



The role of brand attachment strength in higher education



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ABSTRACT

This paper examines the effect of brand attachment and its antecedents on commitment, satisfaction, trust, and brand equity in the context of higher education institutions. The findings from an online survey with students and recent graduates ($n = 605$) in the United States indicate that brand meaning is the main antecedent of brand attachment strength that affects satisfaction, trust, and commitment as well as brand equity. The effect of the brand attachment antecedents on satisfaction is stronger for current students whereas the effect of brand attachment antecedents on commitment is stronger for recent graduates. The effect of attachment strength on brand equity is also stronger for recent graduates. The paper also highlights practical implications for higher education managers and policy makers.

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1. Introduction

In an increasingly competitive higher education sector, universities face significant challenges when it comes to recruiting new students (Bock, Poole, & Joseph, 2014; Joseph, Mullen, & Spake, 2012). Recruitment is only the beginning of a long-term relationship that higher education institutions (HEI) need to cultivate, not only while students attend the programs but also beyond graduation. How universities manage the relationship with the students and how students perceive their institution's brand can have an impact on the attachment with the institution and in turn on students' intentions to engage with the university in the future. Previous studies highlight the need for research in relation to the power that comes from successful branding and the implications for HEIs (Dholakia & Acciardo, 2014; Watkins & Gonzenbach, 2013). This paper aims to contribute to an underdeveloped area in the literature related to brand attributes and their importance in the context of the higher education sector (Chapleo, 2010). Specifically, the research objective is to examine the influence of HEIs' brand identity, brand meaning, and brand image on brand equity as a result of forming strong attachment, commitment, trust, and overall satisfaction from the vantage point of students and graduates, representing major research gaps identified in contemporary literature. The work develops and tests a unique model in the context of higher education. Therefore, the review of the literature incorporates previous

research in the branding field (see work by Alwi & Da Silva, 2007; Chaudhuri, 2002; Escalas & Bettman, 2005; Goi, Goi, & Wong, 2014; Jillapalli & Jillapalli, 2014; Keller, 1993, 2001; Park, MacInnis, Priester, Eisingerich, & Iacobucci, 2010; Yoo, Donthu, & Lee, 2000) to conceptualize the proposed model. It is worth noting that the use of appropriate, holistic branding models in relation to student and graduate perceptions in higher education is scarce (see Dholakia & Acciardo, 2014), highlighting a lack of research on the effect of university branding on students'/graduates' commitment, satisfaction, trust, and brand equity (Alessandri, Yang, & Kinsey, 2006). By examining these issues, the authors of the paper also respond to Goi et al.'s (2014) call for further empirical evidence of brand identity work in relation to HEIs. Managers employed in HEIs will benefit from this research too, considering the major marketing (and branding) initiatives undertaken in this sector nowadays and the major need to formulate appropriate strategies in order to connect and engage better with students and graduates.

In the next section, the paper discusses the theoretical underpinning and conceptual model before outlining the methodology adopted. The following section presents the results and findings, before concluding with implications and potential future research avenues.

2. Literature review

The conceptual framework builds upon the work of Jillapalli and Jillapalli (2014), who proposed a customer-based brand equity and relationship marketing framework in order to enhance an understanding of the brand equity of professors. Beyond testing the ecological validity of the model, this study extends and makes the framework relevant to the context of HEIs. In the first step, the perceived quality and reputation of

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a higher education institution can affect one's perceptions of an institution's brand characteristics, namely HEI's image, identity, and meaning. These constructs can influence the strength of the attachment the student and graduates have with the institution, which in turn affects relationship factors such as commitment, trust, and satisfaction. Finally, the relationship factors can have an impact on an institution's brand equity. This argument forms the basis of the conceptual model and hypotheses introduced below.

2.1. The impact of perceived quality and reputation

Perceived quality refers to students' and graduates' judgments about a higher education institution's overall excellence or superiority (Zeithaml, 1988), while reputation is the overall value, esteem, and character of a brand as seen or judged by people in general (Chaudhuri, 2002). Put differently, reputation signals how a firm's products, jobs, strategies, and prospects compare to those of competing organizations (Fombrun & Shanley, 1990). Not surprisingly, perceived quality (primarily as manifested by the courses offered) and reputation of an institution are among the strongest influences on student choice of institution (Chen & Hsiao, 2009; Mazzarol & Soutar, 2002; Wilkins & Huisman, 2011).

In HE, reputation describes the image (of quality, influence, trustworthiness) that the institution has in the eyes of others (van Vught, 2008). The term others can describe many different constituents who have their own view of the institution (Alessandri et al., 2006). As a consequence, reputation management is extremely challenging, as different groups assess an institution's quality and reputation on the basis of how the university has met their particular expectations (Suomi, Kuoppakangas, Hytti, Hampden-Turner, & Kangaslahti, 2014). A brand needs to develop a positive reputation in order to become successful and in turn profitable (Herbig & Milewicz, 1995). Having a positive institutional reputation can be of critical importance for crowded and competitive markets as prospective students may attend a leading university because of the overall reputation, even though a school or department may not be perceived as strong (Melewar & Akel, 2005). The reputation and the quality of an institution may be related, but they do not need to be identical, which is why institutions may try to influence their external images in many ways, and not only by maximizing their quality (van Vught, 2008). Perceived quality and reputation act as a first step towards selecting and enrolling at a HEI before someone can start developing an internal, closer, and personal view of the brand. On the other hand, as assessing quality before enrolling is impossible, and judging reputation is becoming increasingly difficult, branding can act as a shorthand measure of the whole range of criteria that inform student decision making (Jevons, 2006).

H1. Perceived quality has a positive effect on HEI (a) brand image, (b) brand meaning, and (c) brand identity.

H2. Reputation has a direct effect on HEI (a) brand image, (b) brand meaning, and (c) brand identity.

2.2. Brand image, identity, and meaning and their impact on attachment strength

Students form their perceptions of brand image, identity, and meaning before enrolling at a university and they continue evolving during their study and even after graduation. For instance, given that brand meaning will transfer from the HEI service to the life of the consumer by the efforts of the consumer herself (McCracken, 1989), one would expect that the different stages a student will find herself in will potentially result in the construction of different meanings. Similarly, brand identity may not remain constant. To be enduring within a changing HE environment, brand identity needs to be dynamic and flexible to meet consumers' expectations (da Silveira, Lages, & Simões, 2013). This requirement does not necessarily imply a process of

total reinvention. Rather, the core identity can act as a timeless essence of the brand that remains unchanged as the brand moves to new markets and new products, while the extended identity elements (organized into cohesive and meaningful groups) can provide brand texture and completeness, and focus on brand personality, relationship, and strong symbol association (Bhimrao, 2008). For HEIs, such an approach can be very useful when operating within a global environment that sees universities often venture beyond their traditional geographical base, but also into providing services to enhance student experience. Melewar and colleagues (Melewar & Akel, 2005; Melewar & Jenkins, 2002) identify four corporate identity sub-constructs (namely communication and visual identity, behavior, corporate culture, and market conditions) for a corporate identity that they have applied to HEIs, which, if managed effectively, can become a source of competitive advantage. Bosch, Venter, Han, and Boshoff (2006) extend the above, arguing that, for HEIs, brand identity should include not only visual expressions but also verbal ones. Brand image, which is the consumer's perceptions of a brand as reflected by the brand associations held in their memories (Keller, 2003), will depend on the type of institution that will command a different approach to marketing the university to potential students (Ivy, 2001). Still, such differentiations may not be clear. For instance, Toma (2008), p.10, studying why HEIs in the United States (US) pursue positioning strategies for greater prestige, found that "universities and colleges that are vastly different in orientation, markets served, and available resources are using roughly parallel strategies in positioning for prestige, having framed their aspirations in a similar manner". Establishing an effective HEI brand can underpin relationship building, forming an attachment between the institution and the student. Park et al. (2010) define brand attachment as the strength of the bond connecting the brand with the self. Students can form and maintain such an attachment while studying for a degree, but also after graduating. The higher the brand relationship quality, that is, the consumer views of the brand as a satisfactory partner in an ongoing relationship (Algesheimer, Dholakia, & Herrmann, 2005), the stronger the attachment will be. Such an attachment could have a significant role in explaining consumer attitude and even intention under certain conditions (Ilicic & Webster, 2011). This information leads to the following hypotheses:

H3. HEI (a) brand identity, (b) brand meaning, and (c) brand image have a positive significant effect on attachment strength between a student or graduate and the institution.

2.3. The impact of brand characteristics and attachment strength on relationship factors

The second part of the model examines the impact of brand characteristics and attachment strength on satisfaction, trust, and commitment and then in turn their impact on brand equity. The number of universities that invest in their brand management is growing (Melewar & Akel, 2005); however, research on the effect on commitment, satisfaction, trust, and brand equity is sparse (Alessandri et al., 2006).

Student satisfaction, which is the short-term attitude emanating from an evaluation of a student's educational experience, results when actual performance meets or exceeds the student's expectations (Elliott & Healy, 2001). In their study, Elliott and Healy (2001) found that student centeredness, campus climate, and instructional effectiveness have a strong impact on how satisfied a student is overall. Given that satisfaction is the most significant determinant of alumni giving (Monks, 2003; Pearson, 1999), HEIs need to put great emphasis on satisfaction while students attend the programs.

Mourad, Ennew, and Kortam (2011) suggest that universities should focus on activities that enhance their brand image rather than simply create awareness, as brand image has a more significant effect on brand equity compared to brand awareness. Previous research also suggests that brand image has a stronger affective rather

than cognitive element (Palacio, Meneses, and Perez (2002). This characteristic of brand image may suggest that brand image can have an effect on the strength of the attachment that students and graduates feel with the university. Palacio et al. (2002) also suggest that this affective element of brand image influences satisfaction with the educational institution. Hence, an extension of this argument is that the stronger the attachment to the institution, the higher the commitment and satisfaction.

HEI brand image, meaning, identity, and attachment strength could also have an effect on trust in the institution. Ghosh, Whipple and Bryan (2001), p. 325 define trust as “the degree to which a student is willing to rely on or have faith and confidence in the college to take appropriate steps that benefit him and help him achieve his learning and career objectives”. In short, elements such as the HEI’s cooperation, timeliness, congeniality, openness, tactfulness, sincerity, and integrity influence trust in the institution (Ghosh et al., 2001). These characteristic could be elements of an HEI’s brand; therefore, the brand’s image, meaning, identity, and attachment strength might affect trust.

These considerations lead to:

- H4.** HEI brand image has a positive effect on (a) satisfaction, (b) trust, and (c) commitment.
- H5.** HEI brand identity has a positive effect on (a) satisfaction, (b) trust, and (c) commitment.
- H6.** HEI brand meaning has a positive effect on (a) satisfaction, (b) trust, and (c) commitment.
- H7.** Attachment strength has a positive effect on (a) satisfaction, (b) trust, (c) commitment, and (d) brand equity.

2.4. The role of trust, satisfaction, and commitment in the formation of brand equity

Trust is “the willingness of a party to be vulnerable to the actions of another party based on the expectation that the other will perform a particular action important to the trustor, irrespective of the ability to monitor or control that other party” (Mayer, Davis, & Schoorman, 1995, p.712). Commitment describes an exchange partner believing

that an ongoing relationship with another is so important as to warrant maximum effort at maintaining this connection (Morgan & Hunt, 1994). Caceres and Pappas (2007), reviewing the literature, argue that commitment towards a brand develops, based on the repurchase of the brand, resistance to modifications generated from the competing universe and resistance to negative feelings generated by specific dissatisfactions. In the current context, such intentions could potentially manifest themselves in terms of participating in events and activities organized by the HEI and donating money. Trust can make managing a relationship more efficient, which could have a positive effect on satisfaction (Andaleeb, 1996; Anderson & Narus, 1990) and commitment (Garbarino & Johnson, 1999; Morgan & Hunt, 1994).

Finally, Keller (1993) defines customer-based brand equity as the differential effect of brand knowledge on consumer response to the marketing of the brand. Previous literature in the higher education sector has focused on professors’ brand equity. Specifically, Jilapalli and Jilapalli (2014) examine the effect of satisfaction, trust, and commitment to a professor on this academic’s brand equity. The findings of that study suggest that all these variables have a significant positive effect on brand equity. In expanding this argument in the context of HEIs, satisfaction with a university, trust in a university, and commitment to a university should affect the institution’s brand equity, as if students or graduates are satisfied with the institution, feel committed and consider the university as trustworthy, which will result in a favorable brand equity (Keller, 2001).

- H8.** Trust has a positive effect on (a) satisfaction and (b) commitment.
- H9.** (a) Satisfaction, (b) trust, and (c) commitment have a significant effect on brand equity.

2.5. Moderating effects

Being a student can be a rich and transformative period in someone’s life. Within a relatively short period of time, students set the foundations for their future careers. At the same time, being a student is a great opportunity to enjoy what may appear to be the last care-free period in one’s life. Upon graduation, students have to compete for a job, often within very harsh market conditions. Personal and career commitments can make people romanticize about their student days. Thomson,

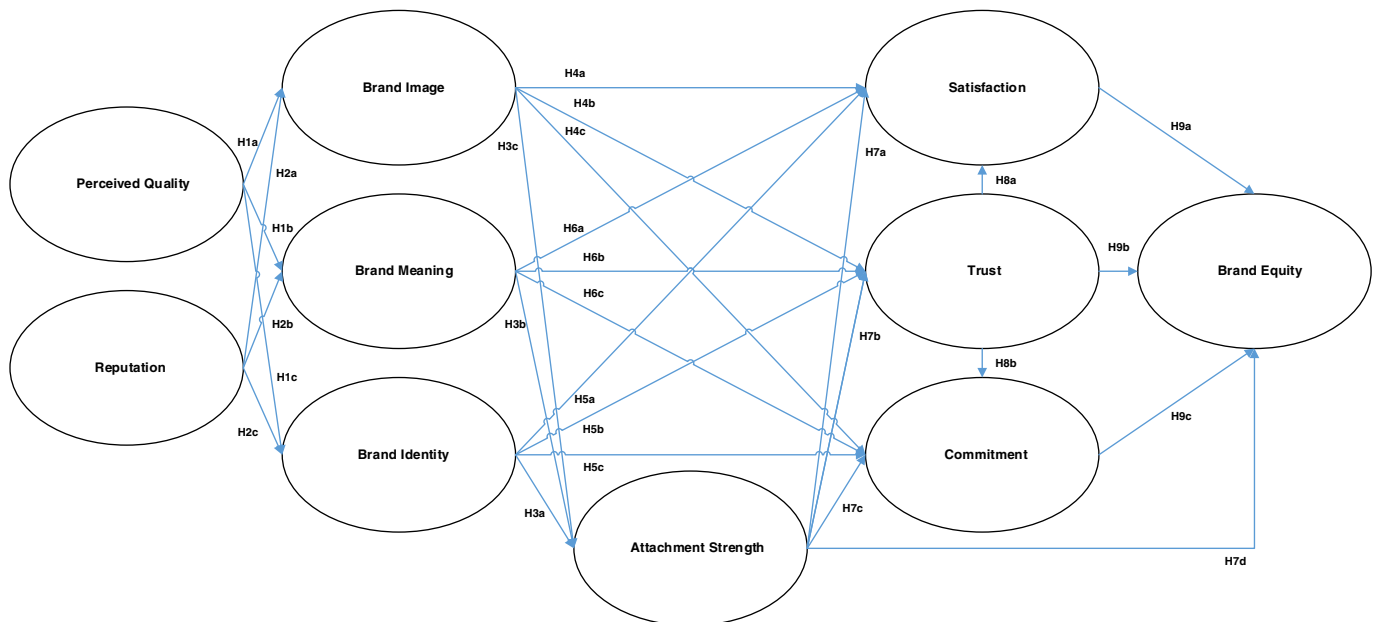


Fig. 1. Proposed conceptual framework.

MacInnis, and Park (2005), comparing attachment to a brand and attitudes towards a brand, list a number of critical differences. Among them, there are three differences that are time-dependent. First, Thomson et al. (2005) suggest that strong attachments develop over time between an individual and the institution; second, a rich set of schemas and affectively laden memories positively influence the strength of the attachment; and third, that those individuals who have a strong attachment also feel committed to preserving their relationship with the attached object. As time goes by and an individual completes a course and becomes an alumnus, the relationship and the attachment with the brand can potentially fade off. The opportunities for interaction naturally decrease compared to those during one's studies, which makes developing or maintaining the attachment challenging. In turn, this attachment can impact on the individual's commitment, trust, and loyalty to the brand. Given the above argument and the central role that attachment plays in the suggested framework, current education status, namely if someone is a student or a graduate, moderates the proposed relationships in the model (H1–H9):

H10. *Current education status (i.e. being a student or a graduate) moderates the relationships in hypotheses H1–H9.*

Fig. 1 visualizes the conceptual model and the associated hypotheses as discussed in the previous sections.

3. Method

3.1. Data collection and sampling

The study employed an online survey in the US, as HEIs in the US have very strong global brands and alumni engagement and donation functions are among the leading ones in the world (in 2014 alone, US HEIs raised a record \$33.8 billion (McDonald, 2014)). A market research company recruited participants in order to control quotas of gender, age, and area of residence. Some 800 potential respondents received the survey link, providing 605 valid responses (75.6% response rate). The data collection took place in December 2014. The sample consisted of students currently studying for an undergraduate degree either full time or part time and recent university graduates. Table 1 presents the profile.

A three-item, seven-point scale adapted from Jillapalli and Jillapalli (2014) defined and measured perceived quality. Responses to two items (Chaudhuri, 2002), on 1- to 7-point scales, assessed reputation. Four items measured brand image (Alwi & Da Silva, 2007). Measures

for brand meaning (Escalas & Bettman, 2005) and brand identity (Goi et al., 2014) included two four-item scales, respectively. Five items measured attachment strength (Park et al., 2010). A four-item, seven-point scale adapted from Jillapalli and Jillapalli (2014) defined and measured commitment. Responses to four items, on 1- to 7-point scales, assessed trust, while three items measured satisfaction (Jillapalli & Jillapalli, 2014). Measures for brand equity (Yoo et al., 2000) included 3 items.

3.2. Analysis strategy

The analysis revolves around the model: brand characteristics and relationship factors (Fig. 1; for purposes of clarity, the figure includes only the model paths explicitly stated in the hypotheses). A structural equation model (SEM) examines the relationships between brand meaning, brand identity, brand image, and their connection with attachment strength and brand equity. The framework stems from brand equity models suggested in the previous literature (Berry, 2000; Jillapalli & Jillapalli, 2014). Respondents answered on seven-point scales for all constructs (Table 2).

4. Results

The results indicate that discriminant and convergent validity are satisfactory (Table 3) and a strong fit for the model (Table 4). All items load significantly under their respective factors, demonstrating good reliability of the scales. Nevertheless, Kock (2015) demonstrates that even when discriminant validity is satisfactory, common methods bias (CMB) can still be an issue and recommends a full collinearity assessment. Kock and Lynn (2012) recommend an upper variance inflation factor (VIF) threshold of 5 for SEM models of this type. The highest VIF is 4.14; therefore, CMB is not an issue in the model.

The paths from perceived quality to brand image, brand meaning, and brand identity are positive and significant (H1). The same applies to the paths from reputation to brand image, brand meaning, and brand identity (H2). Brand meaning has a significant positive effect on attachment strength (H3a). The effect of brand meaning on satisfaction (H6a) and commitment (H6c) is also positive and statistically significant. Trust in an HEI has a positive effect on satisfaction (H8a) and commitment to the university (H8b). Brand image significantly influences satisfaction (H4a) and trust (H4b), but not commitment (H4c rejected). Brand identity has a significant effect only on satisfaction (H5a) and trust (H5b), but not on commitment (H5c rejected). Attachment strength has a positive significant effect on trust (H7b), commitment

Table 1
Respondents' demographic and socioeconomic profile.

Model: full sample (N = 605)					
Characteristic	Frequency	%	Characteristic	Frequency	%
Gender			Age (years)		
Male	294	48.6	18–29	368	60.8
Female	311	51.4	30–39	230	38.0
Employment Status			40 or over	7	1.2
Full-time employed	287	47.4	Area of residence		
Part-time employed	58	9.6	Urbanized area	312	51.6
Out of work (but looking for work)	16	2.6	Urban cluster	226	37.4
Out of work (but not looking for work)	4	0.7	Rural	67	11.1
Homemaker	29	4.8	Educational attainment		
Student	203	33.6	Current university student	239	39.5
Unable to work	8	1.3	University graduate	267	44.1
Ethnicity			Graduate degree	87	14.4
African American	51	8.4	Doctorate	12	2.0
Native American	3	0.5	Income		
USA White	398	65.8	\$0–\$24,999	89	14.7
Asian American	49	8.1	\$25,000–\$49,999	154	25.5
Hispanic American	55	9.1	\$50,000–\$74,999	130	21.5
Multiracial	17	2.8	\$75,000–\$99,999	119	19.7
Other white background	21	3.5	More than \$100,000	110	18.2
Other	9	1.5			

Table 2
Items.

Construct	Loading	Source
Perceived quality (C.R. = 0.919)		
Low quality–high quality	.871	(Jillapalli & Jillapalli, 2014)
Inferior–superior	.884	
Poor–excellent	.911	
Reputation (C.R. = 0.907)		
This university has good status	.916	(Chaudhuri, 2002)
This university has a good reputation	.906	
Brand image (C.R. = 0.919)		
Reassuring	.870	(Alwi & Da Silva, 2007)
Straightforward	.875	
Open	.861	
Supportive	.831	
Brand meaning (C.R. = 0.941)		
This university reflects who I am	.897	(Escalas & Bettman, 2005)
I feel a personal connection to this university	.899	
I use this university to communicate who I am to other people.	.886	
I think this university helps me become the type of person I want to be	.894	
Brand identity (C.R. = 0.910)		
Helpful website	.783	(Goi et al., 2014)
Outstanding mission and vision	.853	
Perceptible university/college-university personality	.891	
Staff who are well trained in their roles	.856	
Attachment strength (C.R. = 0.953)		
To what extent is this university part of you and who you are?	.905	(Park et al., 2010)
To what extent do you feel personally connected to the university?	.928	
To what extent do you feel emotionally bonded to the university?	.914	
To what extent is the university part of you?	.924	
To what extent does the university say something to other people about who you are?	.804	
Commitment (C.R. = 0.953)		
I am very committed to this university	.917	(Jillapalli & Jillapalli, 2014)
This university is very important to me	.945	
I really care about this university	.921	
I believe that this university deserves my effort to maintain a relationship	.868	
Trust (C.R. = 0.935)		
This university can be trusted	.874	(Jillapalli & Jillapalli, 2014)
This university is expected to do what is right	.855	
This university has high integrity	.915	
This university keeps its promises	.893	
Satisfaction (C.R. = 0.936)		
I am delighted with this university's course	.892	(Jillapalli & Jillapalli, 2014)
Overall, I am satisfied with this university's course	.943	
I think I did the right thing when I decided to take this university's class	.899	
Brand equity (C.R. = 0.916)		
Even if another university had the same features as this one, I preferred to study at this university	.865	(Yoo et al., 2000)
If there was another university as good as this one, I would have still preferred to study at this university	.932	
If another university was similar this university in any way, it would have seemed smarter to study at this university	.857	

(H7c), and brand equity (H7d), whereas it has a negative effect on satisfaction (H7a rejected). Satisfaction (H9a) and trust (H9b) have positive, statistically significant effects on brand equity, whereas the path from commitment to brand equity was not significant (H9c rejected). However, the paths from brand image and brand identity are not significant (H3b; c rejected) and there is a weak negative effect of brand meaning on trust (H6b rejected) (Table 4).

The next step in the analysis was to examine whether current educational attainment moderates the relationships described above (H10). Respondents were grouped into students and graduates and multi-group analysis using AMOS 22 examined the differences between the groups. The analysis started by establishing metric invariance between the groups. The models demonstrate acceptable fit between the groups. Table 5 reports the structural weights. Brand identity positively affects satisfaction and the effect is stronger for those students who are currently studying for an undergraduate degree. Brand meaning has a strong effect on commitment and this effect is stronger for graduates. Attachment strength has a negative effect on satisfaction, and this effect is more negative for graduates. Finally, attachment strength has a positive effect on brand equity and this effect is stronger for graduates. The remaining relationships were not moderated by current educational attainment (Table 5) (H10 partially supported).

5. Discussion

First, this study confirms the main elements of the conceptual model, consistent with expectations based on prior research. The findings are mainly in line with those of Jillapalli and Jillapalli (2014), who demonstrate that elements of a brand, such as perceived quality (in the case of a professor), influence students' attachment strength, and hence satisfaction, commitment, and brand equity. On the other hand, Jillapalli and Jillapalli (2014) found the relationships between reputation and attachment strength (and also between attachment strength and trust) to be non-significant, whereas the current results indicate that reputation—along with perceived quality—is critical for HEIs in building brand image, brand meaning, and brand identity, and hence attachment strength, which positively affects relationships between students and graduates with the HEI in terms of commitment and trust, consequently affecting brand equity. Students consider reputation as important, but the link between reputation and attachment strength is important only in relation to the university, not the professor.

Brand identity can constitute a route for management to make their mark on a university (Melewar & Akel, 2005) but the results of this current study indicate that brand image and brand identity do not affect attachment strength. HEIs tend to follow a homogeneous and one-size-

Table 3
Discriminant validity of construct measures.

	AVE	Satisfaction	Perceived quality	Reputation	Brand image	Brand meaning	Brand identity	Attachment	Commitment	Trust	Brand equity
Satisfaction	0.831	0.912									
Perceived quality	0.790	0.747	0.889								
Reputation	0.830	0.732	0.678	0.911							
Brand image	0.739	0.756	0.692	0.744	0.859						
Brand meaning	0.799	0.805	0.654	0.573	0.711	0.894					
Brand identity	0.717	0.840	0.754	0.740	0.820	0.790	0.847				
Attachment	0.803	0.602	0.532	0.495	0.591	0.789	0.642	0.896			
Commitment	0.834	0.683	0.597	0.574	0.690	0.845	0.725	0.867	0.913		
Trust	0.782	0.685	0.649	0.821	0.832	0.665	0.792	0.621	0.716	0.885	
Brand equity	0.784	0.628	0.538	0.588	0.580	0.646	0.616	0.696	0.683	0.643	0.885

Note: Figures in the diagonal are the square root of the average variance extracted (AVE), those below the diagonal are the correlations between the constructs.

fits-all marketing strategy and, therefore, they need to develop targeted strategies to various student groupings, focusing on relationship building and bonding. Brand image and brand identity do not have an influential effect on commitment and this result may derive from the fact that when students graduate and leave the university then their ongoing relationship with that HEI becomes weaker, possibly due to limited efforts by HEIs to keep in touch with them or to engage successfully. Da Silveira et al. (2013) point out that brand identity should be tailored to consumer requirements (i.e. bottom-up), so if HEIs adjust identity based on top-down motivations, the results may be ineffective in boosting attachment strength and brand equity. Put another way, image plays an essential role in market positioning (Hemsley-Brown & Oplatka, 2006; Nguyen & LeBlanc, 2001). Ivy (2001) reports that universities should base the adjustment of image and positioning strategy on market analysis. Given that Toma (2008) considers that HEIs are using

Table 4
Phase 1 structural equation model.

Path	Est	p
Perceived quality → Brand image	.323	***
Perceived quality → Brand meaning	.486	***
Perceived quality → Brand identity	.451	***
Reputation → Brand image	.583	***
Reputation → Brand meaning	.302	***
Reputation → Brand identity	.498	***
Brand image → Attachment	.067	ns
Brand identity → Attachment	.075	ns
Brand meaning → Attachment	.734	***
Perceived quality → Attachment	−.056	ns
Reputation → Attachment	.000	ns
Brand image → Commitment	.026	ns
Brand image → Trust	.547	***
Brand image → Satisfaction	.243	***
Brand identity → Satisfaction	.525	***
Brand identity → Trust	.337	***
Brand identity → Commitment	−.015	ns
Brand meaning → Commitment	.334	***
Brand meaning → Trust	−.092	#
Brand meaning → Satisfaction	.467	***
Attachment → Commitment	.489	***
Attachment → Trust	.180	***
Attachment → Satisfaction	−.118	**
Trust → Commitment	.190	***
Trust → Satisfaction	−.149	**
Perceived quality → Brand equity	.045	ns
Reputation → Brand equity	.186	*
Satisfaction → Brand equity	.260	***
Trust → Brand equity	.244	**
Commitment → Brand equity	.063	ns
Attachment → Brand equity	.425	***
Brand image → Brand equity	−.146	#
Brand meaning → Brand equity	−.068	ns
Brand identity → Brand equity	−.136	ns

Method: ML; model fit: $\chi^2(559) = 1568.061^{***}$, CMIN/DF = 2.805, CFI = .958, RMSEA = .055.

Significant at p: ns $\geq .1$; # $\leq .1$; * $\leq .05$; ** $\leq .01$; *** $\leq .001$.

similar positioning strategies aimed at boosting prestige, these results point to a common weakness in HEIs' marketing strategies. For instance, a university might project itself as "...innovative ...professional, and business-like" (Melewar & Akel, 2005, p.44), whereas students may most value facilities, social life, atmosphere, and employment opportunities (Duarte, Alves, & Raposo, 2010). Commitment is a demanding dimension, not easily obtained and therefore universities should make more customer-orientated effort to build brand equity further. This is a key finding as results show that the paths from commitment, brand meaning, and brand identity to brand equity are not significant. The finding highlights the need for continuous, ongoing development of appropriate branding strategies by HEIs which will be taking into account various challenges posed by national and global competitors.

In turn, a strong brand identity increases satisfaction for students, more so than for graduates. On the other hand, brand meaning affects commitment and also attachment strength affects brand equity more strongly for graduates than for students. To the best of the authors' knowledge, these findings have not previously been reported in the literature. Students may relate more easily to softer constructs, such as brand identity, while graduates, who are more mature, tend to relate more to more demanding constructs such as commitment. From another point of view, the day-to-day experience of brand characteristics, brand identity and satisfaction will be central for students' overall evaluations of their universities and brand equity. On the other hand, for graduates, interaction with their alma maters will be on a more conceptual rather than practical level, as the need for satisfaction will be in the past. Therefore, brand meaning, relating personally to the university, commitment, and caring about the university will be central aspects of any ongoing relationship. Brand meaning can also dilute over the years, hence HEIs should take further intensified branding efforts to minimize this. The latter indicates the complexity (and the various paths) related to brand attachment and the results have signaled the positive and negative associations involved.

Attachment strength has a negative effect on satisfaction. This unexpected result could be because students who feel strong attachment to the HEI are more involved and they are likely to demand higher performance and have higher standards for satisfaction. The effect is more negative for graduates, possibly arising from their stronger emotional involvement.

6. Implications and conclusions

This paper has addressed the knowledge gap identified by Chapleo (2010) concerning HEI brand identity, meaning, image, and reputation and is a response to Goi et al.'s (2014) call for empirical evidence of HEI brand identity outcomes. In the increasingly competitive higher education marketplace, building identity and branding are becoming essential (Bock et al., 2014; Joseph et al., 2012). From a theoretical perspective, the study builds on previous work by various scholars including, inter alia, by Jillapalli and Jillapalli (2014); Keller (1993, 2001), to extend the customer-based brand equity model by the addition of brand image, meaning, and identity. Accordingly, the first phase of

Table 5
Moderation.

Path			$\Delta\chi^2$	Sig	Students	Graduates
Perceived quality	→	Brand image	0.007	ns	.254 (3.708***)	.374 (6.256***)
Perceived quality	→	Brand meaning	0.583	ns	.492 (6.083***)	.468 (6.893***)
Perceived quality	→	Brand identity	0.002	ns	.452 (6.693***)	.440 (7.470***)
Reputation	→	Brand image	0.203	ns	.652 (8.746***)	.536 (8.359***)
Reputation	→	Brand meaning	0.877	ns	.285 (3.503***)	.326 (4.702***)
Reputation	→	Brand identity	0.065	ns	.504 (7.289***)	.497 (7.987***)
Brand image	→	Attachment	0.008	ns	.101 (1.012 ns)	.017 (.211 ns)
Brand identity	→	Attachment	0.168	ns	.369 (2.915**)	-.093 (-1.022 ns)
Brand meaning	→	Attachment	0.695	ns	.684 (9.008***)	.753 (11.133***)
Perceived quality	→	Attachment	2.488	ns	-.261 (-2.963**)	.096 (1.370 ns)
Reputation	→	Attachment	0.021	ns	-.083 (-.747 ns)	.054 (.662 ns)
Brand image	→	Commitment	0.696	ns	.174 (2.145*)	-.092 (-1.604 ns)
Brand image	→	Trust	2.239	ns	.614 (8.210***)	.481 (7.154***)
Brand image	→	Satisfaction	0.083	ns	.194 (2.270*)	.318 (4.188***)
Brand identity	→	Satisfaction	4.778	*	.624 (7.397***)	.387 (5.020***)
Brand identity	→	Trust	0.06	ns	.283 (3.475***)	.381 (5.355***)
Brand identity	→	Commitment	0.357	ns	-.014 (-.192 ns)	.022 (.385 ns)
Brand meaning	→	Commitment	3.947	*	.236 (3.648***)	.411 (6.866***)
Brand meaning	→	Trust	0.036	ns	-.123 (-1.743#)	-.039 (-.502 ns)
Brand meaning	→	Satisfaction	10.321	***	.489 (6.925***)	.426 (5.486***)
Attachment	→	Commitment	2.438	ns	.499 (9.012***)	.481 (9.428***)
Attachment	→	Trust	0.159	ns	.176 (3.024**)	.171 (2.717**)
Attachment	→	Satisfaction	8.871	**	-.068 (-1.213 ns)	-.170 (-2.664**)
Trust	→	Commitment	0.000	ns	.141 (1.849#)	.189 (3.018**)
Trust	→	Satisfaction	0.000	ns	-.273 (-3.368***)	.006 (.069 ns)
Perceived quality	→	Brand equity	0.54	ns	-.029 (-.323 ns)	.134 (1.679#)
Reputation	→	Brand equity	0.139	ns	.107 (.962 ns)	.259 (2.528*)
Satisfaction	→	Brand equity	2.488	ns	.119 (.879 ns)	.254 (2.396*)
Trust	→	Brand equity	0.188	ns	.125 (1.061 ns)	.341 (2.873**)
Commitment	→	Brand equity	5.49	*	.180 (1.607 ns)	.070 (.484 ns)
Attachment	→	Brand equity	4.775	*	.307 (3.148**)	.447 (4.127***)
Brand image	→	Brand equity	0.633	ns	-.091 (-.726 ns)	-.180 (-1.722#)
Brand meaning	→	Brand equity	7.63	**	.111 (.955 ns)	-.198 (-1.538 ns)
Brand identity	→	Brand equity	2.012	ns	.038 (.234 ns)	-.246 (-2.159*)

Notes: Current education status: (1) metric invariance between the two groups: $\Delta df = 26$, $\Delta\chi^2 = 35.322$, $p > 0.05$; (2) All $\Delta df = 1$; (3) models fit across the two groups $\chi^2(1118) = 2596.728$ ***, $CMIN/DF = 2.323$, $CFI = .940$, $RMSEA = .047$.

this study investigated perceptions of universities in the minds of students and graduates through the lens of an extended customer-based brand equity model. The empirical results indicate the importance of brand image, identity, and meaning (and their antecedents, perceived quality, and reputation); attachment strength; and commitment, trust, and satisfaction in the formation of university brand equity in the minds of students and graduates. Hence, the work addresses relevant research gaps in the literature.

More importantly, this work has examined the role of brand attachment and its antecedents in brand equity, loyalty, and engagement in higher education, contributing to the literature of branding HEIs in a number of important ways. First, by extending Jilapalli and Jilapalli's (2014) customer-based brand equity model, the analysis tests a new, more comprehensive and holistic model, which has generated many insightful findings. For example, the work suggests that universities' positioning strategies may be focusing too much on building prestige, whereas strategies aimed at improving student satisfaction could have more positive effects on brand equity. This is a novel finding that strengthens past findings (e.g. work by Chapleo, 2010; Dholakia & Acciardo, 2014), indicates a key theoretical implication and paves the way for further research in that direction. The above also generates a key implication for managers and practitioners. Specifically, HEIs can strengthen their brands in the perceptions of students by developing their perceived quality and reputation. Marketers aiming to attract students to HEIs should aim for improved customer orientation, focusing attention on the practical things that matter to students, such as the quality of the courses (and perhaps also the social life). This might be achieved, for example, by investing in courses, student services, clubs and societies, and competing to have these courses and facilities highly ranked and validated or accredited by awards (e.g. AACSB, North

American University Rankings, The 25 Most Amazing Student Unions, and so on) where possible.

The second major contribution arises from examining the extended customer-based brand equity model in a comparison of the models of brand equity for students vs. graduates. Satisfaction with practical brand characteristics, such as the courses, plays a strong role for students, whereas the influence of brand meaning and commitment is stronger for graduates. To the authors' knowledge, this represents another unique contribution to the current branding literature and the subsequent theoretical implication needs to be taken into consideration by scholars. A key managerial implication emanates from this work too, emphasizing the need to manage relationships with alumni differently by promoting an affective, personal connection with the university. Such a connection might be achieved by investing in intangibles, such as special invitations to events, perhaps where famous alumni are invited to speak, and symbolic artifacts to make the intangibles more tangible, such as branded clothing, accessories, trophies, and other regalia. By doing so, managers should achieve the higher satisfaction outcomes that are central to the success of any HEI.

The third major contribution relates to attachment strength, which is influenced by various attributes (e.g. perceived quality) but, surprisingly, attachment strength has a negative effect on satisfaction. This is an unexpected result, illustrating a major theoretical implication as the findings add a new perspective to the literature and especially to the current work by Jilapalli and Jilapalli (2014). In addition, attachment strength has a positive effect on brand equity and both effects are stronger for graduates. Hence, managers and practitioners need to appreciate that university students do not represent a homogeneous group and tailor-made, segmentation-based strategies need to be developed when targeting undergraduate vs. graduate students. These

strategies need to take into account the influential role of various attributes towards attachment strength as this study posits.

The fourth contribution is an overarching one bringing together elements of the aforementioned three contributions. The work illustrates a theoretical path which will facilitate a better understanding of how branding strategies can be applied to HEI brands. The results indicate in a succinct manner that perceived quality and reputation cause feelings of attachment, lead to satisfying relationships, and help to build brand equity; the latter represents a major theoretical implication too.

More importantly, this theoretical model/path can inform the strategies and benefit managers and practitioners. Brand meaning is the main antecedent of brand attachment strength that affects satisfaction, trust, and commitment as well as brand equity. Therefore, HEIs should aim to differentiate themselves by creating and nurturing relationships in novel ways with students, alumni, and other stakeholders, for example using networking events, social media campaigns, customized clothing, regalia, and so on, and building on the connections between the institution and the stakeholders. By doing this, they can extend the scope of their current recruitment (and marketing) activities and gain significant competitive advantages vis-à-vis their competitors (Papagiannidis, 2013).

7. Limitations and further research

This study is limited in that it comprises a cross-sectional study of students and graduates of various US universities, treated as a homogeneous group, whereas HEIs differ in, for example, development stages, resources, and student profiles (Asaad, Melewar, Cohen, & Balmer, 2013). Future work could study the actual components of brand characteristics in greater depth by concentrating on specific HEIs. Such a study can also include ranking information about the institutions which can complement the data set with external reputation indicators as well as the influence of rankings on HEI's perceived quality. Also, the causal effects of strategies to influence, for example, brand image and student satisfaction could be investigated in a longitudinal study. These results for US universities suggest that brand image and brand identity do not affect attachment strength and, further, brand identity does not affect commitment. Therefore, future research should focus on the things that matter most for students in their choices of university, so that universities can adjust their brand images and identities and accordingly build brand equity.

This work does not examine the role of specific channels and mechanisms when developing an institutional brand. This omission presents another limitation considering the growing role of social media in relation to business activities in general and educational issues in particular. Future research can also examine the relative difference between online and offline channels in developing the institutional brand and could highlight which channels can play major roles and can have a lasting impact in relation to branding strategies. Finally, this work contains a representative, well-balanced sample in relation to specific demographic and socioeconomic characteristics (gender, income, area of residence, etc.) and it also focuses on one country. These limitations provide an opportunity for further research. Future work could shed light on the role of specific demographic (e.g. gender) and socioeconomic (e.g. income) characteristics in relation to university branding, while making comparisons with other countries will be extremely useful too.

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