The university image: a model of overall image and stakeholder perspectives

La imagen de la universidad: un modelo de imagen global y las perspectivas de los grupos de interés

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Abstract:

In order to further knowledge regarding the factors that have most influence on the university image, a measurement model was established in this research from the perspective of society and validated using covariance structure analysis. In addition, to ascertain whether such factors and/or their degree of influence differ among stakeholders, an evaluation of measurement invariance was conducted to find out what implications there are for image formation when the perspectives of the different stakeholders are considered. Five samples of stakeholders were used (society, prospective students, current students, graduates, and companies), totaling 1760 respondents. The results showed that affective image, perception of teaching resources, and perception of graduate training significantly influence the formation of overall university image from the perspective of society and that the image structure identified from this perspective is shared by companies, although some differences are observed. However, the model needs adapting to consider the perspectives of prospective students, current students, and graduates. The results also suggested that affective issues have a major importance in image formation from the perspective of all the stakeholders considered and that it is in the cognitive aspects where differences between them become more patent. These findings constitute a valuable contribution for marketing literature as so few works have addressed the study of the university image adopting the standpoint of society or the comparison of different stakeholders. Further, they provide guidance to university managers when determining which aspects are recommendable to act upon for the projection of a favorable image to various audiences.

Keywords:

University, higher education, image, stakeholders, formative measurement model, measurement invariance.

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Resumen:

Con el fin de avanzar en el conocimiento de los factores que influyen sobre la formación de la imagen de las universidades, en esta investigación se planteó un modelo de medición desde la perspectiva de la sociedad que fue validado utilizando técnicas de análisis de estructuras de covarianzas. Además, se realizó una valoración de la invarianza en la medición orientada a conocer las implicaciones que tiene sobre la formación de la imagen la consideración de perspectivas de diferentes colectivos. Se seleccionaron cinco muestras (sociedad, alumnos potenciales, alumnos actuales, titulados y empresas) que sumaron 1760 encuestados. Los resultados revelaron que la imagen afectiva y las percepciones sobre los recursos docentes y la capacitación de los titulados influyen de manera significativa en la formación de la imagen desde la perspectiva de la sociedad, y que la estructura de la imagen identificada desde dicha perspectiva es compartida por las empresas, aunque con ciertas diferencias. Sin embargo, el modelo demanda adaptaciones al considerar las perspectivas del alumnado potencial, actual y titulado. Las cuestiones afectivas se revelaron determinantes en la formación de la imagen en los cinco colectivos, radicando las diferencias en aspectos cognitivos. Estos resultados representan una contribución de valor para la literatura de marketing dados los escasos trabajos que han analizado la imagen de la universidad desde la perspectiva de la sociedad o que han comparado stakeholders. Además, pueden orientar a los gestores universitarios en la determinación de los aspectos sobre los que conviene actuar para proyectar una imagen favorable hacia audiencias diversas.

Palabras clave:

Universidad, educación superior, imagen, grupos de interés, modelo de medida formativo, invarianza en la medición.

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1. INTRODUCTION

University managers have begun to recognize the strategic importance of possessing a solid brand (Balmer and Liao 2007) and set aside increasing resources to strengthen the image of the institutions they manage (Curtis et al. 2009). Indeed, researches have evidenced the positive influence exerted by a favorable image on diverse aspects such as the process students engage in when choosing a university, student satisfaction, perceived service value, pride in belonging to the institution, trust in the university, loyalty toward it, acceptance of graduates in the job market, the securing of funding, and the recruitment of the right teachers (for example, Beerli et al. 2002; Helgesen and Nesset 2007; Wilkins and Huisman 2013; Aghaz et al. 2015; Elsharnouby 2015).

Image management is, nonetheless, not without its difficulties for universities (Curtis et al. 2009). There is still little known about aspects that, according to some authors (Hayes 1993; Curtis et al. 2009), are critical for the effective and efficient managing of the university image. Prominent among them are the multiplicity of stakeholders that universities serve and the effects produced by different factors upon that image. And, although the interest that researchers show in the study of university image is steadily growing (Sung and Yang 2008; Curtis et al. 2009; Aghaz et al. 2015), those who have examined the subject in depth consider that attention in the field of academic research has been scarce (for instance, Curtis et al. 2009; Duarte et al. 2010; Wilkins and Huisman 2015) and that more empirical research is needed (Aghaz et al. 2015).

Thus, while the idea that university image is a multidimensional concept subject to the influence of a variety of aspects is shared by academics (Kazoleas et al. 2001; Nguyen and LeBlanc 2001; Beerli et al. 2002; Arpan et al. 2003; Luque and Del Barrio 2008; Aghaz et al. 2015), there is no consensus as to the dimensions that comprise it (Lafuente-Ruiz-de-Sabando et al. 2018). Additionally, although authors coincide in the view that university image may vary depending upon the audience that perceives it (Treadwell and Harrison 1994; Kotler and Fox 1995; Landrum et al. 1999; Karrh 2000; Vidaver-Cohen 2007; Duarte et al. 2010; Wilkins and Huisman 2013, Aghaz et al. 2015; Wilkins and Huisman 2015), most research carried out within the university context has concentrated on the student perspective, few studies have contemplated more than one stakeholder, let alone attempted to identify similarities and divergences among stakeholders, and we have not detected a single work that has attempted to do so following a common factor structure. In consequence, very little is known about the origin and magnitude of the differences and coincidences that exist in university image formation among different stakeholders (Lafuente-Ruiz-de-Sabando et al. 2018). For this reason, Luque and Del Barrio (2008) suggest the advisability of working toward the identification of the fundamental aspects that shape the structure of the "core image" of a university (that is, aspects whose importance is shared by all stakeholders) and, in common with other authors (Landrum et al. 1999; Arpan et al. 2003; Ressler and Abratt 2009; Duarte et al. 2010; Bakanauskas and Sontaite 2011; Aghaz et al. 2015), encourage researchers to consider and compare in their studies the perspectives held by various audiences and to apply to different stakeholders measurement instruments that have already been validated.

The situation described underlines the need to have a better understanding of how university image is configured, identifying the essential aspects that affect its formation and whether they are equivalent for the different stakeholders or, on the contrary, show differences. With this aim in mind, three research objectives were set. Firstly, to develop and validate a measurement model capable of explaining the formation of overall university image from the perspective of society. Secondly, to determine whether there are relevant differences in the formation of overall university

image depending on whether the perspective adopted is that of society or, respectively, that of the other four stakeholders considered in this work: prospective students, current students, graduates, and companies. The third objective was to identify the features whose relevance for the formation of overall university image is shared by all or by some of the stakeholders under consideration.

Many collectives have been identified in the literature as university stakeholders (Kotler and Fox 1995; Marzo et al. 2007). The choice of society as the collective to be studied, despite the scant attention paid to it in preceding empirical works, was due to it constituting the largest stakeholder, bringing together the entire set of groups that can be identified, and amalgamating the interests and perceptions of them all. This opens the way, once a model has been validated from the perspective of this group, to put in place an approach geared to test the potential differences that image formation might undergo on adopting the perspectives of other groups. Further, society was identified in the literature as one of the stakeholders of the greatest strategic importance for universities (Marzo et al. 2007). Ressler and Abratt (2009), meanwhile, are of the view that universities should at least study the perceptions held about them by prospective students, current students, graduates and employers or companies. Although other collectives also deserve attention, the impossibility of conducting an analysis of them all, along with the fact that these stakeholders are priority targets of the university's primary services (teaching and research), led us to also highlight the four above-mentioned collectives in this investigation.

When planning the research, we considered that achievement of the objectives mentioned would give rise to various contributions of value for the academic literature and for image management in the university field. From the academic perspective, the development and validation of a measurement model capable of explaining the formation of overall university image from the perspective of society contribute to the growing body of literature on higher education (HE) image as it is a stakeholder that has scarcely been studied. Furthermore, study of differences and coincidences in image formation among stakeholders will hopefully facilitate progress towards the construction of a general measurement model that can be applied in various collectives. From a managerial perspective, pinpointing the magnitude of the potential differences that exist between the perspective of society and those of the other four collectives would help to assist university managers to choose the associations or features that it would be useful to concentrate on for each stakeholder. In short, identification of the coincidences and divergences that exist between stakeholders is expected to provide assistance for universities in the production of messages and behaviors that are more aligned with stakeholder interests and consistent between collectives and over time.

2. THE UNIVERSITY IMAGE

The growth of publications focused on the concept of HE image during the past decade reveals a growing interest in the topic among academics (Sung and Yang 2008; Curtis et al. 2009; Aghaz et al. 2015). As shown in Table 1, research has been mainly focused on study of the dimensions comprising the construct, its measurement and how it relates with other variables. However, there are still areas that have received little attention, such as the perspectives of stakeholders other than the student body or the differences and/or coincidences that might exist in image formation among different stakeholders (for more details about the state of the art in research on HE image and reputation see the literature review article by Lafuente-Ruiz-de-Sabando et al. 2018).

Table 1

Research on higher education image and reputation: main objectives and stakeholders studied

Authors	Objective (1)	(2)	(3)	Stakeholder Prospective students	Current students	Graduates	Faculty	Administrative staff	University managers	Students' parents	Employers	Society
Alexander (1971)	*			*								
Reid (1973)	*			*								
Krampf and Heinlein (1981)	*			*								
Milo et al. (1989)		*		*								
Bardo et al. (1990)	*					*						
Theus (1993)	*								*			
Treadwell and Harrison (1994)	*		*		*		*	*				
Parameswaran and Glowacka (1995)		*									*	
Landrum et al. (1999)		*								*		
Kazoleas et al. (2001)	*											*
Nguyen and LeBlanc (2001)		*			*							
Beerli et al. (2002)	*	*			*							
Traverso (2002)	*		*		*		*	*				
Arpan et al. (2003)	*		*		*							*
Alessandri et al. (2006)		*			*							
Bosch et al. (2006)	*	*			*	*		*				
Helgesen and Nesset (2007)	*	*			*						*	
Baker and Brown (2007)		*				*						
Luque and Del Barrio (2008)	*						*					
Sung and Yang (2008)	*				*							
Brown and Mazzarol (2009)	*	*			*	*						
Zaghloul et al. (2010)	*				*							
Maric et al. (2010)	*				*	*						

Authors	Objective			Stakeholder								
	(1)	(2)	(3)	Prospective students	Current students	Graduates	Faculty	Administrative staff	University managers	Students' parents	Employers	Society
Duarte et al. (2010)	*				*							
Pampaloni (2010)		*			*							
Alves and Raposo (2010)		*			*							
Polat (2011)		*			*							
Cervera et al. (2012)	*		*			*						
Matherly (2012)	*	*	*	*	*	*	*					
Kheiry et al. (2012)		*			*							
Draelants (2012)		*			*							
Wilkins and Huisman (2013)	*	*		*								
Tamuliene and Murzaite (2013)		*			*	*						
Chen and Chen (2014)		*			*							
Aghaz et al. (2015)	*	*				*						
Wilkins and Huisman (2015)		*		*								
Chen (2015)		*			*							

(1) Identification of the aspects/dimensions/facets that make up the image/reputation of HE institutions or proposal of a measurement model for the image/reputation of HE institutions.
(2) Relation of the image/reputation of HE institutions with other variables.
(3) Comparative analysis of various HE institutions stakeholders' perspectives.

Source: Adapted from Lafuente-Ruiz-de-Sabando et al. (2018).

2.1. **Definition of the university image**

Due to its complexity, but also to the fact that it has been studied from diverse field perspectives (such as marketing, business strategy, and organizational behavior), the concept of corporate image has been tackled by academics in very different ways, and this is also reflected in the wording that some authors have adapted to the university context. Ivy (2001), for instance, defined the image of a HE institution as "a function of the strategies that higher education institutions use, how they are implemented, and how they are perceived by their publics (p. 276)". This definition encompassed aspects that Alessandri et al. (2006) brought together in two differentiated concepts: identity and university image. For Alessandri et al. (2006), the identity of a university referred to "its strategically planned and purposeful presentation of itself in order to gain a positive image in the minds of the public (p. 259)", whilst its image was "the public's perception of the university (p. 259)". Duarte et al. (2010) and Zaghloul et al. (2010) adopted an approach that more resembled that of Alessandri et al. (2006). They understood university image as "the sum of all the beliefs an individual has towards the university (Duarte et al. 2010, p. 23; Zaghloul et al. 2010, p. 158)". However, Arpan et al. (2003) or Kazoleas et al. (2001) held a different perspective. Arpan et al. (2003) considered university image to concern the "various beliefs about a university that contribute to an overall evaluation of the university (p. 100)", while Kazoleas et al. (2001) contended that "corporate image is, in essence, a collection or set of "images" in the receiver (p. 206)" and hold that the same individual may have different images of the same organization.

In line with the proposal of Alessandri et al. (2006), we consider that identity has a controllable nature and deals with the transmitter of the communication process (the organization), whilst image has to do with perceptions of the receiver. So, in this research, the concept of overall university image was defined as the evaluations that the different stakeholders make of a university through perceptions, beliefs, ideas, and impressions that, as the consequence of a consistent expression over time, they have accumulated about it. This definition is also aligned with the meaning generally attributed to the concept of corporate image by researchers in the marketing domain.

2.2. **University image and stakeholders**

It is largely accepted in the literature that the image of a university can vary in accordance with the audience perceiving it (Treadwell and Harrison 1994; Kotler and Fox 1995; Landrum et al. 1999; Karrh 2000; Vidaver-Cohen 2007; Ressler and Abratt 2009; Duarte et al. 2010; Aghaz et al. 2015). These different images that various stakeholders form of one and the same university have been labeled by some authors as "satellite images" (Luque and Del Barrio 2008) and are an obstacle to the formulation of integrated marketing solutions (Karrh 2000). However, the same authors affirm that, along with the different satellite images, a "core image" exists "bearing the universal features and characteristics" of the organization, that is, "of the beliefs or meanings that [the different stakeholders] share (Luque and Del Barrio 2008, p. 3)". So, Luque and Del Barrio (2008) consider that the core image coordinates the satellite images and suggest work be put into identification of the most basic aspects that configure the structure of a university's core image.

Yet little is known of the origin and magnitude of the possible differences that exist in university image formation in terms of the stakeholder considered. This is because, as we note in Table 1, most researches have been carried out from the perspective of a single university stakeholder (normally the current student), as there are very few empirical works whose populations have been made up by more than one stakeholder. Indeed, most of the foregoing works studied the set of collectives as an aggregate and scarcely any were geared to identifying potential differences and coincidences in image formation. With regard to the latter aspect, Treadwell and Harrison (1994) observed that the current students, faculty and staff of an HE institution had different perceptions of it, while Traverso (2002) and Arpan et al. (2003) developed and validated measurement models for various collectives: the former for the university's students, teaching and research staff, and the administration and services staff, and the latter for university students and citizens. In these works, the measurement instruments were developed and validated in an individualized manner for each collective (although in the work by Arpan et al. (2003) the same questionnaire was used as the base). However, we did not find studies that, based on an equivalent factorial structure, conducted invariance tests to determine the origin and degree of the potential differences that the same measurement model might demand when considering different audiences. In order to further the findings of previous investigations, this is the approach we pursue in this exploratory study.

2.3. **Conceptualization of the university image: a higher-order formative construct**

As Lafuente-Ruiz-de-Sabando et al. (2018) concluded in a recently published literature review article, there is a broad consensus in the academic literature around the multidimensionality of university image, but not regarding the dimensions that comprise it. These authors observed that the list of dimensions considered in preceding works as components of university image is highly varied and extensive. Some cognitive aspects (such as academic issues, facilities and equipment) have frequently been considered in previous research. Others, with less presence in the literature, seem to be more associated with particular stakeholders (for example, those related to research, employability, social responsibility or integration with the environment) or geographical contexts (such as sports, which have only been considered in North American research). Meanwhile, although there is a growing idea among academics that affective assessments also influence image (Dowling 2001; Fombrun 2012), the presence of the emotional component in works on university image is still slight.

Taking into account that different stakeholders would be studied in this research, we tried to design a general measurement model that could be applied in various collectives. So, considering the main aspects identified in preceding works as explanatory of university image, and taking as a reference the proposal by Beerli et al. (2002) that the affective component be considered in addition to cognitive aspects, we conceptualized the overall university image from the perspective of society as a multidimensional construct composed of seven dimensions. These dimensions are: the perception that society has of the academic offer of a university, the perception of graduate training, of cost, of massification, of teaching resources, of research resources, and affective image.

Perception of the academic offer. Kazoleas et al. (2001) observed that the training program of a university was one of the factors that most influenced the formation of its image from the society perspective. A similar conclusion was reached by Duarte et al. (2010) in a research that considered the viewpoint of the students. These authors observed that the image of university degrees was positively related with university image. Rooted in preceding works, in this contribution we also considered the dimension "academic offer" and understood it as the perception society holds of the set of qualifications offered by a university, reflected in the beliefs it has about the number and variety of the qualifications awarded by the institution and their orientation (focused on adapting to the needs of the job market and/or on facilitating the cultural and intellectual enrichment of people).

Perception of graduate training. There are several works whose results have suggested that the orientation and training that a university provides its students (Beerli et al. 2002; Traverso 2002), opportunities for its graduates to make a transition into employment (Duarte et al. 2010; Matherly 2012), and the quality of study plans (Traverso 2002) and learning contents (Maric et al. 2010) exert a relevant positive influence on university image. Based on these works, we considered the dimension "graduate training" and defined it as society's perception of the skills a university develops in its students so they can take up a job after concluding their studies.

Perception of cost. Educational institutions need to obtain resources from various sources (student enrolments, money from taxpayers, donations or subsidies) to be able to offer their services. Different works that have developed or employed measurement models of university image have regarded the cost and/or funding of the institution as one of the variables that impact its formation (Landrum et al. 1999; Traverso 2002; Luque and Del Barrio 2008; Matherly 2012). In this regard, while Matherly (2012) considered cost for students, Landrum et al. (1999) took into account society's perception of the funding the university receives from the State. Accordingly, in this research we took perception of cost to be the way society perceives the scale of the economic sacrifice that student enrolments represent for its families, and the effort involved for a society in maintaining the universities that service it. Cost perception was expected to positively impact image when the economic sacrifice is perceived by society as reasonable, and negatively, when the opposite is true.

Perception of massification. Massification is an aspect that is supposed to negatively influence the image of a university and has been explored, in the main, by works developed in the Spanish university environment. So, Traverso (2002) and Luque and Del Barrio (2008) also referred to the "number of students at the university" and the "student/teacher indicator", respectively. While in the research by Beerli et al. (2002) the influence of massification on university image was not relevant, Luque and Del Barrio (2008) found that the student/teacher indicator was significantly related with image formation (adopting the teaching staff's viewpoint). In this research, we conceived "massification" as the way society perceives the relation between the number of students enrolled and the resources available for provision of the service.

Perception of teaching resources. Traverso (2002) identified the equipment and resources of a university, the quality of the teaching staff and the facilities, as elements through which students build their image of a university. Helgesen and Nesset (2007) came to a similar conclusion, detecting a positive significant relation between facilities and university image, and Maric et al. (2010) identified the quality of the teaching staff as the most

relevant variable in image formation. In this research, the "teaching resources" dimension was conceived to be society's perception of the availability and quality of a university's resources for providing services.

Perception of research resources. University teaching staff devote part of their time to research work. The results of this activity are of great relevance when evaluating the merits of academics, and are also considered in the compilation of university rankings. Nevertheless, few researches have examined the research facet among the variables impacting on image (for example, those of Kazoleas et al. (2001), developed from the perspective of society, and Luque and Del Barrio (2008), from that of teaching and research staff). In a research carried out by Mitra and Golder (2008), however, for the case of Business Schools, the authors concluded that academic research produces positive effects in the long term on the perceptions that academics, employers and seekers of training form about these bodies. So, in this work we also considered "research resources", in reference to society's perception of the research potential of a university.

Affective image. We agree with different authors that, in addition to cognitive dimensions, it is important to consider the affective component in the formation of the perceptions of a university (Beerli et al. 2002; Alessandri et al. 2006; Sung and Yang 2008, 2009; Bakanauskas and Sontaite 2011; Cervera et al. 2012). In this research, we understood "affective image" to be the set of human characteristics that people attribute to a university due to the feelings aroused from the direct and indirect experiences they have and have had of it.

After the facets of a multidimensional construct have been explained, "a second conceptual question that should be considered is the nature of the relationship between the sub-dimensions and the higher-order (more general) construct (MacKenzie et al. 2011, p. 301)". Taking into account the orientations provided by different authors to identify whether the nature of a construct is reflective or formative (Diamantopoulos and Winklhofer 2001; Jarvis et al. 2003; Brown 2006; Diamantopoulos and Siguaw 2006; Coltman et al. 2008; Bagozzi, 2011), we proposed a formative conceptualization for university image. The reasons that led us to adopt this measurement approach were the following: it is dimensions that bring about the overall image of a university and not the other way round; the dimensions are not interchangeable, as they each capture aspects of the overall image of a university that the others do not apprehend; the dimensions do not have to display strong mutual correlations (it is, for instance, possible to improve perception of resource endowment without an improvement in the perception of graduate skills); the dimensions do not necessarily have to totally share the same antecedents and consequences.

This approach is consistent with the most widespread perspective adopted in works developed in the area of university image. While most authors do not specify the type of relation that exists between the construct and its dimensions, the approach of their researches sets out to establish the criteria that determine the image or reputation of universities and/or the degree to which they influence it, which suggests a formative relation between the dimensions and image of a university. In fact, only in the works by Alessandri et al. (2006) and Cervera et al. (2012) have reflective approaches been identified (the dimensions are proposed as a reflection of the image concept). So, overall university image has been conceptualized in this research as a formative higher-order multidimensional construct.

3. METHODOLOGY

3.1. **Measures and data analysis**

University image was conceptualized as a formative second order construct (Figure 1) with first order dimensions measured with reflective indicators, proposing a model that was tested applying covariance structure analysis techniques.

Figure 1

Conceptual model
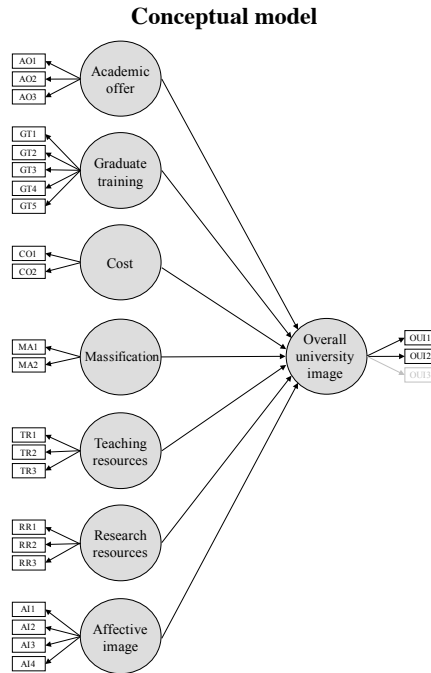
Source: Own elaboration.

The wording of the items was the same for all the groups (Table 2). Cognitive dimensions were measured with six-point Likert scales, while six-point semantic differential scales were used to measure affective image and global assessment of the Campus.

Table 2

The measurement model of the overall image of a university from the perspective of society

Dimensions	Item coding	Items[a]	Adapted from
Academic offer (AO)	AO1.	Offers a broad varied set of university courses	Beerli et al. (2002)
	AO2.	Offers courses demanded by the labor market	
	AO3.	The training offered is oriented toward cultural and intellectual enrichment	
Graduate training (GT)	GT1.	Students enter the university with a good training level	Landrum et al. (1999); Kazoleas et al. (2001); Beerli et al. (2002); Arpan et al. (2003); Alessandri et al. (2006)
	GT2.	Offers students the chance to study part of the course at other foreign or Spanish universities	
	GT3.	Equipped with sufficient internship programs in companies and institutions	
	GT4.	Provides the labor market with well-trained graduates	
	GT5.	Has suitable labor integration programs	
Cost (CO)	CO1.	The enrolment fees are reasonable	Landrum et al. (1999); Kazoleas et al. (2001)
	CO2.	Receives sufficient public funding	
Massification (MA)	MA1.	The number of students per classroom is adequate	Beerli et al. (2002); Traverso (2002)
	MA2.	Has sufficient administration and services staff	
Teaching resources (TR)	TR1.	Offers up-to-date facilities and equipment	Beerli et al. (2002); Arpan et al. (2003)
	TR2.	Has good teachers	
	TR3.	Invests sufficient resources in teacher training programs	
Research resources (RR)	RR1.	The teaching body researches a great deal	Kazoleas et al. (2001); Traverso (2002); Luque and Del Barrio (2008)
	RR2.	Has good researchers	
	RR3.	Invests large resources in research	
Affective image (AI)	AI1.	Agreeable-disagreeable	Russel and Pratt (1980); Beerli et al. (2002)
	AI2.	Boring-stimulating	
	AI3.	Stressful-relaxing	
	AI4.	Sad-cheerful	
Overall university image (OUI)	OUI1.	Enjoys good reputation and prestige	Landrum et al. (1999); Kazoleas et al. (2001); Beerli et al. (2002); Traverso (2002); Arpan et al. (2003)
	OUI2.	Global assessment of the Alava Campus of the UPV/EHU	
	OUI3.	Contributes to the province's economic development	

[a] Definitive items after carrying out a pre-test of the questionnaire with 113 people.

Source: Own elaboration.

Since classical criteria for analyzing internal consistency are not appropriate for evaluating formative models (Diamantopoulos and Winklhofer 2001; Jarvis et al. 2003; MacKenzie et al. 2011), we followed the suggestion to associate two reflective indicators, OUI1 and OUI2, with the principal construct to test the model's external validity via a MIMIC model (Diamantopoulos and Winklhofer 2001; Foedermayr et al. 2009) and to assess the contribution and significance of the dimensions through weights analysis.

Validation of the model was carried out in two stages: 1) via EQS 6.2, and using robust maximum likelihood estimation, a confirmatory factorial analysis (CFA) was performed on the indicators of the dimensions, analyzing reliability and convergent and discriminant validity; 2) the measurement instrument was validated for the society collective following the recommendations of Diamantopoulos and Winklhofer (2001).

Finally, a measurement invariance evaluation was carried out comparing the perspective of society with that of each of the other four collectives under study. This was done following the steps described by Buil et al. (2010), based on the procedure proposed by Diamantopoulos and Papadopoulos (2010) for assessing invariance in the measurement of formative measures. A third indicator, OUI3, was incorporated to evaluate the measurement invariance with greater guarantees.

3.2. **Data collection**

Data collection was conducted in Alava, a province of the Basque Country (Spain). Five samples representative of the collectives considered were selected via random sampling: 391 citizens over 16 years old (society), 364 prospective students, 367 current students, 288 university graduates and 350 representatives of companies (with 5 employees or more). The characteristics of the respondents are shown in Table 3.

Table 3

Characteristics of the different samples

Characteristics	Prospective students % (n=364)	Current students % (n=367)	Graduates % (n=288)	Companies % (n=350)	Society % (n=391)
Age (years)					
16-30	100.0	94.3	82.6	23.4	19.9
31-45		3.8	16.0	49.7	30.4
46-60		1.9	1.4	23.7	24.3
>60				2.3	25.3
Gender					
Male	44.5	39.5	34.4	39.7	48.6
Female	55.5	60.5	65.6	60.3	51.4
Studies or has studied at the University of the Basque Country (UPV/EHU)					
Yes				45.1	31.2
No				54.9	68.0
Has children or people living in their household who study or have studied at the University of the Basque Country (UPV/EHU)					
Yes				36.0	37.9
No				64.0	61.4

Characteristics	Prospective students % (n=364)	Current students % (n=367)	Graduates % (n=288)	Companies % (n=350)	Society % (n=391)
Their firm has entered into a contract, research project or license agreement with some Campus Centre in Alava					
Yes				11.4	
No				85.4	

Source: Own elaboration.

4. **RESULTS**

4.1. **Purification and evaluation of measurement instrument**

Successive CFAs were carried out based on the maximum likelihood estimation method. As the condition of multivariate data normality was not met (Mardia's Normalized Coefficient = 92.8806), the statistical correction proposed by Satorra and Bentler (1994) was chosen, employing robust statistics. To guarantee convergent validity, items AI3 and GT1 and the "massification (MA)" dimension were consecutively suppressed, this decision being supported from the viewpoint of logic and theory. The resulting model was integrated by 19 indicators corresponding to six dimensions, in addition to the two items associated with the main construct (Table 4).

Table 4

Validation of the measurement model

CFA results and psychometric properties of the measurement model							
Concept	**Item**	**Convergent validity**			**Reliability**		
		Factor loading	**Robust *t*-value**	**Loading average**	**Cronbach's α**	**CR**	**AVE**
AO	AO1	0.811**	15.225				
	AO2	0.832**	15.406	0.731	0.761	0.781	0.551
	AO3	0.550**	8.848				
GT	GT2	0.635**	9.780				
	GT3	0.834**	16.388	0.728	0.812	0.822	0.541
	GT4	0.608**	10.336				
	GT5	0.833**	15.423				
CO	CO1	0.728**	10.083	0.789	0.761	0.769	0.626
	CO2	0.850**	11.518				
TR	TR1	0.633**	8.781				
	TR2	0.774**	12.043	0.751	0.786	0.798	0.572
	TR3	0.846**	14.689				
RR	RR1	0.787**	12.841				
	RR2	0.883**	16.292	0.849	0.883	0.887	0.723
	RR3	0.878**	17.242				
AI	AI1	0.761**	13.152				
	AI2	0.785**	13.127	0.759	0.799	0.803	0.576
	AI4	0.730**	12.653				
OUI	OUI1	0.778**	14.160	0.771	0.741	0.745	0.594
	OUI2	0.763**	15.556				
Measures of fit							
S-B χ² (149 df) = 279.8477 (p=0.00)		**NFI**	**NNFI**	**CFI**	**IFI**	**RMSEA**	
χ²/df=1.88		0.874	0.918	0.936	0.937	0.047	

Note: CR=Composite Reliability; AVE=Average Variance Extracted
**p<0.01.

Discriminant validity

	AO	GT	CO	TR	RR	AI	OUI
AO	**0.551**	0.35	0.15	0.28	0.26	0.13	0.27
GT	[0.472, 0.704]	**0.541**	0.25	0.32	0.30	0.14	0.30
CO	[0.240, 0.532]	[0.370, 0.622]	**0.626**	0.14	0.10	0.03	0.06
TR	[0.405, 0.649]	[0.459, 0.671]	[0.224, 0.532]	**0.572**	0.56	0.24	0.41
RR	[0.373, 0.637]	[0.440, 0.656]	[0.167, 0.459]	[0.649, 0.841]	**0.723**	0.15	0.21
AI	[0.239, 0.483]	[0.256, 0.496]	[0.026, 0.306]	[0.378, 0.610]	[0.277, 0.505]	**0.576**	0.55
OUI	[0.396, 0.640]	[0.428, 0.672]	[0.080, 0.412]	[0.509, 0.773]	[0.332, 0.592]	[0.643, 0.839]	**0.594**

Note: Diagonal represents the average variance extracted; below the diagonal, the 95 per cent confidence interval for the estimated factors correlations; above the diagonal, squared correlations.

Results for MIMIC model

Path	Standardized γ	Robust *t*-value
AO ➜ OUI	0.138	1.889
GT ➜ OUI	0.202*	2.287
CO ➜ OUI	-0.075	-1.096
TR ➜ OUI	0.336**	3.033
RR ➜ OUI	-0.149	-1.530
AI ➜ OUI	0.520**	7.239

MIMIC model: reflective indicators		
Item	Standardized λ	Robust *t*-value
OUI1	0.778	Fixed to 1
OUI2	0.762**	13.611

Fit indices					
S-B χ^2 (149 df) = 279.9019 (p=0,00);	BBNFI	BBNNFI	CFI	IFI	RMSEA
χ^2/df=1.87	0.874	0.918	0.936	0.937	0.047

**p<0.01; *p<0.05.

Source: Own elaboration.

The value of the Chi-square test was significant (S-B χ^2=279.8477; 149 gl; p<0.01), which should be interpreted with caution as it is an indicator that is highly sensitive to sample size (Bentler and Bonett 1980; James et al. 1982). The remaining indicators presented values above or near to the levels of consensus acceptance in the literature (NFI=0.874; NNFI=0.918; CFI=0.936; IFI=0.937; RMSEA=0.047), suggesting that the global fit of the model was acceptable. Related to the analyses of reliability, all factors exhibited Cronbach's Alpha and composite reliability coefficients exceeding 0.7, and the average extracted variance was higher than 0.5. Convergent validity was also confirmed, as all the indicators presented significant standardized factorial loadings above 0.60 (Bagozzi and Yi 1988), except item AO3, whose loading was over 0.5 (Steenkamp and van Trijp 1991). Fulfilment of the confidence interval test and the extracted variance test confirmed the model's discriminant validity. To obtain content validity, the conceptual definition of domain was critical. In this work, it was associated with the process pursued to develop the measurement instrument (review of the literature related with the concept, determination of the underlying dimensions, and compiling of an extensive list of items that represented them as a step prior to their purification). In the light of the process followed and of the results shown we considered that the fitness of the factorial structure proposed was endorsed.

Having analyzed the psychometric properties of the constructs measured with reflective indicators, and when the absence of multicollinearity had been ascertained (Variance Inflation Factor<3), the MIMIC model represented in Figure 1 was estimated to check its external validity. The global fit indicators of the model were situated within the limits

traditionally suggested by the literature or close to them (Table 4), so we deemed the model's fit to be reasonable. Society's perception of graduate training, the idea about the provision of a university's teaching resources, and the affective image of a university were observed to have a significant and positive influence on image formation. The effect of the academic offer, cost, and research resources did not prove relevant.

An analysis of the weights showed that affective image is the component that most contributes to image formation (0.520), followed by teaching resources (0.336) and, lastly, graduate training (0.202). What stood out were 1) the greater degree of influence possessed by the affective component in image formation compared to cognitive aspects and 2) the weight of the teaching resources dimension, which was revealed to have greater influence on university image formation than graduate training. That is, perception of the environment proved more influential on image formation than did perception of the result of the educational process.

4.2. **Evaluation of measurement invariance of the university image**

To ascertain the degree to which university image formation coincides with or differs from its stakeholders, the society perspective was compared with those of prospective students, current students, graduates, and companies following the process described by Buil et al. (2010) to analyze the measurement invariance of a higher order formative model.

The properties of the model were analyzed in each of the four collectives, carrying out the same tests described in the previous section. In some stakeholders and dimensions, values somewhat lower than those recommended in the literature were observed, meaning that the measurement instrument validated for society displays weaknesses when the perspectives of some collectives are considered and, in particular, those of prospective and current students. Nonetheless, and given that the values did not reach those suggested in the literature but were close to them, progress was made in the analysis, although it is noted that due caution must be observed in the interpretation of the results. After confirming the absence of multicollinearity, a MIMIC model was estimated for each of the collectives studied (Table 5).

Table 5

Results for MIMIC model (single group solutions)

	MIMIC model: relations between dimensions and university image							
	Prospective students		**Current students**		**Graduates**		**Companies**	
Path	Standardized γ	Robust *t*-value	Standardized γ	Robust *t*-value	Standardized γ	Robust *t*-value	Standardized γ	Robust *t*-value
AO → OUI	0.383**	2.826	0.160	1.622	0.212*	2.049	0.106	1.158
GT → OUI	-0.071	-0.541	0.127	1.308	0.023	0.202	0.266**	2.584
CO → OUI	-0.130	-1.355	-0.184*	-2.379	-0.152	-1.867	-0.085	-1.265
TR → OUI	0.128	1.021	0.475**	3.005	0.086	0.427	-0.046	-0.515
RR → OUI	0.204*	2.493	-0.146	-1.198	-0.040	-0.382	0.127	1.683
AI → OUI	0.637**	5.553	0.562**	5.236	0.875**	5.678	0.778**	6.555
	MIMIC Model: reflective indicators							
Item	Standardized λ	Robust *t*-value	Standardized λ	Robust *t*-value	Standardized λ	Robust *t*-value	Standardized λ	Robust *t*-value
IG1	0.654	Fixed to 1	0.652	Fixed to 1	0.663	Fixed to 1	0.547	Fixed to 1
IG2	0.681**	10.341	0.729**	9.493	0.853**	10.557	0.734**	7.723
Fit indices	S-B χ²(131 gl)=168.555 (p=0.0150) χ²/df=1.29 BBNFI = 0.820 BBNNFI = 0.936 CFI = 0.951 IFI = 0.953 RMSEA = 0.028		S-B χ²(114 gl)=188.896 (p=0.00001) χ²/df=1.66 BBNFI = 0.897 BBNNFI = 0.940 CFI = 0.955 IFI = 0.956 RMSEA = 0.042		S-B χ²(131 gl)=180.655 (p=0.0026) χ²/df=1.38 BBNFI = 0.911 BBNNFI = 0.965 CFI = 0.973 IFI = 0.974 RMSEA = 0.036		S-B χ²(131 gl)=202.913 (p=0.00006) χ²/df=1.55 BBNFI = 0.839 BBNNFI = 0.914 CFI = 0.934 IFI = 0.936 RMSEA = 0.040	

* p < 0.05; ** p < 0.01

Source: Own elaboration.

Results showed that the global fit indicators were acceptable and that there were apparent differences and coincidences in relation with the most relevant image dimensions depending on the perspective considered. As occurred when adopting the society perspective, "affective image" was the dimension with most weight upon university image formation when the viewpoints of the remaining stakeholders were adopted. Nevertheless, differences were detected in the cognitive dimensions.

Next, a check was carried out to establish whether there was metric invariance in the reflective indicators. Four multi-group CFAs were conducted, comparing the results obtained for society with those corresponding to prospective students, current students, graduates, and companies. The instrument for comparison presented slight differences in its composition depending on the collective that was to be compared with society, resulting from the eliminations of items produced during verification of the measurement instrument's properties.

Partial invariance (Muthén and Christoffersson 1981; Byrne et al. 1989; Byrne 2006) was only shown for the comparison made between society and companies (ΔS-Bχ^2=19.5812; Δgl=12; p>0.05; ΔCFI=-0.002). In the other three comparisons, it was not even partially possible to demonstrate metric invariance. So, only the analysis of structure invariance, slope invariance, and residual invariance for the pair of collectives formed by society and companies could be concluded.

The goodness-of-fit indices for the base model (M1) proposed to evaluate structure invariance were considered acceptable and suggested equivalence in the nature of the construct between the groups compared. The model M2 incorporated equality constraints in the weights for the two groups compared. The results led to rejection of full invariance (ΔS-Bχ^2=12.83; Δgl=6; p<0.05). The sequential relaxation of the constraints associated with the weights of "teaching resources" and "research resources" on the principal construct led to a partially invariant model (M2') (ΔS-Bχ^2=5.15; Δgl=4; p>0.05). In model M3, the increase in the S-B χ^2 was not significant (ΔS-Bχ^2=6.86; Δgl=5; p>0.05). The amount of variance in the construct explained by the dimensions was similar on adopting the perspective of society and that of the companies, under conditions of partial slope invariance.

The previous results mean that the image structure identified from the society perspective can be said to be shared by the companies, although some differences in their composition showed up which came, fundamentally, from the influence exerted in each case by perception of the provision of teaching resources (the effect on image is relevant in the case of society, but not so with the companies). Although it was not possible to complete the analysis for the case of the three student collectives (as evidence was not found that they understood the indicators and dimensions proposed in the same way as did society), an important remark can be made (of a merely descriptive kind) in the light of the results of the tests made individually for each collective (Tables 4 and 5). As occurred when adopting the society perspective, "affective image" was the dimension with most weight upon university image formation when the viewpoints of the remaining stakeholders were adopted, and it was in the cognitive dimensions where differences between the different perspectives resulted noticeable.

5. DISCUSSION AND CONCLUSIONS

In this research, university image from the perspective of society was conceptualized as a second order multidimensional construct in which the dimensions are formatively related with the construct. One of them, the perception held by society of university massification, had to be eliminated as it presented problems of reliability. Of the other six dimensions or aspects considered, three significantly influence the formation of overall university image from the perspective of society. Listing them in terms of greater to lesser influence, we are referring to affective image, teaching resources, and graduate training. The effect of the other three dimensions is not significant. That is to say, academic offer, cost, and research resources do not have a relevant influence on university image from the perspective of society.

Two aspects should be pointed out concerning the dimensions whose influence on image is relevant. The first is the greater degree of influence possessed by the affective component in image formation compared to cognitive aspects. This result is consistent with that obtained by Beerli et al. (2002) who, although they were adopting the student perspective, concluded that the influence of the affective component on university image is greater than that of the cognitive dimension. The second is the weight of the teaching resources dimension, which was revealed to have greater influence on university image formation than graduate training, which is, however, the result of the teaching service stemming from the application of these resources. That is, perception of the environment proved more influential on image formation than did perception of the result of the educational process. This outcome is in accordance with that obtained in the research by Kazoleas et al. (2001). These authors concluded that the most critical factor of image was the organizational infrastructure, an argument shared by Nguyen and LeBlanc (2001), for whom contact elements such as teaching staff, other staff, and campus facilities are critical factors that determine the image perceived. In the case of society, a collective that is partly comprised of people without personal experiences or first-hand information about a particular university, visible aspects such as some of the teaching resources might take on even greater relevance. In other words, what is seen is used as a reference for what cannot be seen.

The findings described constitute a valuable contribution for marketing literature as so few works have delved into the dimensions that influence university image adopting the standpoint of society. Further, they provide guidance to university managers when determining which aspects are recommendable to act upon so as to project a favorable image to the general public.

The findings also suggest that affective issues occupy an outstanding position in image formation from the perspective of all the other four stakeholders considered (prospective students, current students, graduates, and companies). This result falls in line with the increasingly widespread belief among academics that not only cognitive aspects but also affective assessments influence the formation of perceptions (Dowling 2001; Fombrun 2012; Melewar et al. 2012). Yet it is in the cognitive aspects where differences in image formation among the stakeholders studied in this research become more patent. The invariance tests conducted to determine the origin and scale of the potential differences that the measurement model explaining overall university image from the perspective of society may reflect when considering the other audiences, give rise to mixed results depending on the collective considered. On one hand, the image structure identified from the socie-

ty perspective is shared by the companies, although some differences in composition are observed, coming fundamentally from the influence of teaching resources. On the other, the meaning that some of the dimensions and indicators have for society is not equivalent to that attributed by the student body (prospective, current, and graduate). This finding prevented us from testing whether its effect on image differs among collectives (because aspects would actually be subjected to comparison that have been shown to be different) and suggests that the valid society measurement instrument requires adaptations for these three collectives.

6. **MANAGERIAL IMPLICATIONS**

This research supplies university managers with a valid and reliable measurement model for overall university image. It can be applied in different phases and for different purposes in the field of university image management. But the results also furnish information of value that can contribute to guide university management teams in their reflections on the proper decisions to make regarding what must be "said and done" in the institutions they lead when directed at different target audiences.

Concretely, they provide information that universities can steer in determining corporate identity. In the light of the results, it seems reasonable to think that universities should determine not only a core identity but also a coordinated set of multiple identities linked with the different associations to be achieved among the different publics, namely, with the "satellite images" desired. The particular importance that affective issues have in university image formation, regardless of the perspective considered, suggests that emotional benefits could be oriented to constitute the core identity of a university, around which the development of another set of associations that are only of relevance for some of the collectives would be coordinated. While it might seem that this is disassociated from the teaching and research functions proper to the university, the feelings of their audiences ought to be heeded. And they seem to be demanding experiences that go beyond academic training and contribution to research, since the emotional bond with the university has proven to be decisive in image formation. Consequently, the postulates of experiential marketing might turn out to be interesting for universities, given the relation it presents with the field of emotions and sensations.

Additionally, we consider it reasonable that companies and society can be considered by universities as a compact cluster when designing actions geared toward the development of a favorable image. The reason is that, although some differences among them have been identified in the degree to which perception of teaching resources impacts image, the coincidences are also noticeable.

7. **LIMITATIONS AND FURTHER RESEARCH**

The empirical research carried out in this work was limited to five different university stakeholders (society, prospective students, current students, graduates, and companies)

and to the Spanish context. Broadening the analysis to other audiences would lead to a better understanding of the process of image formation and make it possible to compare their views. A cross-cultural approach geared to identify the degree to which the weights of university image dimensions vary across cultures would also constitute a highly valuable contribution. Meanwhile, new investigations performed with the adoption of a formative approach would provide a stimulus to make progress in developing the guidelines to follow in order to evaluate the reliability and validity of formative constructs and to assess measurement invariance.

8. ACKNOWLEDGEMENTS

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