

## Article

# Measuring a University's Image: Is Reputation an Influential Factor?

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**Abstract:** Today, the higher education sector can be considered a market and, within it, private university education is a common marketable service in the literature on higher education management. Research on the analysis of the variables that generate the university image has been the subject of numerous investigations. Although there is no generally accepted definition, most authors approach the measurement of image through multi-factor scales, with variables relating to functional and psychological elements. This research aims to contribute to study of the most determinant variables in measuring a product's image, assessing especially the effect of the reputation construct. This was done through measuring the image of the "private university" product as perceived by citizens of Andalusia, based on a standardized model with three dimensions—functional and affective aspects and reputation. After adapting and validating the questionnaire, a two-phase procedure is performed with double validation through exploratory and confirmatory factor analysis. The results show an adapted scale valid for measuring the image of a generic product; with presentation and discussion of a series of advantages of incorporating reputation and measuring image through models with three dimensions. This article goes deeper into the possible influence of reputation as a determinant factor in measuring image, an assumption arising from some models for measuring image, something that so far has not been sufficiently contrasted.

**Keywords:** image measurement; reputation; private university; confirmatory factor analysis



**Citation:** Gutiérrez-Villar, B.; Alcaide-Pulido, P.; Carbonero-Ruz, M. Measuring a University's Image: Is Reputation an Influential Factor? *Educ. Sci.* **2022**, *12*, 19. <https://doi.org/10.3390/educsci12010019>

Academic Editor: Han Reichgelt

Received: 11 November 2021

Accepted: 21 December 2021

Published: 30 December 2021

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## 1. Introduction

The implementation of marketing to university is an area that is growing in importance as competition between universities increases. Thus, the irruption of marketing philosophy in higher education institution (HEI) is understood as a competitive strength where globalization of HEIs has played a part [1,2]; and has pushed the universities to develop new marketing strategies to increase brand engagement [3]. According to this marketing philosophy, the study of two intangible assets in higher education, image and reputation, have received increasing academic research in recent years [4–8].

There is considerable consensus on the benefits of a good university image, such as a source of differentiation from other competitive institutions [9], or to improve the relations with stakeholders [10]; Mainly, a good image can contribute to the achievement of new students [11–13].

However, the analysis of image in perceptual meaning becomes an ambiguous concept [14,15]. This may be due to related but different concepts revolving around the idea of image, these being: corporate image, brand image, product image, brand personality, positioning, identity, and reputation, which are sometimes used erroneously as synonyms [16–18]. Certainly, reputation, and its differentiation from image, is a subject

that has given rise to various stances, without there being consensus as to the relation of dependence between these two concepts [19].

Nevertheless, there is considerable agreement on the premise that image can be measured, but it is hard to measure [20]. Various authors support the idea that the image of a product, brand or company are subjective phenomena that can be measured by compiling the opinions of individuals or groups of individuals, with no need for them to be consumers [17,21–23]. However, there is no generally accepted model to measure image, with the methodologies proposed, and the variables used in published models being disparate [15].

Following on from the above, this study aims to contribute more evidence to the discussion on perceptual measurement of university image with a twin objective: from the theoretical bases and results of empirical work published, it was decided to submit to examination the brand image measurement scale proposed by Martínez et al. [24], formed of three dimensions—functional image, affective image and reputation, to confirm its validity when the object measured is a product unconnected to a specific brand; and secondly, the study seeks to confirm the significance of reputation as an independent and necessary construct to measure image.

The brand measurement scale was chosen due to its versatility since it considers a set of items adaptable to each specific context—as the authors themselves point out; because it is conceived as universalizable and has been used successfully to measure brand image in different sectors of activity with the model being validated in subsequent studies [25–27].

In this way, the main research question is to know what are the factors that shape the image of a private university in the minds of people in general, regardless of their level of studies or other sociodemographic characteristics. In addition, given the importance of the reputation construct in the university context, this study aims to determine whether reputation is one of the influential factors in the measurement of the image of a private university, when no specific institution or brand is mentioned.

The Spanish university system has 83 universities, of which 50 are public and 33 are private. Although private universities account for 40% of Spanish universities, according to official statistics from 2018 onwards, they only account for around 14% of university students. In Andalusia, there is only one private university to date. The decision to focus the study on private education is considered pertinent, as this topic is widely debated in society, with all individuals finding it easy to give their appreciation and opinion.

## 2. Literature Review and Hypothesis

### 2.1. Concept of Image and Levels of Measurement

Academic interest in the concept of image dates to the 1950s, and authors at that time were suggesting that human behavior depends more on image than on objective reality itself [28,29]. Transposed to the world of products and brands, since the mid-20th century, many authors have proposed definitions of image which highlight the perceptual component leading individuals to form a mental image of the object (product, brand, company, sector or even person) through a set of sentiments, ideas and attitudes, rather than a sum of physical attributes and characteristics.

The review of the literature on the concept of image reveals many commonalities in the definitions that emphasize the cognitive or mental process through which individuals create an image. Many authors describe aspects such as ideas, sentiments, attitudes, mental constructs, perceptions, beliefs, expectations, impressions, or stereotypes as essential determinants [4,15,19,30].

This research is based on the definition of image proposed by Currás [17] (p. 29), who sees it as: “the sum, result, or accumulation of beliefs, attitudes, experiences, sentiments, impressions or information that a subject—consumers, stakeholders, individuals in general—has of an object”.

In addition, a more detailed study of the degree of generality or specificity of the object of the image allows what is usually known as levels of image measurement. In

this case, the few authors who have addressed this topic open the field of study, with it being possible—and interesting—to analyze individuals' mental image of objects other than brands. Although the number of levels forming these studies does not coincide, there is unanimity regarding the existence of a product image, understood as what individuals perceive about a product or service in general, beyond brands or companies [28]. In consequence, there are different objects/levels that can be of interest for the measurement of image—a sector, a generic product, a company, or brands [21]. This paper focuses on the measurement of a generic service, the private university, without alluding to a specific university brand.

## 2.2. Reputation and Image

As happens with image, reputation has been studied in different areas related to business [31], such as strategy, communication, marketing, sociology and even finance. But unlike image, many of the studies published on reputation do not give a definition, taking this for granted [32].

However, this study takes as a reference the definition proposed by Fombrun et al. [33] (p. 87), where reputation is: “collective representation of a company's past behavior and its consequences, which shows the company's capacity to deliver valuable results to multiple stakeholders”. Also, as with image, reputation can be applied to different objects, such as products or services [19,34].

Another important consideration arrived at after reviewing studies is the existence of difficulties in establishing differences between the concepts of image and reputation [35,36]. So, a minority of work considers them similar [31,32]; but the majority argue that they are interrelated concepts:

1. some studies consider reputation as the result of combining the different images of a company [37,38];
2. and others consider it as the global assessment and influential element in measuring the image of products or brands [12,20,23,24,39–42]. This study is based on the second group.

Following the review above, the first hypothesis is formulated:

**Hypothesis 1 (H1).** *Reputation is a significant factor in measuring a product's image.*

## 2.3. Measurement Scales for University Image

There is great consensus in research based on university image as a multivariate concept generated in different subjects [10,12,20,30,39,43,44]. Also generalized is the thesis covering inter-related cognitive and emotional aspects [39]. The cognitive (knowledge about the object) and affective (motivations, sentiments and benefits) dimensions are complementary, allowing better measurement and understanding of image [23].

There is no consensus on how to measure image and how many factors are necessary, which has led to multiple measurement scales. In this context, there are two methodologies [24]: (1) ad-hoc scales that can capture image but cannot be generalized; and (2) standardized scales which, although allowing generalization, are not globally recognized.

Therefore, three multi-dimensional scales including reputation as a factor have been reviewed. Two ad-hoc scales designed to measure university image—those of Beerly et al. [39] and Sung & Yang [4]—and a standardized scale proposed by Martínez et al. [24], which was used for vehicles and would be applicable to all types of products.

The first of the above-mentioned models establishes six dimensions to measure the university's brand image: the university's orientation and training, reputation, massification, accessibility, age and affective dimension. This scale was reduced to four dimensions in the works published later [23,45], where the dimensions associated with cognitive aspects emerge as significant: reputation and emotional aspects.

The second model [4] finds three factors significant: personality of the university, external prestige, and reputation; with the university's external prestige being the factor with the most weight in the image.

To explore other possibilities for study, this research opted to use the standardized scale [24], which has not previously been applied to measure university image. According to the authors, brand image would be formed of three constructs: functional image, covering aspects related to attributes or benefits linked to the brand; affective image, including the personality of the brand; and reputation, formed of the global perception of the brand over time. In the original proposal, a scale of 9 items was used, three for each construct (see Table 1).

**Table 1.** Studies carried out with the image measurement standardised scale of Martinez et al.

Items Proposed in Each of the Three Dimensions	Significance in Studies			
	Martínez et al. (2004) [24]	Martínez et al. (2005) [25]	Martínez et al. (2007) [26]	Buil et al. (2008) [27]
<b>FUNCTIONAL IMAGE</b>				
F1 The products are high quality.	Signif.	Signif.	Signif.	Signif.
F2 The products present characteristics that other brands do not have.	—	Signif.	Signif.	—
F3 The products have better characteristics than the competition.	—	—	—	Signif.
F4 Consuming this brand is very unlikely to cause problems or unforeseen events.	—	Not Signif.	—	—
F5 The competition's products are usually cheaper.	—	Signif.	—	Not Signif.
F6 The models are cheap in relation to other brands.	Signif.	—	—	—
F7 I like the design of the models.	Signif.	—	—	—
<b>AFFECTIVE IMAGE</b>				
A1 It is a brand that arouses positive feelings.	—	Signif.	Signif.	Signif.
A2 This brand conveys a personality that differentiates it from rival brands.	—	Signif.	Signif.	Signif.
A3 Buying this brand says something about the class of person you are.	—	Not Signif.	—	—
A4 I have an image of the type of people that buy this brand.	Signif.	Not Signif.	—	—
A5 It is a brand that does not disappoint its customers.	—	Signif.	Signif.	Signif.
A6 The brand conveys values that differentiate it from other brands in the sector.	Signif.	—	—	—
A7 The brand strives to innovate in new models, services and/or technology.	Signif.	—	—	—
<b>REPUTATION</b>				
R1 It is one of the best brands in the sector.	—	Signif.	Signif.	Signif.
R2 It is a brand that is committed to society.	—	—	—	—
R3 It is a much consolidated brand in the market.	—	Signif.	—	—
R4 The brand is highly regarded.	Signif.	—	—	—
R5 The brand is a professional in its category.	Signif.	Signif.	Signif.	Signif.
R6 You can trust this brand.	Signif.	—	—	—

It should be noted that the standardized scale has been applied to different brands in various sectors, such as: cars [24], dairy products, sports footwear, and electronics [25]; generic brandless products [26]—a tube of toothpaste and a box of chocolates—; and goods of frequent consumption, lasting consumer goods and services [27].

In all these studies the scale was validated, resulting in explaining the three constructs (functional, affective, and reputation), although as the authors themselves state, the 9 items originally proposed to assess brands in the car sector should be adapted if applied to brands in other sectors, and can be extended or substituted with others, as long as respecting the three-dimensional structure.

Following the review above, it was decided to propose a three-factor model, leading to the formulation of the last hypothesis:

**Hypothesis 2 (H2).** *The most correct formulation to measure the image of the generic product "private university" is obtained by applying a standardized multi-factor scale with three dimensions: functional image, affective image, and reputation.*

### 3. Materials and Methods

#### 3.1. Sample

The type of sampling used was intentional. However, since the questionnaire has been implemented in a previously existing consumer panel, we believe that the stability and maturity implied by its past will have transferred to the sample, strengthening its representativeness. So, the questionnaire launching method was online through a consolidated consumer panel, managed by a marketing research company with a consistence control in registered persons. The initial sample consisted of 778 questionnaires. This number was the maximum we could afford with the limited budget we had available for primary data collection. Before proceeding with the estimation and validation of the model, the sample was filtered, eliminating the atypical observations, which resulted in a total of 27 questionnaires being eliminated.

It is not the objective of this work to study differences based on sex or age. Nevertheless, the panel leaders were asked to include men and women of different ages in the sample, so that the sample would not be composed only of young individuals, a priori more familiar with the subject matter of this study.

The questionnaire was validly completed by 751 Andalusians. The sample was 461 men (61.4%) and 290 women (38.6%) between 18 and 65 years old. The distribution by age bracket was equal in the 4 age brackets chosen: 150 persons aged 18 to 25 (20%); 150 persons aged 26 to 35 (20%); 150 persons aged 46 to 55 (20%) and 151 persons aged 56 to 65 (20.1%).

#### 3.2. Instrument

As stated above, there is no agreement in the significance of all the items used in the research published [24–27]. This implied elaboration of a questionnaire including and adapting all the significant items in the studies reviewed previously, as compiled in Table 2, only adding one item in this study for reputation.

**Table 2.** Brand image measurement scale adapted to the “private university”.

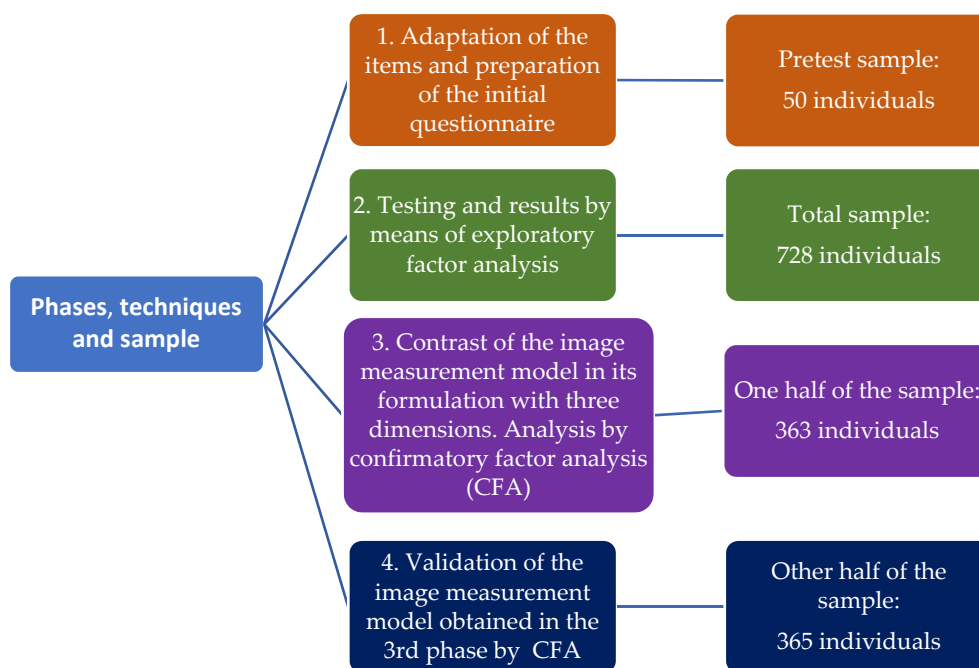
Functional Image (F)	Affective Image (A)	Reputation (R)
f1. Education and training in the private university are of high quality.	a1. The private university arouses positive sentiments.	r1. The private university is the best option.
f2. The private university's premises are of high quality.	a2. The private university conveys a personality that differentiates it from the state university.	r2. The private university is committed to society.
f3. The research produced in a private universities is of high quality.	a3. Enrolling in a private university says something about the class of person you are.	r3. The private university is much consolidated in the market.
f4. Private universities present characteristics that state ones do not have.	a4. The private university does not disappoint its customers.	r4. The private university occupies very high positions in university rankings.
f5. The private university gives high value in relation to the price that must be paid for it.	a5. The private university has a differentiated ideological component.	

The addition of item r4, relating reputation to the position in rankings was not tested previously in this scale of image but was considered appropriate in the light of recent research [46,47], which establishes its relevance and links these concepts in the university domain.

As for the formulation of the questions, each one is presented as a statement, and respondents are asked to show their level of agreement or disagreement on a 7-point Likert scale (1 = complete disagreement, 7 = complete agreement).

### 3.3. Data Collection and Analysis Procedure

To test the hypotheses proposed, the factor analysis method was applied with data arising from a survey made of Andalusian adults. Not having a generally accepted model to measure the image of the private university, but a generic brand this could be likened to, led us to divide analysis of the issue into four phases, as presented in Figure 1. Phase 1 involves adapting the items of the standardized image measurement model and carrying out the corresponding pre-test. In Phase 2, the validity and significance of the items initially proposed are explored. In Phase 3, the standardized model is confirmed in its version with the three original dimensions. In Phase 4, the validity of the result obtained is contrasted. The difference between the third and fourth phases is that while in the third we admit the possibility of improving the initial estimation by modifying the model, in the fourth, there is only validation of the result of the first. This strategy of validation meant dividing the sample.



**Figure 1.** Phases, procedures applied, and sample used.

## 4. Results

### 4.1. Phase 1. Pretest of the Questionnaire

As already mentioned, 50 valid questionnaires were used in a pre-test. Validity and reliability were checked through analysis of the Cronbach alpha coefficient ( $\alpha$ ). A reliability value of around 0.70 is considered acceptable [48]. The figure obtained here was  $\alpha = 0.819$ , implying validation of the initial questionnaire.

### 4.2. Phase 2. Initial Validation through EFA

In exploratory factor analysis, examination of the data is a necessary preliminary step, to allow better prediction and more accurate evaluation of the dimensional nature. Otherwise, atypical cases, extreme answers, can unduly influence the result of a multivariate analysis [49]. Measuring the *Mahalanobis distance* to the centroid of the distribution indicated the presence of 22 outliers, which we decided to eliminate [50], leaving a final sample formed of 728 observations.

Although various procedures are available in statistical programs (such as SPSS), in practice two methods are most used: an exploratory factor analysis (EFA): Principal Axes and Principal Components. The Principal Axes method only contemplates the variance the variables have in common or co-variance, excluding specific variance and that which can be attributed to measurement. In this case, Principal Components was chosen, since the aim of this analysis, more than a prediction, is the detection of latent dimensions (here, the three blocks forming the questionnaire, functional image, affective image, and reputation) [49].

The results suggest that three factors should be chosen, as from the fourth factor onwards the associated eigenvalues are far below 1. Besides, the percentage of explained variance with the three factors chosen reaches 69.935%, a high percentage, which indicates acceptance of the three factors.

The next step is to contrast the coincidence of their significance. One way to approach factor content is rotation, which consists of their re-organization, reducing as much as possible the variance of each item shared by different factors, at the expense of a simultaneous reduction in the explained variance. After rotating the model, the explained variance is 61.431%.

The factor loadings after rotation show that the 5 items relating to functional image form one factor and that the 4 relating to reputation form another. However, in the case of affective image, two of its items are not significant: variable a3. "Enrolling in the private university says something about the class of person you are", and variable a5. "The private university has a differentiated ideological component". With these results, affective image will be studied from now on with 3 items, due to eliminating the variables about the association between the type of person and the private nature of the university, and about the ideological component.

#### *4.3. Division of the Sample*

This study proposes a previous procedure to CFA of dividing the sample, which is common in some areas of quantitative research. This assumes validation of a scale principally through a procedure of dividing the total sample (728 questionnaires) in two homogeneous sub-samples: one for training (confirmation of the scale, corresponding to Phase 3) and the other for validation (ratification of the results, corresponding to Phase 4). The reason for this strategy is that it would not be advisable to use the same observations for construction and validation, as if to evaluate the model we use the same observations as to construct it, we would probably obtain a good result, due to the fact of the parameters of the model being estimated with the same sample as for subsequent validation.

Among the few methods available for division of the sample, the one developed by [51] was chosen. This is an extension of the Wilcoxon-Mann-Whitney test of equality of means without requirements of normality. The contrast is applied to successive divisions of the sample in two sub-sets, obtained randomly, with the similarity being evaluated through a statistic of known approximate distribution (specifically chi-squared) until the sub-samples obtained are statistically homogeneous for the chosen level of significance (5% in this case). Applying this procedure to the initial sample results in two sub-samples of 363 and 365 respectively, whose associated p-value calculated is 0.948, very close to one, which leads us to accept the division with strong guarantees of their similarity. As explained previously, the first sub-sample will be used to confirm the model (Phase 3) and the second to validate it (Phase 4).

#### *4.4. Phases 3 and 4. Estimation and Validation of the Model through CFA*

Both the existing literature on the factors measuring image and the previous results indicate it may not be completely clear that there is an affective factor independent of reputation and functional elements. Setting out from the result obtained from EFA, the third phase deals with confirming this, even improving it, through slight modifications to its structure. In the fourth phase, the resulting model is put to test to check its statistic validity.

#### 4.5. Phase 3. Estimation of the Model

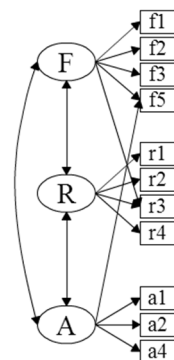
To estimate and validate the CFA models we used *EQS 6.1* software, choosing the maximum likelihood (ML) method to estimate the parameters, aiming to find the estimates that make the occurrence of the sample obtained most probable, maximizing its likelihood [52]. In addition, this is a very robust estimation method that can be applied when there is no condition of univariate and multivariate normality of the data (as in this case) without serious losses of the theoretical properties of the estimates obtained [49]. The most important aspect of the results obtained is evaluation of the model's goodness of fit. In each case, we obtained some of the usual indices in this type of analysis, namely the comparative fit index (CFI), the normed fit index (NFI), the non-normed fit index (NNFI), and the root mean square error of approximation (RMSEA).

The CFI is a measure that compares the fit obtained for the estimated model with what would be obtained on the assumption of no relation between the variables used. Its values range between 0 (no adjustment of the model to the data) and 1 (perfect adjustment of the model), with 0.9 being the appropriate threshold value [53]. The NFI and NNFI are similar measures, which situate the estimated model on a scale between the extremes of the nil model and perfect fit, differing in the fact of considering or not the models' degrees of freedom. Both have values between 0 and 1, considering the models with the highest values in these indices as the most adjusted. Finally, RMSEA, as a measure of the magnitude of the errors committed, should be interpreted in the opposite direction, with the most suitable models being those where this indicator has a lower value. A common reference is that its value should not be above 0.06 [53].

Carrying out the confirmatory procedure with the first sub-sample (363) and calculating the adjustment indicators of the model to measure private university image with the three factors (functional, affective and reputational) and the items determined in the exploratory Phase 2, confirmation of the model did not turn out, as expected, to be completely satisfactory (CFI = 0.919, NNFI = 0.895, NFI = 0.905 and RMSEA = 0.119). However, analysis of the *Lagrange multipliers* indicated it was possible to improve the model by modifying its structure slightly.

Those modifications consisted of allowing the functional factor (F) to share one indicator (r3, opinion about consolidation in the market) with reputation (R) and another with the affective factor (f5, quality-price relation). Finally, everything seemed to indicate that variable f4 (private universities present characteristics that state ones do not have) could be linked to the three factors. We consider this possibility is equivalent to stating that the variable is not appropriate to identify the elements defining university image, since it should be associated with all three and is not really a characteristic of any. Therefore, we decided to eliminate it from the model.

The indicators for the model recalculated with these corrections (CFI = 0.965, NNFI = 0.950, NFI = 0.952 and RMSEA = 0.086), much more accurate than the initial ones, together with the results' coherence with theory, led us to consider it definitive, as shown in Figure 2.



**Figure 2.** CFA results of the first sub-sample.



#### 4.6. Phase 4. Validation of the Model

The model estimated and modified in Phase 3 was subject to evaluation using the second sub-sample (365 questionnaires) with no option for change. It is a question of determining whether the goodness-of-fit achieved in the previous phase was inherent to the model, or if this had been adapted exclusively to the sample with which it had been obtained (overtraining). In both cases, as detailed below, the result was satisfactory.

The expectations for the 4th phase, on the assumption of the model's validity, are of stability, in that the model proposed, without new modifications, should be acceptable. Moreover, if the structure detected during the first phase is correct, not only the global fit measurements but also the factor loadings should be similar in both estimates.

Tables 3 and 4 present, respectively, the goodness-of-fit indicators and the values estimated for the model's parameters in both phases.

**Table 3.** Global measurements.

	Phase 3	Phase 4
CFI	0.965	0.963
NNFI	0.950	0.947
NFI	0.952	0.951
RMSEA	0.086	0.088

**Table 4.** Estimated parameters.

Factor	Variable	Phase 3	Phase 4
F	f1	0.865 **	0.883 **
	f2	0.776 **	0.777 **
	f3	0.816 **	0.838 **
	f5	0.286 **	0.479 **
	r3	0.176 **	0.358 **
R	r1	0.852 **	0.854 **
	r2	0.892 **	0.903 **
	r3	0.835 **	0.827 **
	r4	0.754 **	0.537 **
A	f5	0.53 **	0.341 **
	a1	0.82 **	0.785 **
	a2	0.755 **	0.769 **
	a4	0.772 **	0.732 **
Cov(F,R)		0.631	0.708
Cov(F,A)		0.766	0.822
Cov(R,A)		0.901	0.926

\*\* Parameter statistically significant at 1%.

Both Tables 3 and 4 reveal that, although the structure was estimated from a set of values and partly adapted to them, the degree of reliability obtained is not the result of that adaptation, as the indicators are confirmed to be practically identical with the different samples. Therefore, the results obtained in Phase 3 with the functional, reputational and affective factors, partially modified with regard to the model by Martinez et al. (2004) [24], are not the result of the sample used for the estimate.

## 5. Discussion and Conclusions

### 5.1. Discussion

Image and reputation are key assets with which institutions can differentiate their products from those of their rivals, and so it would be useful for managers to have appropriate measuring techniques for use in distinct contexts.

When reviewing the specifics about image and reputation, it is clear that, being concepts generally used in empirical work in management areas, a consensus has not been reached regarding their definitions. Although one stream argues that the concepts are similar, most of the studies reviewed focus on their divergence, defending the need to distinguish between image and reputation. Even within this stance of divergence, it is worth going deeper into the relation between both constructs.

Following the theoretical review, despite nuances, the definition of the image proposed [17] seems best to us, as it can be generalized to any product and any stakeholder. Therefore, image would be defined as the sum of an individual's beliefs, attitudes, experiences, sentiments, or information regarding an object. In relation to reputation, it is more difficult to find work going deeper into its definition, and the definitions reviewed are less homogeneous than in the case of image. Even so, there is a predominance of authors who consider reputation as the assessment or global attitude of a company or brand's behavior; and some consider that other objects, such as goods or services, have a reputation [19].

We also found that when designing instruments to measure image, there is a certain gap between what is established theoretically as a possible target of image measurement (product, brand, company, country, etc.) and the empirical contributions published, which are usually greatly focused on similar subjects of study, with brand image being measured most frequently. It was very difficult to find work analyzing a generic product, with no brand, as is proposed here. In our view, this level of analysis would be extremely valuable for subsequent decision-making affecting brand image, or even guiding the first stages in launching a new product.

This study used an adaptation of the brand image measurement scale proposed by Martínez et al. (2004) [24], applied to citizens' perception of the private university. In this model, perceptions of a brand are grouped around three basic dimensions. Firstly, individual's value functional attributes, such as quality and perception of the price. In addition, affective attributes, which are linked to elements of a symbolic and emotional character. Finally, reputation is included. This model was chosen for three reasons:

1. the universality of the measurement scale proposed;
2. its validation through other work in different sectors;
3. considering reputation as a necessary factor in measuring image.

Exploratory factor analysis led to the conclusion that it is possible to measure the image of a product in individuals' minds, without referring to any brand, and that this is a multi-dimensional construct, with cognitive and emotional components. Therefore, the first hypothesis of this study is accepted.

The first hypothesis, seeking to contribute more empirical evidence about the relation between image and reputation, is also accepted, since through confirmatory factor analysis, reputation is found to be a significant factor at the time of measuring a brandless product's image.

The second and final hypothesis of this study—the best formulation to measure the image of the “private university” product is obtained by applying a standardized multi-factor scale with three dimensions: functional image, affective image, and reputation—is also accepted.

Concerning the overall results, there are similarities in relation to the results of the study by Martínez et al. [25], since both models have similar goodness-of-fit indicators, which corroborates the general validity of their theoretical proposal.

Nevertheless, it is worth making some changes about the initial model. In the first place, it is proposed to eliminate from the scale one of the variables included in the block of functional aspects—private universities present characteristics that state ones do not have -,

a result that coincides with the last study published by its original authors [27]. Secondly, a change is proposed so that the price variable loads not only on the functional factor but also on the affective factor, which is logical since perception of the price involves both affective and functional elements.

Furthermore, it is proposed to incorporate an additional variable to measure the reputation of a university, i.e., the position in university rankings, something of great relevance in the sphere of higher education. The analyses confirm that the position in rankings is a significant variable in measuring university image, also being connected to the functional factor as well as the reputational one, although with much greater weight in the latter.

## 5.2. Conclusions

The relevance of the product category concept is explicit in the positioning concepts of image measurement, but very little research has been done on it. In the analysis of an organization's image, it is assumed that potential customer's group products hierarchically into different levels of specificity. For example, if an adult individual were to consider which path to follow in his or her studies, the possible products would initially be grouped into product categories (i.e., university versus vocational training), into product types (i.e., private university versus public university) and finally, by brand. However, most published empirical studies are concerned with measuring the brand image of a particular university.

A standardized multi-factor scale with three dimensions- functional image, affective image, and reputation- has proved valid for measuring the image of the private university, in general, without referring to any brand.

The results obtained suggest the existence of a differentiated image of private universities compared to public universities, which, to a certain extent, justifies their coexistence with state universities. This work offers some keys to private universities in terms of management and differentiation: if they work on functional aspects, it is convenient to allocate resources to improve the quality of education and research, without neglecting the price charged to students; if they focus attention on the management of emotional aspects, they must find a clearly differentiated brand personality compared to public universities and, finally, if they seek to activate their reputation, they must improve their positions in international rankings, among other aspects.

However, the results of this research, given the type of sampling employed, should be confirmed by other studies that extend the sample to a broader scope. It would also be of great interest to compare the results between two or more different countries.

In this line, and for future lines of research, it would be of interest to contrast whether there are significant differences in the measurement of the image of private universities according to the profile of the respondent.

In the same line of research, it would be very interesting to incorporate image as a second-order construct, which would allow evaluating the weight of each of the three factors (functional, affective, and reputational) in its construction, in particular, that of reputation.

Finally, mention must be made of the methodological contribution as regards the management of the sample, both in its sub-division in two parts used to estimate and then validate the model (a not common practice in this type of study, although theoretically very recommendable) and the supervised way in which this sub-division was carried out to ensure the statistical homogeneity of both fractions.

**Author Contributions:** Conceptualization, B.G.-V. and P.A.-P.; Formal analysis, M.C.-R.; Methodology, M.C.-R.; Writing—original draft, B.G.-V., P.A.-P. All authors have read and agreed to the published version of the manuscript.

**Funding:** This research received no external funding.

**Institutional Review Board Statement:** Ethical review and approval were waived for this study, due to a market research company external to Loyola Andalucía University being used. This company “IDDEALIA Consulting” has the ISO 26362:2009 certification that guarantees the ethical aspects in this type of opinion panel services.

**Informed Consent Statement:** Informed consent was obtained from all subjects involved in the study.

**Conflicts of Interest:** The authors declare no conflict of interest.

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