Research article

Brand equity in higher education: Challenges and possible strategies for Spanish public universities

Valor de marca en la educación superior: Retos y posibles estrategias para las universidades públicas españolas

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How to cite the article:

Abstract:

Introduction: This research was conducted to examine the role of brand equity applied to public universities. For this purpose, the main contributions of the literature related to the study were analysed in order to identify the variables that determine brand equity in the higher education sector. **Methodology**: An empirical study was carried out using a valid sample of 1.246 responses from three stakeholders (353 lecturers, 256 service staff and 658 students) belonging to two public universities in Valencia (Spain). SPPS v.19 and EQS 6.2 were used as working tools. **Results and discussion:** The results show the impact of each variable of brand equity, namely: brand awareness, brand image, perceived quality and brand loyalty. Differences in perception between internal and external stakeholders are also shown.

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Conclusions: This research can help university managers by unravelling the key opinions of their staff and students about university brand equity, and especially about brand image, in order to develop appropriate strategies to maintain or improve it.

Keywords: marketing, branding; brand equity; higher education; public universities; stakeholders; structural equation modelling; Spain.

Resumen

Introducción: Esta investigación se llevó a cabo para examinar el papel del valor de marca aplicado a las universidades públicas. Para ello, se analizaron las principales aportaciones de la literatura relacionadas con el estudio, identificando las variables que determinan el valor de marca en el sector educativo superior. **Metodología**: Se realizó un estudio empírico utilizando una muestra válida de 1.246 repuestas de tres agentes implicados (353 profesores, 256 de personal de administración y servicios, y 658 estudiantes) pertenecientes a dos universidades públicas de Valencia (España). Se han utilizado como herramientas de trabajo, SPSS v.19 y EQS 6.2. **Resultados y discusión:** Los resultados muestran la repercusión de cada variable del valor de marca, que son: notoriedad de marca, imagen de marca, calidad percibida de marca y lealtad de marca. Además, se muestran diferencias de percepción entre los agentes internos y externos. **Conclusiones**: Esta investigación pretende ayudar a los directivos universitarios a descifrar las claves sobre las opiniones de sus empleados y estudiantes en lo relativo al valor de marca universitario, y especialmente sobre la imagen de marca, para generar con ello estrategias adecuadas para mantenerlo o mejorarlo.

Palabras clave: marketing; branding; valor de marca; educación superior; universidades públicas; agentes implicados; sistema de ecuaciones estructurales; España.

1. Introduction

In the Spanish university system, according to the 2023 report prepared by the Ministry of Science, Innovation and Universities, there are currently 86 universities (50 public and 36 private). With these numbers, Retamosa (2018) believes it is necessary to focus on creating an educational brand, trying to better cover the student market, while trying to attract great talent to offer the best possible service. And, based on the commitment to commercialise the services, the brand value becomes a key element to maximise the user experience with the brand (Casanoves *et al*., 2019).

Regarding public educational institutions, Vargas (2014) considers that these universities need more research on their brand value, mainly because of the excessive importance given to the production of high-impact scientific publications and the low weight given to innovation in the service provided to students. In other words, the aim is to generate a feeling of love for the brand on the part of consumers, thereby improving sales figures (Esteban *et al*., 2014). In addition, university stakeholders (lecturers, service staff and students) become a key part of the process, to be considered as professionals but also as people (Zabalza, 2009), who are asked to help create a powerful brand, a process that is fuelled by the actions that the company directs towards its audiences, as well as their interactions and experiences.

Following this argument, different authors have highlighted the importance of creating brand equity for universities (Curtis *et al*., 2009; Kaushal and Ali, 2019; Noor *et al*., 2019). In the present study, following previous works (Bueno *et al*., 2018; Lomer *et al*., 2018; Rodríguez *et al*., 2019; Torres *et al*., 2018), the three stakeholders considered most relevant to the university world, both internally (lecturers and service staff) and externally (students), have been

selected and can help maximise the aforementioned brand equity.

Therefore, the present work has two main objectives: (1) to decipher which are the most notable brand equity variables by the university stakeholders, internal (lecturers and service staff) and external (students) in the Spanish public sphere, and (2) to compare their perceptions to decipher if there are significant differences. This research can help university leaders by deciphering the key opinions of their employees and students regarding the university's brand equity, and especially its brand image, to generate adequate strategies to maintain or improve it.

2. Conceptual framework

To achieve the objectives of this research, the information found in the literature has been divided into two key concepts: (1) the perception of brand equity among stakeholders in public universities, and (2) differences in perception between stakeholders, internal and external. Each of these will be discussed in more detail below.

2.1. Perceptions of brand equity among stakeholders in public universities

The key elements of brand equity have been considered in this study. Based on the main proposals of brand equity models in the literature (Aaker, 1992; Atilgan *et al.*, 2005; Buil *et al.*, 2010; Christodoulides and De Chernatony, 2010; Delgado and Munuera, 2002; Faircloth *et al.*, 2001; Farquhar, 1989; Keller, 1993; Kim and Kim, 2004; Lee and Leh, 2011; Liu *et al.*, 2015; Pappu *et al.*, 2005; Pinar *et al.*, 2011; Washburn and Plank, 2002; Yoo and Donthu, 2001) four elements were considered (brand awareness, brand image, perceived quality and brand loyalty). These elements, which have been identified as important in previous studies, are believed to be critical to brand equity. Each of these elements is discussed below.

2.1.1. Brand Awareness

In the specific field of higher education, Brewer, and Zhao (2010) examine the association of reputation with preference for a university, its brand awareness and opinion of the university brand in Sydney (Australia). The results show, among other things, the importance of reputation in relation to the other three elements mentioned. Rachmadhani *et al.* (2018) explain that the knowledge that students have about the university, among other factors, can determine whether they choose to study in the public or private sector in Indonesia. Noor *et al.* (2019) highlight that brand awareness, among other dimensions, has a positive relevance to the corporate brand value of public universities in Malaysia, therefore brand awareness is a very important variable to be considered by education managers.

In relation to brand awareness and brand equity, Huang and Sarigöllü (2012), among others, confirm a positive relationship between the two elements. Świtała *et al.* (2018) examine the influence of brand awareness and brand image on the brand equity of logistics service providers and show a positive, albeit weak, dependence. In addition, Azzari and Pelissari (2021) use the mediating effect of other dimensions of consumer-based brand equity (CBBE) (associations, loyalty, and perceived quality) to demonstrate that brand awareness acts as a first step in building brand equity for consumers.

In view of the above, it is possible to propose the first research hypothesis, H1: The perception of brand awareness positively influences the perception of brand equity among stakeholders in Spanish public universities.

2.2.2. Brand Image

In the specific field of higher education, Mirzaei *et al*. (2016) evaluate the associations with respect to healthy and unhealthy university brands, highlighting that a better university image can be generated through communication from the most distinguished associations to its own students. Yuan *et al*. (2016) consider that marketing activities, their non-overexploitation and the transfer of resources improve the mutual influence of a university's image and its brand extensions. Ruiz *et al*. (2019) argue that the affective image, the perception of teaching resources and the training of graduates influence the formation of the university image among the different groups involved (society, potential students, current students, graduates, and companies). These findings are of great value in generating marketing strategies that project a favourable image to different audiences.

In relation to brand image and brand equity, Faircloth *et al*. (2001) show the positive effect of brand attitude and brand image on brand equity. Karupannan and Vijayakumar (2012) highlight that brand image positively and significantly affects brand equity in the FMCG sector in India. Nasib *et al*. (2022) highlight that brand image significantly affects interest in Indonesian universities and acts as a mediating variable.

With all this, it is possible to propose the second research hypothesis, H2: The perception of brand image positively influences the perception of brand equity among stakeholders in Spanish public universities.

2.2.3. Perceived Quality

In the specific area of higher education, Lomer *et al*. (2018) argue that linking specific representations of the nation with those of prospective international students and the higher education sector, together with the combination of brand promises, can improve the perceived quality of the UK national university brand. Perera *et al*. (2020) show that, among other factors, perceived brand credibility has a significant effect on Vietnamese students' value of the university brand. In doing so, they provide strategies to improve the higher education sector, considering the perceived quality of the brand. Shamsudin *et al*. (2022), as we have already commented, measure in their study the perceived quality, brand awareness and brand image in relation to the enrolment options of students at private universities in Kuala Lumpur, the results showing that the three aspects positively influence the enrolment intention.

In relation to perceived quality and brand equity, according to Pappu *et al*. (2005), perceived quality enhances brand equity by giving consumers a reason to buy and provides greater differentiation from competitors. For Lee and Leh (2011), perceived quality creates value for the brand because it is ultimately what motivates consumers to buy the product. Nath Sanyal and Datta (2011) find that the perceived quality of generic drugs has a significant but indirect impact on their brand equity among physicians in India.

In view of the above, it is possible to propose the third research hypothesis, H3: The perception of perceived quality positively influences the perception of brand equity among stakeholders in Spanish public universities.

2.2.4. Brand Loyalty

In the specific field of higher education, Abbas (2019) investigates the impact of brand awareness and service quality of higher education institutions, and more specifically on their credibility, trust, and long-term loyalty, which can be achieved through brand promotion and

providing valuable services in Lahore (Pakistan). The results show that brand awareness and service quality have a significant impact on brand loyalty, and therefore it is worth emphasising continuous brand management. Kaushal and Ali (2019) state that brand reputation has direct and indirect effects on students in various universities in India, highlighting that age, seniority, and provision of financial support in the form of scholarships are the most influential factors. Rodríguez *et al*. (2019) emphasise the importance of maximising stakeholder identification with the university through distinctive and differentiating features, thereby enhancing loyalty to the higher education institution itself.

In relation to brand loyalty and brand equity, Taylor *et al*. (2004) suggest that brand equity and trust are consistently the most important antecedents of both behavioural and attitudinal forms of customer loyalty. Hossien *et al*. (2012) show that brand loyalty and brand image are important components of brand equity in the Iranian chocolate industry. Sürücü *et al*. (2019) show that to build customer loyalty, hotels need to increase customer satisfaction, build trust, and develop customer-based brand equity (CBBE).

With all this, it is possible to propose the fourth research hypothesis, H4: The perception of brand loyalty positively influences the perception of brand equity among stakeholders in Spanish public universities.

2.3. Comparison of perceptions of brand equity according to the role of the university stakeholders involved

In terms of brand awareness, Mourad *et al*. (2011) consider that students perceive greater brand awareness each time they remember the brand (either because of studies carried out or because of a specific moment), while employees perceive greater brand awareness as the university itself becomes more recognised nationally and internationally. In terms of brand image, McAlexander *et al*. (2006) argue that it is important for university staff to build long-term relationships with students, while Brown and Mazzarol (2009) state that whenever the quality of the university service increases, students (or the alumni community) will maximise their positive feelings about the brand image.

In terms of perceived quality, Díaz *et al*. (2002) argue that employees will maximise their perception of quality if they are helped to grow professionally (e.g., through training in their field of specialisation), while students' perception depends on the future opportunities they have after graduation. Finally, in terms of brand loyalty, Hennig *et al*. (2001) state that employees will feel more loyal to their university if certain needs that they consider fundamental are met (such as salary or certain social benefits), whereas students will rely more on confirmation of staff commitment to their university, organisational flexibility, and reasonable fees.

With all this, it is possible to propose the fifth research hypothesis, H5: The perception of brand equity differs significantly between the internal stakeholders (lecturers and service staff) and the external stakeholders (students) in Spanish public universities.

In view of the above, Figure 1 shows our proposed theoretical model designed to defend the present research.

Figure 1.

Theoretical model proposed for this research
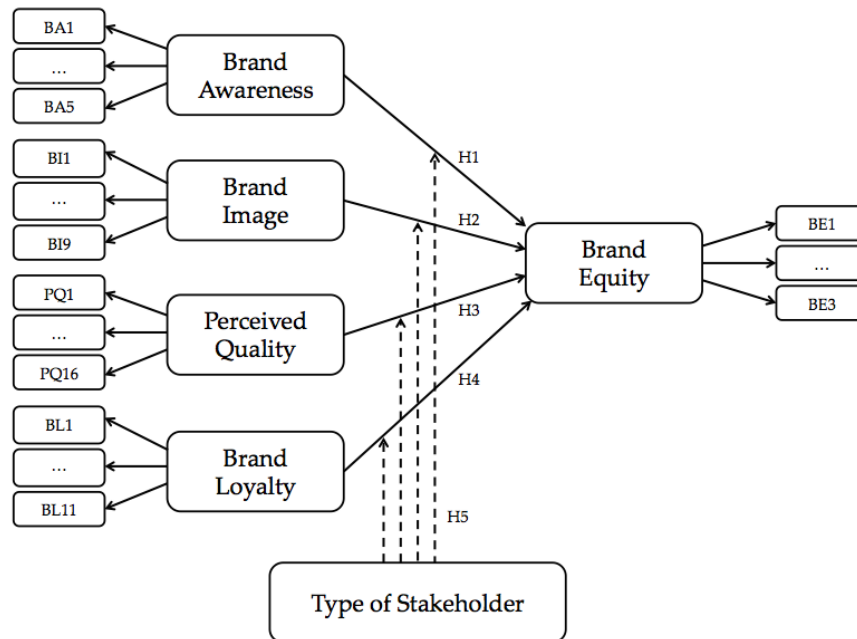
Source: Own elaboration.

3. Methodology

To test the hypotheses and achieve the proposed objectives, a quantitative study was carried out in Valencia (Spain), chosen because it is perceived by the student market as a major educational centre, thanks to the creation in recent years of eight higher education centres (both university and affiliated centres), which have projected the image of the city at a national level.

A non-probabilistic convenience sample was used to quantify the target population, using official data from the two reference public universities (University of Valencia and Polytechnic University of Valencia). In this way, it was possible to verify that a total of 106,359 stakeholders were involved, of which 96,818 were students (66.04% from the University of Valencia and 33.96% from the Polytechnic University of Valencia), 6,100 were lecturers (63.10% from the University of Valencia and 36. 90% from the Polytechnic University of Valencia) and 3,441 were service staff (53.85% from the University of Valencia and 46.15% from the Universidad Politécnica de Valencia), all of them employees or students of one of the universities surveyed at the time of the research.

Level 5 Likert scales (1= strongly disagree and 5= strongly agree) were used to measure the concepts of (1) brand awareness, (2) brand image, (3) perceived quality, (4) brand loyalty and (5) brand equity. All of them were based on the measurement scale proposed by Casanoves, Pinazo and Flores (2020) for the higher education sector. The information was collected through a questionnaire in digital and paper format, distributed to a total of 1,267 stakeholders. After collecting and cleaning the information, a total of 1,246 valid surveys were obtained, 609 from internal stakeholders (353 lecturers, 256 service staff) and 658 from external stakeholders (students).

In terms of sample profile, it is a mixed group of men and women (heterogeneous sample), with responses from 29 different nationalities, with Spain representing the largest number (87.48%). This means that approximately 48% of the sample comes from internal sources within the university (28% from teaching staff and 20% from service staff) and 52% from external sources (students), which means that the percentages are almost equal between the two. In addition, and in terms of seniority, around 58% of the lecturers and 54% of the service staff respondents have been employed for more than 10 years and have a full-time contract. It can therefore be assumed that the responses received from most respondents are of high quality, as they come from university representatives with a good knowledge of the functioning and know-how of their university. It is also worth noting the high level of participation achieved and the low percentage of respondents who did not answer any of the classification questions (6.42%).

Finally, the data analysis techniques are based on descriptive statistics and multivariate analysis, using SPSS v.19 for Windows as a working tool for descriptive techniques and EQS 6.2 to carry out multivariate techniques. The statistical treatment of the data used in this study involves the application of different methods of analysis, distinguishing between: (1) description and classification of the data, (2) hypothesis testing and (3) analysis of variance.

4. Results and discussion

Firstly, the psychometric characteristics of the instrument were examined, analysing the quality of each of the proposed items and validating the instrument (see Table 1). The sampling error was calculated for the total of 106,359 university stakeholders involved, obtaining an error of 1% for a confidence level of 99% (estimation of the maximum error committed in the estimation of proportions p=q=50%).

Table 1.

Reliability and Convergent Validity

Factor	Indicator	Load	t Robust	CA	CR	AVE
Brand Awareness	BA1	0.4***	12.2			
	BA2	0.8***	23.7			
	BA3	0.9***	30.5	0.8	0.9	0.6
	BA4	0.8***	30.6			
	BA5	0.8***	29.5			
Brand Image	BI1	0.6***	18.7			
	BI2	0.7***	22.1			
	BI3	0.8***	26.4			
	BI4	0.7***	22.9	0.9	0.9	0.5
	BI5	0.7***	24.9			
	BI6	0.7***	21.3			
	BI7	0.7***	21.4			
	BI8	0.7***	21.8			

	BI9	0.7***	22.0			
	PQ1	0.7***	22.3			
	PQ2	0.7***	24.1			
	PQ3	0.8***	28.8			
	PQ4	0.6***	18.1			
	PQ5	0.6***	17.7			
	PQ6	0.6***	18.7			
	PQ7	0.6***	18.0			
Perceived	PQ8	0.8***	27.2			
Quality	PQ9	0.7***	23.9	0.9	0.9	0.5
	PQ10	0.7***	23.6			
	PQ11	0.6***	17.7			
	PQ12	0.7***	24.5			
	PQ13	0.7***	25.7			
	CP14	0.7***	23.3			
	PQ15	0.7***	24.2			
	PQ16	0.6***	17.7			
	BL1	0.8***	24.6			
	BL2	0.8***	28.4			
	BL3	0.8***	28.4			
	BL4	0.9***	34.7			
	BL5	0.8***	27.8			
Brand	BL6	0.6***	16.0	0.9	0.9	0.5
Loyalty	BL7	0.8***	27.7			
	BL8	0.5***	14.1			
	BL9	0.8***	26.8			
	BL10	0.7***	22.9			
	BL11	0.6***	19.0			
Brand	BE1	0.6***	19.3			
Equity	BE2	0.8***	25.3	0.7	0.7	0.5
	BE3	0.6***	18.9			

N = 1,246; ***p<0.01; **p<0.05; * p<0.1; Satorra-Bentler χ2 (p) = 5,999.48 (0.0000), df= 1,263

NFI = 0.8; NNFI = 0.8; CFI = 0.8; IFI = 0.8; RMSEA = 0.07

Source: Own elaboration.

Reliability was tested using three methods of analysis: (1) Cronbach's α (CA), which in all cases obtained values equal to or greater than 0.7 (Nunnally and Bernstein, 1994); (2) composite reliability (CR) analysis, which also obtained values equal to or greater than 0.7 (Carmines and Zeller, 1979); and (3) average variance extracted (AVE) analysis, which obtained results equal to or greater than 0.5 (Fornell and Larcker, 1981).

In parallel, 8 items were eliminated from the original 52 (two belonging to brand image, five to perceived quality and one to brand equity), mainly due to their low factor loading (Bagozzi and Yi, 1988). Nevertheless, it should be emphasised that no factor had to be eliminated, thus maintaining the initial structure of the proposed construct. Furthermore, although factor loadings around 0.6 are not obtained for each of the items, it is useful to bear in mind that the standardised averages are higher. Therefore, the convergent validity of the proposed model would be confirmed.

In addition, the RMSEA= 0.07 indicator also shows a good fit, as its value is less than 0.08 (Steiger, 1990), indicating that the structural model fits the data structure well. However, the model fit indices (NFI= 0.8; NNFI= 0.8; CFI= 0.8; IFI= 0.8) have values lower than those recommended by Hair *et al*. (2005), which should be 0.9. This indicates that the results should be interpreted with caution, as these indices are not excellent.

Secondly, and using a structural equation model based on the robust maximum likelihood method, the hypothesis test was carried out, as shown in Table 2.

Table 2.

Hypothesis test

Hypothesis	Structural relationship	β Estand.	*t* Robust	Criterion
H1	Brand Awareness Perception --> Brand Equity Perception	0.2***	3.9	Accepted
H2	Brand Image Perception --> Brand Equity Perception	0.6***	4.9	Accepted
H3	Perceived Quality Perception --> Brand Equity Perception	0.1	1.3	Rejected
H4	Brand Loyalty Perception --> Brand Equity Perception	0.2***	2.7	Accepted

N = 1,246; ***p<0.01; **p<0.05; * p<0.1; Satorra-Bentler χ2 (p) = 5,999.48 (0.0000), df= 1,263
NFI = 0.8; NNFI = 0.8; CFI = 0.8; IFI = 0.8; RMSEA = 0.07

Source: Own elaboration.

The results suggest that the model developed in this research, applied to the set of stakeholders involved, is satisfactory in explaining 3 of the 4 hypotheses raised. Thus, a positive relationship has been demonstrated between perceptions of brand awareness, brand image and brand loyalty in relation to brand equity, accepting the first hypothesis (H1: β = 0.20; p < 0.01), the second hypothesis (H2: β = 0.55; p < 0.01) and the fourth hypothesis (H4: β = 0.19; p < 0.01). In other words, positive perceptions of the brand equity of a Spanish public university will be consolidated as positive perceptions of brand awareness, brand image and brand loyalty. And the most important variable in the construction of brand equity is brand image, which

supports the contributions generated by different authors (Faircloth *et al.*, 2001; Karupannan and Vijayakumar, 2012; Nasib *et al.*, 2022), who explain that this variable is key to the implementation of a correct educational brand strategy. However, regarding the third hypothesis (H3: β = 0.12; ns), no positive relationship was found between the perceived quality and brand equity of the 1,246 stakeholders from Spanish public universities surveyed.

Thirdly and finally, an analysis of variance was carried out for each of the variables in the proposed model, with the aim of extracting the arithmetic mean by response and type of stakeholder, internal (lecturers and service staff) and external (students), to compare perceptions of brand equity, as shown in Table 3.

Table 3.

Differences between groups (ANOVA)

Variable	Group	DESCRIPTIVES		ANOVA		PH BONF	
		M	DT	F	SIGN	COMP	P
Brand Awareness	Students	3.47	0.71	50.25	.000	$1 \neq 2$	.000
	Lecturers	3.91	0.81			$1 \neq 3$	.000
	Service Staff	3.99	0.76				
Brand Image *	Students	3.21	0.61	49.93	.000	$1 \neq 2$	.000
	Lecturers	3.56	0.70			$1 \neq 3$	.000
	Service Staff	3.64	0.71				
Brand Loyalty *	Students	3.17	0.73	45.30	.000	$1 \neq 2$	.000
	Lecturers	3.59	0.86			$1 \neq 3$	.000
	Service Staff	3.66	0.89				

*Post hoc Games-Howell

Source: Own elaboration.

As can be seen, there are differences in perceptions between students and lecturers, and students and service staff in terms of brand awareness, brand image and brand loyalty. From another perspective, perceptions of brand equity differ depending on whether they are external stakeholders (students) or internal stakeholders (lecturers and service staff). We accept H5, which supports the contributions found in the literature (Brown and Mazzarol, 2009; Hennig *et al.*, 2001; McAlexander *et al.*, 2006; Mourad *et al.*, 2011), which state that there are significant differences depending on the type of stakeholder (internal or external) and the brand equity variable studied.

5. Conclusions

After visualising the results, on the one hand, the proposed model showed a positive and direct relationship in the perceptions of brand awareness, brand image and brand loyalty in relation to brand equity, accepting the first, second and fourth hypotheses and supporting other works related to brand awareness (Azzari and Pelissari, 2021; Huang and Sarigöllü, 2012; Świtała *et al.*, 2018), brand image (Faircloth *et al.*, 2001; Karupannan and Vijayakumar, 2012; Nasib, Azhmy *et al.*, 2022) and brand loyalty (Hossien *et al.*, 2012; Sürücü *et al.*, 2019; Taylor *et al.*, 2004) found in the literature. And the most significant variable in the construction of brand equity is brand image. However, no positive relationship was found between the perception of perceived quality and brand equity, which rejected the third hypothesis. On the other hand, the results of the multisample analysis confirm that there are differences in perception depending on whether they are external stakeholders (students) or internal stakeholders

(lecturers and service staff). We accept the fifth hypothesis, H5, confirming the studies of different authors (Brown and Mazzarol, 2009; Hennig *et al.*, 2001; McAlexander *et al.*, 2006; Mourad *et al.*, 2011) found in the literature.

From these results, three management implications are proposed. Firstly, in terms of brand awareness, significant differences in perception are observed between the different university stakeholders involved, internal (lecturers and service staff) and external (students), highlighting that (1) service staff, in general, have a greater perception in the set of items, emphasising that they have a good knowledge of their university and would more strongly recommend undergraduate studies if they decided to undertake new studies; (2) lecturers also stand out for their preference for undergraduate studies and for their good opinion of their university; and (3) students also stand out for their good knowledge of the brand and their preference for a degree course, even though they are generally the least aware of the brand. It is therefore recommended that university managers develop actions to improve brand awareness among their students.

Secondly, regarding brand image, it should be remembered that it is the most important variable in the construction of brand equity. As in the previous case, significant differences in perception are observed between internal and external university stakeholders, highlighting that, (1) service staff, in this case too, have a better opinion on all points. This highlights their trust in the university and the degree of efficiency and effectiveness in terms of the service provided by their university and the satisfaction of needs; (2) lecturers stand out for having a better opinion of their colleagues and students, as well as their sense of professional growth; and (3) students stand out above all for their trust in the university, their good reasons for studying there and their professional development through their studies. Although, as in the previous case, it is the group that has the lowest perception of the brand image. It is therefore recommended that university managers develop measures to improve the university's brand image towards its students.

Thirdly and finally, in terms of brand loyalty, differences in perception are also observed between the two types of university stakeholders (internal and external), highlighting that (1) service staff are the ones who most like what the university brand conveys and are interested in learning more about the educational institution. They are also the ones who identify most with the values of the university and with their own classmates, highlighting their good relationship with them; (2) lecturers are very proud that others know they work in this public institution, they have a strong sense of belonging to it, they like to talk about their university with other people, and they often follow the news in person and/or digitally; and (3) students stand out in that they are proud to belong to their university, have a strong bond with their classmates and like to talk about their university with other people. Given this, and the fact that, as with the previous variables, students are the ones who give the lowest scores, it is suggested that educational managers should consider marketing programmes that maximise student involvement, as they will act as brand ambassadors for their universities and greatly enhance their educational brand.

As research limitations, the model has been contrasted based on the opinions of the stakeholders in a specific period of time and of two universities in Valencia (Spain). Therefore, it is recommended to extend this study to other universities and to compare the stakeholders' perceptions in other institutions and countries. As future research lines, it would be interesting to complement the present work with a digital study, to carry out comparative analyses between the offline and online environments, and thus verify whether there are differences between the stakeholders involved in both ecosystems. In addition, people outside the university (e.g., future students) could be included in the study to compare the perceptions

of current and potential stakeholders. And even the companies and institutions that employ students to carry out training practices. It would also be interesting to include the perception of brand equity by university managers, to make comparisons between employers and employees (internally) and managers and students (externally). Finally, longitudinal studies could be considered to examine possible changes in their perceptions over time to see if this influences them in any way.

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ANNEXES:

English wording of items and questions used. Please indicate your level of agreement or disagreement with the following statements (1 = strongly disagree; 5 = strongly agree).

Brand Awareness (BA)
- BA1: I have a good knowledge of my university.
- BA2: I have a good opinion of my university.
- BA3: If I were to decide to do an undergraduate degree, I would consider my university.
- BA4: If I decided to do postgraduate studies, I would consider my university.
- BA5: If I decided to do some postgraduate studies, I would consider my university.

Brand Image (BI)
- BI1: I have a good opinion of the students/staff at my university.
- BI2: I have reasons to study/work at my university instead of others.
- BI3: My university: gives me confidence.
- BI4: It offers me special advantages.
- BI5: It has a rich history.
- BI6: The service meets my needs.
- BI7: The service is effective and efficient (in terms of speed, responsiveness, etc.).
- BI8: The fees are generally lower than at other universities.
- BI9: It is easy to get maintenance and service at my university.
- BI10: People I admire, and respect would want to study/work at my university.
- BI11: I feel that I have grown professionally thanks to my university.

Perceived Quality (PQ)
- PQ1: In terms of quality-price ratio, my assessment of my university is good.
- PQ2: My assessment of my university is good in terms of study hours/qualifications/working hours.
- PQ3: In general, my university meets my needs.
- PQ4: My university as a brand is relevant to me.
- PQ5: Lecturers at my university are innovators.
- PQ6: Lecturers are interested in students' opinions.
- PQ7: Teachers are interested in the opinions of their colleagues.
- PQ8: The teaching staff at my university are admired and respected.
- PQ9: Service staff at my university are innovative.
- PQ10: Service staff are interested in students' opinions.
- PQ11: Service staff are interested in the opinions of their colleagues.
- PQ12: Service staff admire and respect my university.
- PQ13: I would recommend my university to others.
- PQ14: My university: offers me some advantages that another university would not.
- PQ15: It is exciting.
- PQ16: It gives me a sense of enjoyment.
- PQ17: It makes me feel warm.
- PQ18: It gives me a sense of security in terms of possible integration into the labour market.
- PQ19: It gives me a sense of stability as a student.
- PQ20: It gives me a feeling of self-respect.

- PQ21: It gives me a feeling of social recognition.

Brand Loyalty (BL)
- BL1: I am proud that others know that I study/work at my university.
- BL2: My university is the kind of university I want to study/work at.
- BL3: I like what the brand of my university conveys more than any other.
- BL4: My university is special to me.
- BL5: I identify with the values of my university.
- BL6: I identify with the values of my fellow students/work colleagues.
- BL7: I feel a sense of belonging to my university.
- BL8: I feel connected to my study/work colleagues.
- BL9: I enjoy talking about my university with other people.
- BL10: I am interested in finding out more about my university.
- BL11: I often follow the news about my university (in person and/or digitally).

Brand Equity (BE)
- BE1: In general, I have a high level of knowledge about my university.
- BE2: In my opinion, my university provides good value for money.
- BE3: My overall opinion of my university is good.
- BE4: I consider myself to be a loyal student/employee of my university.

AUTHORS' CONTRIBUTIONS, FUNDING AND ACKNOWLEDGEMENTS

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