.Freshman=6.04 2.Sophomore=5.68 3.Junior=5.59 4.Senior=5.59 | F=5.04*** 1>3** 1>4** | | |
| Residence Hall | 1.Freshman=5.81 2.Sophomore=5.56 3.Junior=5.37 4.Senior=5.36 | F=4.81** 1>3** 1>4** | | |

***p<.01; **p<.05

Discussion

This study examined the gaps between the student perceptions of importance and performance of CBBE dimensions. It also tested whether student perceptions of importance (expectations) and performance of brand equity dimensions differ by student demographics including gender, living arrangement, and class standing. Because the importance of brand equity dimensions represents student expectations from a university, the findings in Figure 2 reveal which core and supporting brand equity dimensions have the biggest gap, in turn, must receive the most attention in creating a strong university brand. The study found that perceived quality, followed by learning environment, brand trust, emotional environment, and university reputation are the most important core dimensions (mean values > 6.0 on a 7-point scale), which suggests that students have high expectations of them. The importance of perceived quality for branding is consistent with prior research where brand quality is defined as the consumer's judgment about a product's overall excellence or superiority (Zeithaml, 1988, Zeithaml *et al.*, 2013). Also, the importance of CBBE dimensions of perceived quality, brand associations, brand loyalty and brand awareness are consistent with Aaker's (1991, 1996) conceptualization of brand equity. Concerning the supporting dimensions, students have the highest expectations for physical facility, followed by dining services, library services, and residence hall. The importance of supporting dimensions supports the assertion made by Ng and Forbes (2009) with regard to their relevance in creating a strong university brand. The findings pertaining to the core and supporting factors suggest that creating a strong university brand requires a holistic approach by considering all of the factors in a brand ecosystem framework as proposed by Pinar *et al.* (2011).

The results for performance mean values in Figure 2 show that perceived quality has the highest performance, followed by emotional environment, learning environment, and brand trust among the core dimensions. The library services have the highest performance followed by dining services, physical facilities and residence halls. The findings of the performance mean values provide insights about the areas where the university is doing well and poorly. The size of the gaps between importance and performance in Figure 2 indicates the most urgent brand equity areas that the university administrators need to focus on improving. The gaps show where student expectations have not been met. Following the prior gap analysis research (Brown and Swartz, 1989; Parasuraman *et al.*, 1985), this study identified the largest gap for core dimensions as university reputation, followed by brand awareness, and brand associations. As for the supporting dimensions, residence hall has the largest difference (gap), followed physical facilities. Improvements on some of the dimensions such as reputation and brand awareness also depend on the improvement of other core and supporting factors. That is why university administrators need to examine the gaps from a holistic perspective as Pinar *et al.* (2011) suggest.

The findings of importance, performance and existence of gaps have some managerial implications for university branding. First, high expectations, set by brand promises, indicate that the university administrators must do everything they can to meet the expectations for these dimensions, as they could be critical for creating highly satisfied students that could influence student loyalty for university. At the same time, the dimensions that students have lower expectations could be a strategic opportunity for a university by emphasizing the importance of

these dimensions provided that the university has a competitive advantage in these areas. The second implication is that the existence of the gaps indicates that the university is not meeting the student expectations in important areas, and if not taken care of, these gaps could negatively impact the university branding efforts. Particularly, the larger gaps can have significant adverse impact on university's ability to create a strong university brand and brand equity. The university administrators must take immediate actions to remedy the larger gaps and improve the performance in each of these CBBE dimensions. In addition, the university administrators can examine the individual items that were included in the survey to measure each of core and supporting CBBE dimensions in order to determine existence of any gaps for these items that may need an immediate attention. Because the items for these CBBE dimensions provide more specific information, the gaps for these items could be beneficial for administrators for developing and implementing better branding strategies.

The size of the gaps found in Figure 2 indicates the most urgent brand equity areas that the university administrators need to focus on improving. Prioritizing these gaps for dimensions and also for their items show the immediate areas for improvement in both core and supporting CBBE dimensions where student expectations have not been met. Because meeting student expectations are critical for creating a strong university brand, the findings provide strategic directions for branding decisions.

The study also examined the impact of student gender, on/off campus living and student class on importance and performance of the core and supporting brand equity dimensions. The results for gender indicate that the female students perceive the core dimensions of learning environment and emotional environment, and the supporting dimensions of library services, dining services and residence halls significantly more important than the male students. The findings indicated no significant differences in student agreement level of the university performance in all of the CBBE dimensions by gender, living arrangement, and class standing. This suggests that all students had the same perceptions of the performance level of their university. In addition, as expected, students who live on campus place significantly more importance on dining services and residence halls than those who live off campus (Table 2). However, there were no significant differences for performance of all brand equity dimensions based on living arrangement. The results in Table 3 for class level show that while freshman students consistently placed significantly more importance on the dimensions of quality, brand trust, learning environment, physical facilities, library services, dining services, and residence halls than the upper-class level students, students at all levels had similar perceptions of the university performance of the core and supporting CBBE dimensions. The implication for the university administrators is to focus on the gaps by considering the impact of the interactions among the CBBE dimensions in making a university a strong brand.

Examining brand equity dimensions by student demographics offered some insights about their influence on university branding strategies. The results could have important managerial implications for designing and developing branding strategies for universities. The findings indicate there are no significant differences in student agreement level of the university performance in the CBBE dimensions by gender, living arrangement, and class standing. Concerning the significant gender effects on importance of CBBE dimensions, the study found that female students considered five out of eight brand equity dimensions more important than

male students did for creating a strong university brand. Because about 50% of the respondents (students) are females and they may have different needs, the university administrators must take necessary steps to improve these CBBE dimensions to meet the female students' expectations. The results also show that living arrangement makes a difference for the supporting dimensions of residence hall and dining service, but not for core dimensions. This is expected because of the resident students' constant, daily experience with these services. Therefore, the university must take steps to reduce or eliminate the gaps in these areas. The results by student class standing indicate that in general freshman students have a significantly higher expectations for most of the brand equity dimensions than the upper-class students. The differences could be a lack of experience of freshmen with the university as compared to the upper-class students. The findings for freshmen could be important for the university because meeting their needs and expectations could be critical for retaining freshman students for next three years and creating loyal alumni.

Limitations

The findings must be interpreted with caution based on the limitations of this study. First, the study used a purposeful convenience sample obtained from various colleges and class levels at a university in the Midwestern of the United States. Although a complete list of students may be hard to obtain due to privacy issues and strict policies of HEIs, future studies that are able to use probability sampling may better represent the university student population. Second, the study was conducted at one university in the United States. We recommend that a future study could include and compare multiple private and public universities, and universities in other countries to cross-validate the findings to improve the generalizability of the results. Third, the sample of the study was comprised of university students. Future research could consider other stakeholder (e.g., parents, alumni, faculty/staff, donors) perspectives in addition to that of current students.

The premise of this research is that building a strong university brand is based on the university's ability to meet its customers' expectations in brand equity dimensions that are most important to students. Thus, despite above limitations, university administrators can benefit from the findings of a gap analysis in making both strategic and operational decisions for creating a strong university brand.

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