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STRATEGIC MARKETING AND STAKEHOLDER ORIENTATION IN THE SPANISH PUBLIC UNIVERSITIES: AN EMPIRICAL ANALYSIS

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To my mother

The most exciting phrase to hear in science, the one that heralds the most discoveries, is not "Eureka" (I found it) but "That's funny…"

Isaac Asimov

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Abstract

This thesis based on institutional theory, dynamic capabilities and stakeholder theory investigates the relationships among the antecedents of responsive and proactive stakeholder orientation and its consequences in the Spanish public university context. In addition, how university leaderships react when a public university might implement and disseminate a strategic management approach grounded in the responsive and proactive stakeholder orientation raise the question about the existence of heterogeneity among public university managers so, focusing in those reactions we aim to identify different public profiles of Spanish public university managers. To achieve the objective, several research techniques are used to answer the dissertation questions empirically, such as descriptive analysis, exploratory factor analysis, confirmatory factor analysis, structural equation analysis, multi-sample analysis, and latent class segmentation.

The results obtained mainly stresses that the mimetic effect on copy successful university actions, university top manager's emphasis on both stakeholder orientations and a better communication and relationship between managers of different university structures have positive effects on responsive and proactive stakeholder orientation. Moreover, the results suggested that those universities that are more responsive or/and proactive stakeholder oriented obtain a better organizational performance in terms of beneficiary satisfaction, acquisition of resources and reputation. Furthermore, our findings show that to achieve some specific goals of university performance, as university reputation, a responsive stakeholder orientation is not sufficient, a proactive stakeholder orientation is also needed.

In addition, multi-sample analysis shows that there were no significant differences in almost all established paths whereas for those significants differences a set of propositions was raised. Specifically, the results showed that to belong to a certain

university size, region, ranking positions and endogamy promotes better performance results from a proactive stakeholder orientation.

Furthermore, we test the heterogeneity among the Spanish public university managers. A total of four segments were identified – Conservatives, Practicals, Disbelievers, and Unconventionals –. Mainly, the "Conservatives" show neutral positions in relation to implement responsive and proactive stakeholder orientations, the "Practicals" are interested in copy successful actions of other similar institutions, while the "Disbelievers" do not encourage any change whereas the "Unconventionals" show a totally opposite perspective.

Finally, this dissertation offers some contributions to research and practice, to university managers, and to policy makers, which could help to provide new insights into university management. Furthermore, some limitations are highlighted and future research lines are discussed.

Keywords: Stakeholder orientation, higher education management, market orientation; Spanish public universities; structural equation modelling

JEL: M31, I21

1 Introduction to the dissertation

1.1 Spanish public universities and strategic management: A research statement

In its early days, Spanish public universities operated in an equable and uncompetitive environment; one in which its executives developed and carried out action programmes without taking into account the needs and expectations of beneficiary stakeholders (Flavián & Lozano, 2004). Nowadays, these institutions are being subjected to higher levels of competitiveness and strong social pressures, leading them into new environments in which they must to adapt (Peña, 2010; Tomás, 2006; Vilalta, 2006). In this sense, universities are no longer an exception to the processes of change commonly to other non-profit organisations (NPOs) (Caruana, Ramaseshan & Ewing, 1998).

As a result, Spanish public universities are now required to improve their ability to globally transform the institution and to modernise its operations (Álvarez, Santos & Vázquez, 2002; Navarro & Gallardo, 2003); at the same time, they have had to assume a responsibility towards society, and both, maintain and improve their leadership in the development and dissemination of knowledge, all while paying special attention to the aspirations and needs of their key stakeholders.

This sudden change of status can be explained as a result of modifications in the influencing factors on Spanish public university system. Traditionally, the system has been polarised by two opposing forces: government control and university autonomy. However, in this system, a third step is gaining greater importance: what one might call

market or *society*, which can be understood as the manifestation of the demands and needs of stakeholders in the higher education context (Vilalta, 2006).

According to Navas and Guerras (2007), the idea of *change* is inextricably linked to the concept of strategy in an essentially dynamic context: firstly, to be more competitive means to survive in this new environment; secondly, leaders must be aware of major changes that happen in the context in which they operate (Alves, Mainardes & Raposo, 2010; Akonkwa, 2009); and finally, leaders must change their traditional culture from a "towards and past" approach to a more flexible culture of "out and into the future" approach (Gómez-Mendoza, 2010).

In for-profit firms, market orientation (MO) is deemed a very suitable strategy for improving performance, and is seen as a way to create value by generating loyalty and satisfaction from its customers (Kohli & Jaworski, 1990; Narver & Slater, 1990). Today, the MO concept has been successfully accepted and is applied in a large number of companies and organisations (Kirca, Jayachandran & Bearden, 2005). As underpinned by Cabrera-Suárez, de la Cruz Déniz-Déniz and Martín-Santana (2011), today's MO is becoming increasingly relevant in markets with continuous and accelerated changes as a result of competitive intensity. Therefore, the concept of the MO has been widely studied, with meta-analytic studies by Handelman, Cunningham and Bourassa (2010), Kirca et al. (2005), Shoham, Ruvio, Vigoda-Gadot, and Schwabsky (2006) and, Van Raaij and Stoelhorst (2008) proving empirically that a positive relationship exists between the MO and the business performance.

In addition, the initial works by Kotler (1972) and Kotler and Levy (1969) posit that marketing concepts could be applied in different types of organisations. Later, the works by Balabani, Stables and Philips (1997), Forbes (1987) and Hayden (1993) initiated a specific line of research that analyses the MO in the specific context of NPOs. Within this line of research, we highlight the work of Caruana et al. (1998)

because they were the first to apply the concept of MO in the specific context of both public and private higher education institutions (HEIs).

Moreover, Lovelock and Rothschild (1980) and, Lusch and Laczniak (1987) were the firsts authors to highlight the need for a broad concept that took into account more than one stakeholder, and which deserted the traditional concept of customer orientation. Later, several authors (i.e. Álvarez et al., 2002; Conway, Mackay & Yorke, 1994; Duque-Zuluaga & Schneider, 2008; Greenley, Hooley & Rudd, 2005; Liao et al. 2001; Modi & Mishra, 2010; Sargeant, Foreman & Liao., 2002) supported the idea that MO was not easily applicable to all kind of organisations, especially not in the context of NPOs. In this regard, they suggest the need to extend customer orientation to more than one stakeholder, because the main mission of these organisations was to accomplish and identify the different needs of society (Duque-Zuluaga & Schneider, 2008; Mainardes, Raposo & Alves, 2014). Furthermore, some authors posit that is better to refer to this concept as a *societal orientation* rather than market orientation (Duque-Zuluaga & Schneider, 2008; Liao, Foreman & Sargeant, 2001; Modi & Mishra, 2010; Sargeant et al., 2002).

In the specific context of HEIs, it is difficult to define the customer profiles or their priority objectives because of the inherent complexity that involves carrying out its activities and services. In this sense, Ferrell, Gonzalez-Padron, Hult and Maignan (2010) argue that is better for HEIs to think in a multi-orientational way because these institutions are oriented to a variety of stakeholders instead of only customers and competitors -just as in the traditional construct of MO-. Likewise, Bjørkquist (2008) supports the idea that one way of embedding universities in society is by involving external actors, while Alves et al. (2010) argue that HEIs need to engage in profitable relationships with various stakeholders before incorporating their respective visions into their own management practices. In that way, Akonkwa (2009) suggests that prior to

including the HEIs' key stakeholders into a MO conceptualisation, it is necessary to define them and establish the way to respond to their expectations.

According to Patterson (2001), the points of view about certain universities' missions are divergent because each institution engages in multiple services and activities for its stakeholders. The extant literature on university stakeholders indicates that a wide range of individuals, organisations, and government-sponsored agencies are involved in HEIs, generating conceptual confusion about who exactly the HEI stakeholders are (Mainardes, Alves & Raposo, 2012a; Mainardes, Raposo & Alves, 2012b). Hence, the current management teams of Spanish public universities must deal with a large number of stakeholder demands, all reasonable, lawful, and valuable, but sometimes contradictory or even confrontational.

Therefore, the direct link between HEIs' strategies and society requires us to keep the stakeholder theory in mind. According to Mitchell, Agle and Wood (1997), the success of good strategic management is based on finding an accurate way to identify key stakeholders, which will allow institutions to prioritise their various requests properly. Furthermore, Zaheer and McEvily (1999) argue that the strategic management of stakeholders is a key resource or capability. Other meta-analytic works, such as those by Chabowski et al. (2011), Laplume, Sonpar and Litz. (2008), or Neville, Bell and Whitwell (2011), highlight the growing prominence of stakeholder theory in the organisational context. Laplume et al. (2008) posit that strategic stress has been underemphasised in recent years, whereas Chabowski et al. (2011) argue that this growing interest in stakeholder theory is in contrast to its influence on marketing performance and its effect on the generation of competitive advantages. Several authors put forward the thesis that *stakeholder orientation* (SO) is a construct to measure the organisation degree towards society (Chabowski et al., 2011; Laczniak & Murphy, 2012; Maignan et al., 2005; Parmar et al., 2010).

In accordance with the aforementioned arguments, we will submit, formulate, and test a conceptual model that considers the main antecedents and consequences of the SO in the context of Spanish public universities. In turn, and following the line of research initiated by Hult and Ketchen (2001), we empirically verify that the SO plays a decisive role as a dynamic capability that improves performance in HEIs.

Since the SO is a key issue for our dissertation, and taking into account its influence on the main university stakeholders, we suggest introducing into our research the contribution made by Narver et al. (2004). These authors argue that an organisation can be oriented towards the outside in two ways: a *responsive* and a *proactive* perspective. Narver et al. (2004) suggest that the *responsive market orientation* (RMO) is what has traditionally been used in most empirical studies and define it as a business's attempt to understand and satisfy its customers' expressed needs, that is, those that the customer is aware of and can therefore express. The *proactive market orientation* (PMO), on the other hand, is the attempt to understand and satisfy customers' latent needs, meaning those needs that customers are unaware of; they are not in their consciousness, but are no less "real". Therefore, the PMO is supported in the search for new customer information and knowledge (Tsai, Chou & Kuo, 2008). Through an empirical analysis, Voola and O'Cass (2010) test whether competitive strategies influence the RMO and the PMO, which then influence firm performance, showing that different competitive strategies also have greater influence on the proactive than the responsive market orientation.

Based on the above assertion, our main purpose is to develop and test an SO conceptual model contextualised to Spanish public universities, bringing out two possible SO concepts –responsive and proactive– and exploring their antecedents and consequences. Consequently, this dissertation is framed by strategic marketing knowledge and stakeholder research, specifically within the line of research on NPOs in general and universities in particular.

1.2 The research gap and purposes of the doctoral dissertation

Nowadays, universities must take responsibility towards society, maintain and improve their leadership in the development and dissemination of knowledge, and pay special attention to the aspirations and needs of their key stakeholders. These facts involve universities (1) adapting quickly to any new environment, (2) improving their ability to transform the institution as a whole, and (3) modernising their functions (Weber, 2004; Zajac & Kraatz, 1993). Thus, we focus our main research objective on how universities react to such adjustments through a strategic marketing approach. From the specific research lines identified in the critical review, we highlight the following research gaps:

- The MO research lines show that the MARKOR scale of Kohli and Jaworski (1990) is most often applied in the context of university research, being used less the Narver and Slater (1990) scale. Besides the research line focused on the MO, on the one hand, Liao et al. (2001) and Sargeant et al. (2002) consider it better to apply a societal concept to NPOs, while Chabowski et al. (2011), Laczniak and Murphy (2012), Maignan et al. (2005), and Parmar et al. (2010) support the SO concept. The literature highlights empirical studies within HEIs showing the positive relationship between the MO and subjective performance measures, but none empirically testify to the positive relationship between other construct approaches and performance measures as a source of generating competitive advantages.
- Grinstein (2008) highlights that few studies make the distinction between the *responsive* MO and the *proactive* MO and proposes that further research should explore its constructs, their antecedents, and their consequences. In this sense, we point out that no studies in the HEI context investigate the influence that proactive and responsive behaviours could exert on university performance. Nevertheless, we found that there are authors who study such differentiation in other contexts (Chou & Yang, 2011; Grinstein, 2008; Jiménez-Zarco, Martínez-

Ruiz & González-Benito, 2008; Ketchen, Hult & Slater, 2007; Narver et al., 2004; Tsai et al., 2008; Voola & O'Cass, 2010).

- To date, the theoretical concept of HEIs' latent needs has received some theoretical comments (Hammond, Webster & Harmon, 2006; Hemsley-Brown & Oplatka, 2010; Ma & Todorovic, 2011; Macedo & Pinho, 2006; Rivera-Camino & Ayala, 2010), but no systematic empirical analyses. Thus, we identify that nowadays no proposal exists related to PSO behaviour in the HEI context.
- Alves et al. (2010) and Neave (2002) highlight the lack of empirical research identifying university stakeholders and the disconnection between marketing and stakeholder theory. Moreover, Chapleo and Simms (2010), Jongbloed, Enders and Salerno (2008), and Mainardes et al. (2012a,b) show that it is more necessary than ever to bear in mind the stakeholder analysis. Furthermore, the literature review shows that disparity exists in the techniques used to classify and analyse stakeholders (Bryson, Ackermann & Eden, 2007; Kipley & Lewis, 2008; Knox & Gruar, 2007; Takala, Hawk & Rammos, 2001).
- As mentioned above, HEIs are complex organisations with a research area that is covered by several contexts, approaches, and theoretical frameworks. From the critical review carried out, we highlight that there is a growing tendency to explain complex theoretical phenomena through interrelating various theoretical frameworks. Specifically, we identify the lack of HEI research that is supported by combining institutional theory, dynamic capabilities theory, and stakeholder theory.
- Following the suggestions made by Duque-Zuluaga and Schneider (2008) in the NPO context and Flavián and Lozano (2006) in the Spanish university context, we identify as a new line of research on Spanish universities and marketing concepts the interest in introducing the effect of some control variables through

making comparisons, for example between disciplines or between different typologies of centres and universities.

- The existing literature claims that it is necessary for university managers to understand better the stakeholder concept and its potentiality to achieve better university performance. On this line of reasoning, Gómez-Mendoza (2010) suggests that university leaders must change their traditional culture from a "towards and past" approach to a more flexible culture of "out and into the future". Currently there are no studies exploring how Spanish public university managers react to universities' stakeholder orientation efforts. Thus, we attempt to fill this gap by providing an extended understanding of the heterogeneity of university managers in relation to their perception about the implementation of the SO marketing concept in the university context.

From the above research gaps, we concluded that there was a need to combine institutional theory, dynamic capabilities theory, and stakeholder theory, proposing a conceptual model that explains the improvement in universities' performance as well as identifying and defining its main variable constructs: antecedents, stakeholder orientations –responsive and proactive– and consequences. According to the aforementioned, we concluded that in the context of public universities, stakeholder orientations –*responsive stakeholder orientation* (RSO) and *proactive stakeholder orientation* (PSO)– are constructs that fit better than the traditional MO concept. As the antecedents of the RSO and PSO, we identified some institutional factors and realised a series of propositions related to the effect that each factor has on those concepts. In addition, and supported by one of the above-submitted gaps, this research considers incorporating some control variables. Another purpose of this dissertation, based on the identified research gaps, is to analyse the existence of heterogeneity in Spanish university managers in relation to their perspectives of SO as a marketing concept.

1.3 The objectives of the dissertation

Ferrer[1] (2010) suggests that university managers frequently formulate the following questions: "How do I plan, order and establish priorities among different society demands?" "Should I reject some of them?" To answer these questions about Spanish public universities in our dissertation, we put forward a combination of institutional theory, stakeholder theory, and dynamic capabilities theory to develop an RSO and PSO conceptual model.

Thus, the **main purpose** of this doctoral dissertation is to explore the relationship between (1) antecedents and stakeholder orientation –responsive and proactive– and (2) stakeholder orientation –responsive and proactive– and organisational performance in the Spanish public university context. To understand the nature of this link, we discuss the adaptation of the constructs and propose a conceptual framework related to them. This means refining the PSO and RSO measures to suit the case of Spanish public universities. The purpose is also to test, on the one hand, whether the institutional factors (as external antecedents) and the organisational factors (as internal antecedents) have significant effects on the PSO and RSO and, on the other hand, whether the PSO and RSO have significant effects on Spanish public universities' performance (as a consequence).

Several specific objectives in the form of research questions stem from the general objectives. These specific objectives can be divided into two broad categories, theoretical objectives and empirical objectives.

The **theoretical objectives** of the research are as follows:

- To understand the new strategic management approaches for the overall HEIs and the inherent complexity involved in the strategic processes of these types of organisations by analysing the different limitations of each framework employed

[1] Luis Ferrer was the rector of UAB from 2002 to 2009. Words taken from the master's degree by Casablancas, M. C. (2011).

and examining a new conceptual framework based on the mixing of several theoretical frameworks.

- To deal with a conceptual analysis of the SO, its origin, its similarities to other strategic concepts, and its typologies as well as understanding the marketing approaches in the NPO context by analysing both the antecedents that influence the RSO and PSO and the consequences of the stakeholder orientations.
- To analyse the Spanish public university context, understanding its special features deemed as pressures to which it has to react, for example the university system, university legal structure, university model, university role in society, university managerialism, university stakeholders, and so on.

To discover the existence or otherwise of heterogeneity among the various Spanish public university managers and the motives that lead a university manager to implement the SO as a marketing concept or not, one of the **empirical objectives** of this research is to develop a typology of Spanish public university managers. Moreover, to understand the RSO and PSO as dynamic capabilities of Spanish public universities, the other empirical objective of this research is to develop a conceptual model to predict the variables that affect the adoption of the stakeholder orientation –proactive and responsive– philosophy and to predict the variables that explain better university performance. More specifically, the empirical part aim:

- To define a managers' universe within the Spanish HEI context by developing a database.
- To examine the presence of university stakeholders on Spanish public universities' websites.
- To determine whether there is heterogeneity among Spanish public university managers.

- To identify the main factors that are part of the conceptual model and to develop valid measures for the main factors that are part of the conceptual model.
- To test the internal validity of the findings through the use of control variables.

According to the challenges of our research, we expect to test empirically whether Spanish public universities seeking to satisfy the different stakeholders' expectations will experience positive effects on their performance. In addition, following Voola and O'Cass's (2010) assumptions, we expect that universities that have adopted the PSO are more likely to understand new society opportunities and to undertake experiments to improve their marketing strategies.

1.4 A description of the thesis

To achieve the objectives stated in the previous sections, this doctoral dissertation is structured in **four parts**. To summarise, the steps followed in this doctoral dissertation are presented in Figure 1.1, as well as the theoretical framework, research methodology, and key findings.

Then, consistent with the objectives of the dissertation, the first part is an introduction, the second contains the theoretical development, the third is about the empirical content and the results' analysis; and the final chapter presents the study's contributions, implications, limitations, and possible future research directions identified in the global conclusion section. In the following, each part is briefly described.

Having considered the **first part**, which contains **Chapter 1**, the **second part** forms the theoretical framework of our research approach and is divided into two chapters. **Chapter 2** presents and analyses the newly emerged MO concepts and contains a conceptualisation of the MO concept for NPOs as well as the theoretical frameworks on which our research is based. In this chapter, we also analyse the complexity associated with the diverse theoretical frameworks used for complex institutions such as HEIs. Finally, a critical literature review of the previous studies published is conducted. The

review focuses on objectives, theoretical frameworks, and methodologies with the aim of finding a gap for further research and ascertaining what has been achieved in this specific field of knowledge in the academic arena.

Chapter 3 considers the stakeholder orientation in the university context. Concretely, we aim to examine the features of the Spanish universities' higher education context by conducting a literature review, through which we also examine multiple lines of university research, which are more or less consolidated and based on different topics. Furthermore, through a thematic analysis of the literature, we undertake to identify and classify the Spanish university stakeholders who could exert certain influences on universities' strategic management in general and the SO concept in particular. Specifically, we aim to discuss the adequacy of implementing the stakeholder orientation as both proactive and responsive behaviours in the Spanish public university context. We propose to examine, on the one hand, the antecedents that are specific to Spanish public universities and, on the other hand, the Spanish public universities' performance concept.

The **third part** of the research includes the presentation of our conceptual model, the methodology proposed to test the hypotheses, the empirical analysis and procedures, and the main findings. **Chapter 4** contains the identification and definition of all the components of the theoretical model proposed, as well as the justification and the inclusion of two differentiated SO constructs – the proactive and responsive constructs. Concretely, we examine the antecedents from the external and internal perspectives and the consequences for university performance. Moreover, in Chapter 4, we describe the relationships amongst the antecedents and the consequences of the SO constructs, which are determined by the establishment of the hypotheses proposed, and finally we propose our theoretical model. Thus, we describe the theoretical bases of the university stakeholder orientation model and we develop the theoretical arguments to show the

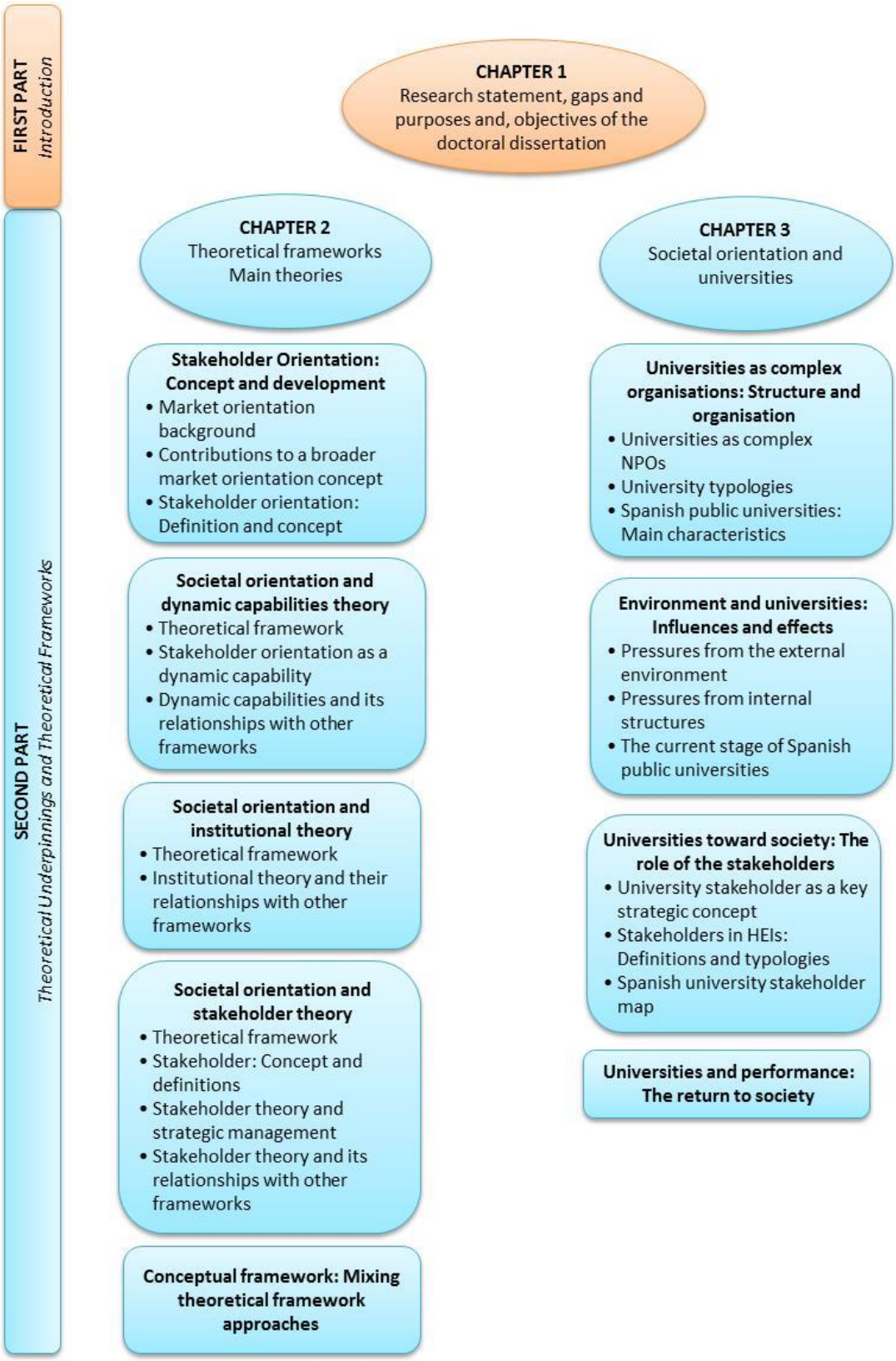
theoretical relationships among the variables reflected in the model, as well as the inclusion of control variables.

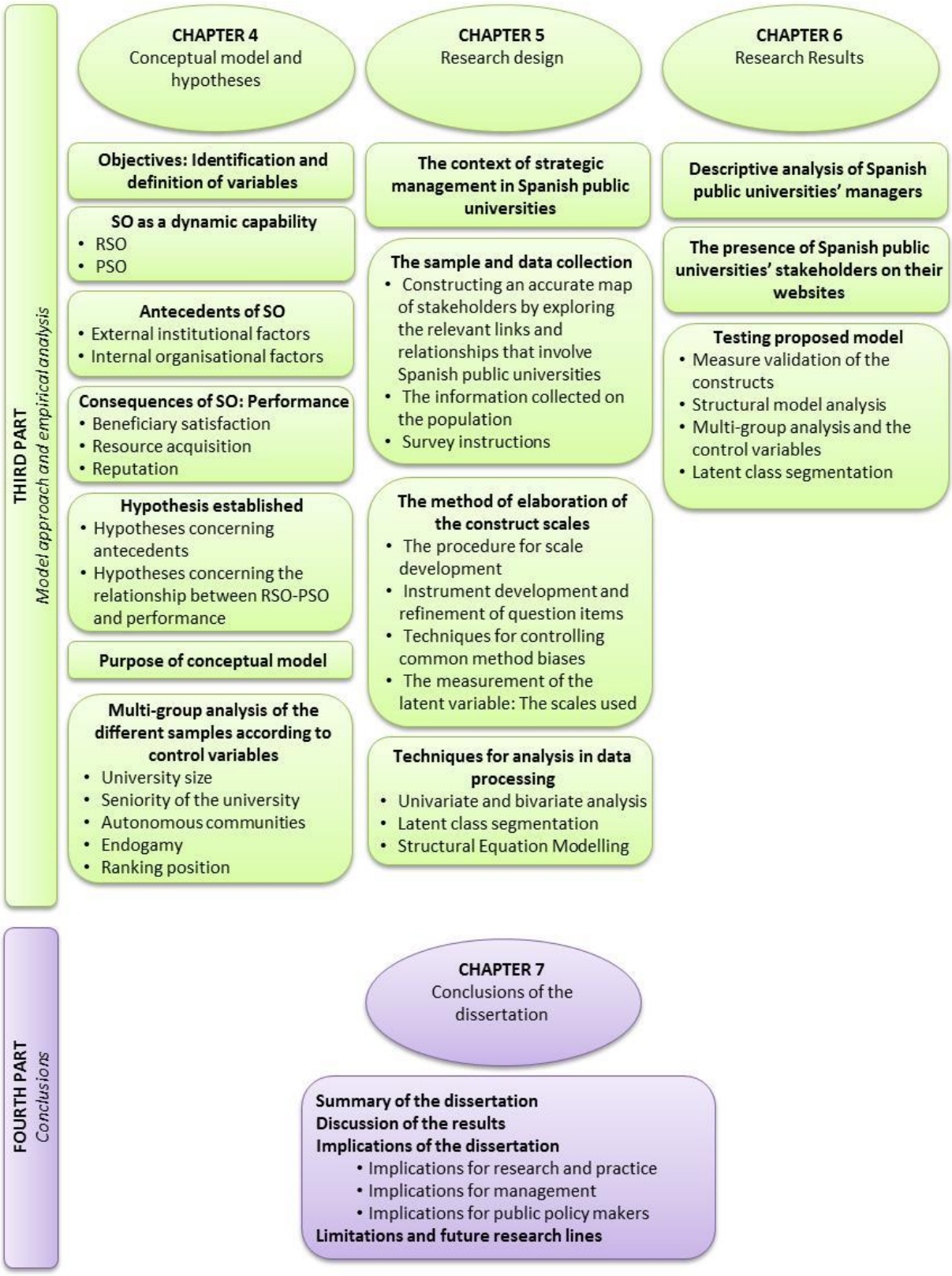
In the **Chapter 5**, we present the methodology and the research design. In this chapter, we analyse the Spanish senior university managers' context to evaluate the main characteristics that define the current universe of people who are involved in the strategic management of Spanish public universities; we also examine the changes and analyse the possible trends in them. After that, we describe the steps followed for collecting information, the universe size and selection procedure, the questionnaire design, and the pretest carried out. Furthermore, we define and delimit the latent variables and scales used in their measurement. Finally, we include a description of the techniques that we use to analyse the data, mainly descriptive analysis, structural equation modelling, and latent class segmentation.

In **Chapter 6**, we explain the empirical analysis and discuss the main results. Specifically, this chapter is divided into three different sections. First, we conduct a descriptive analysis of the main features of the Spanish university managers obtained from the database responses. Secondly, we confirm all the constructs and propose and test the acceptance of the model using covariance-based structural equation modelling (CBSEM) for Spanish public university managers. Thirdly, to increase the internal validity of the findings specific variables were incorporated into the study – university size, seniority of the university, autonomous communities, endogamy of the university managers and, ranking positions of the universities. Finally, we perform a segmentation of Spanish public university managers to gain insights into the nature of heterogeneity within university managers. Derived from a detailed analysis of the results, we evaluate the hypotheses and carry out a comprehensive discussion thereof.

Finally, we present the **fourth part**, which consists of **Chapter 7**, which provides the study's contributions, implications, and limitations and the possible future research directions identified in the present dissertation.

Figure 1.1 Dissertation approach




THIRD PART
Model approach and empirical analysis
CHAPTER 4
Conceptual model and hypotheses
CHAPTER 5
Research design
CHAPTER 6
Research Results
Objectives: Identification and definition of variables
SO as a dynamic capability
• RSO
• PSO
Antecedents of SO
• External institutional factors
• Internal organisational factors
Consequences of SO: Performance
• Beneficiary satisfaction
• Resource acquisition
• Reputation
Hypothesis established
• Hypotheses concerning antecedents
• Hypotheses concerning the relationship between RSO-PSO and performance
Purpose of conceptual model
Multi-group analysis of the different samples according to control variables
• University size
• Seniority of the university
• Autonomous communities
• Endogamy
• Ranking position
The context of strategic management in Spanish public universities
The sample and data collection
• Constructing an accurate map of stakeholders by exploring the relevant links and relationships that involve Spanish public universities
• The information collected on the population
• Survey instructions
The method of elaboration of the construct scales
• The procedure for scale development
• Instrument development and refinement of question items
• Techniques for controlling common method biases
• The measurement of the latent variable: The scales used
Techniques for analysis in data processing
• Univariate and bivariate analysis
• Latent class segmentation
• Structural Equation Modelling
Descriptive analysis of Spanish public universities' managers
The presence of Spanish public universities' stakeholders on their websites
Testing proposed model
• Measure validation of the constructs
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FOURTH PART
Conclusions
CHAPTER 7
Conclusions of the dissertation
Summary of the dissertation
Discussion of the results
Implications of the dissertation
• Implications for research and practice
• Implications for management
• Implications for public policy makers
Limitations and future research lines

2 Theoretical frameworks. Main theories

According to Alves et al. (2010), a university, as a complex organisation, needs to take into account the development of managerial strategies in stakeholder theory (among others), because not doing so shows a lack of consistency in the investigation of the stakeholder phenomenon.

Given the reason mentioned above, to explain the influence that strategic marketing has on performance improvements, we propose to use a combination of three theories: institutional theory, dynamic capabilities theory, and stakeholder theory. Using all of these theories, we will develop a specific framework for the context and the purpose raised in the present thesis.

The **dynamic capabilities theory** was first formulated by Teece and Pisano (1994) and Teece, Pisano and Schuen (1997) and later recognised as a theoretical framework within the theories of strategic management (Di Stefano, Peteraf & Veronay, 2010; Teece, 2007). This theory states that a key issue in building a conceptual framework for dynamic capabilities is based on the identification of the sources of competitive advantages, since they are rare and difficult to replicate.

Institutional theory examines the role of social pressures and influences on organisational actions; it posits that the social context in which they act constrains and guides organisational behaviour (DiMaggio & Powell, 1983, 1991; Meyer & Rowan, 1977; Scott, 1987, 1995). The theories based on organisational behaviour perceive a

university as an institution that contains powerful cognitive, normative, and regulative structures (Scott, 1995).

The **stakeholder theory** was first explained in the seminal work of Freeman (1984) and belongs to the strategic thinking of many lines of research. This theory is grounded in the belief that the final performance of an organisation should consider not just the returns to their shareholders, but also those that involve stakeholders. Mitchell et al. (1997) argue that institutional theory and the theory of population ecology correctly explain the effects of the environment on organisations, but they suggest that these are less effective when it is necessary to understand the power of managing the relationships among various stakeholders. Bearing this in mind, it is important to note that the stakeholder theory became popular with the rise of strategic management theory during the 1980s (Matlay, 2009).

2.1 Stakeholder orientation: Concept and development

2.1.1 Market orientation background

As Flavián and Lozano (2005) highlight, the role of marketing in organisations has evolved through time[2]. Thus, in recent years, the MO has become an inexhaustible source of studies of marketing strategy, being developed from both a theoretical and an empirical perspective (Flavián & Lozano, 2005).

The concept of MO was first introduced by Narver and Slater (1990) and Kholi and Jaworski (1990) from two different perspectives: the cultural perspective[3] and the behavioural perspective[4], respectively. Later, Webster, Hammond and Harmon (2006),

[2] Originally, marketing focused on the study of specific aspects of business management; later, in the 1970s, it expanded its area of research, in the 1980s, it was developed as a strategic perspective, until finally, in the 1990s, it became consolidated with two major lines of research: marketing relational and market orientation research.

[3] "Market orientation is defined as the business culture that most effectively and efficiently creates the necessary behaviors for the creation of superior values for customers" (Narver & Slater, 1990, p. 20).

[4] *"Market orientation is the organisation-wide generation of market intelligence pertaining to current and future customer needs, dissemination of the intelligence across departments, and organisation-wide responsiveness to it"* (Kholi & Jaworski, 1990, p. 6).

taking one step further, refer to the MO as an organisational culture in which everyone in the organisation is committed to the customer and adapts in a timely manner to meet the changing needs of the customer and view it as the implementation of the marketing concept[5].

Pavičić, Alfirević, and Mihanović (2009) indicate that the role of culture as MO behaviour has gained more attention since the concept has been linked to the idea of learning organisations. In a recent work, Asaad, Melewar, Cohen and Balmer (2013) explore how certain universities perceive and manage the MO in the context of international student recruitment.

In the previous literature, Kotler and Levy (1969) reflect in their seminal work that an effective marketing concept is one that sensitively serves and satisfies human needs, which means that it serves the interests of particular groups. Noting the behaviour of NPOs, they conclude that the bureaucratic mentality is beginning to dominate the original service mentality and thereby schools, for example, treat their students as nuisances. In this regard, they are very forceful in affirming that the choice for NPO managers is not whether to market or not, the choice is whether to market well or poorly. Hence, they claim that:

> *"marketing is a pervasive societal activity that goes considerably beyond the selling of toothpaste, soap and steel"*. (Kotler & Levy, 1969, p. 10).

Further, several authors advocate broadening the scope of marketing to NPOs (i.e., Carauna et al., 1998; Hammond et al., 2006; Macedo & Pinho, 2006; Siu & Wilson, 1998). Specifically, Siu and Wilson (1998) refer to the MO as *employee orientation* and a *long-term survival requirement*. Later, Cervera, Molla and Sanchez (2001), in the field of local government management, call the concept *public service orientation*. Elsewhere, Liao et al. (2001) and Sargeant et al. (2002) advocate an appropriate

[5] *"Marketing concept is a philosophy that advocates that a successful organizations begins with identifying customers needs and wants, decides which needs to meet, and involves all employees in the process of satisfying customers"* (Webster et al., 2006, p. 10).

terminology in the NPO context, which fits better with the Kotler and Levy (1969) philosophy. Hence, these authors posit that the concept should be termed *societal* rather than *market* orientation because organisations in the context of the non-profit sector can potentially have a much larger group of stakeholders and also because the market for some categories of NPOs can have little or no meaning.

Furthermore, in the previous literature, Greenley and Foxall (1997) and Lusch and Laczniak (1987) were the first to link the marketing concept with the stakeholder concepts. In doing so, Greenley et al. (2005) break with this focus by addressing the MO within the context of multiple stakeholder orientation, justifying the fact that when managers make marketing decisions, they also need to consider the interest of other stakeholders, rather than only the customers. In the same way, Maignan et al. (2005) underline the fact that stakeholder theory in marketing goes beyond markets, competitors, and channel members to understanding and addressing all stakeholders' demands. In recent works, authors such as Ferrell et al. 2010, Laczniak and Murphy (2012), and Parmar et al. (2010) support the idea that marketing has much to say about the interface between society and firms, there being increasing interest in developing marketing theory and practice along stakeholder theory lines.

Finally, Christensen and Bower (1996) highlight the problem of a narrow MO due to its conception as only a *responsive* behaviour. In a more recent work, Parmar et al. (2010) point out the need to establish measures to work proactively with stakeholders. On this line of reasoning, the research by Narver et al. (2004) supports the assertion that the concept should consist of two essential sets of behaviours: the first, *responsive*, in which the organisation attempts to discover, to understand, and to satisfy the expressed needs of customers; and second, *proactive*, in which the organisation attempts to discover, to understand, and to satisfy the latent needs of customers.

2.1.2 Contributions to a broader market orientation concept

Aside from the aforementioned studies, in the current literature, we can find several studies that support Kotler's (1972) original assertion [6] and reinforce the idea of broadening the MO concept when it is applied in the NPO context toward more stakeholders, who are also part of society. Álvarez et al. (2002) reveal the general acceptance among academics that marketing principles are perfectly applicable to NPOs.

Concretely, they consider the MO concept to be an intangible resource that supplies the necessary commitment and information to satisfy both beneficiaries' and donors' needs, allowing the accomplishment of the organisational mission. Thus, they define non-profit marketing as:

> *"the management process of those interchanges undertaken by nonprofit organisations aimed at generating a social benefit to a specific sector of society"* (Álvarez et al., 2002, p. 58).

Duque-Zuluaga and Schneider (2008), Liao et al. (2001), and Sargeant et al. (2002) highlight that neither the concept of MO nor profit performance may be completely applicable to the non-profit context. Likewise, Rivera-Camino and Ayala (2010) suggest the need to integrate different pressure groups or stakeholders to broaden the MO concept. Additionally, Modi and Mishra (2010) show, in their analysis of the literature, a lack of agreement over the conceptualisation of non-profit MO and a narrow view of key stakeholders too. Moreover, Laczniak and Murphy (2012) predict a return to the neglected *societal marketing* concept introduced by Kotler in the 1970s, according to which marketing organisations will deliver value to customers that maintains or improves their well-being and that of society.

[6] Kotler (1972) articulates the concept of societal marketing as a customer orientation backed by integrated marketing aimed at generating customer satisfaction and long-run consumer welfare (Kang & James, 2007).

Against this background, Greenley et al. (2005) propose to address the MO concept within the context of multiple stakeholder orientation, because managers also need to focus on this diversity and not only on customers' needs. Maignan et al. (2005) affirm that the reconceptualisation of the marketing concept based on long-term and multiple stakeholders highlights the need, within marketing, to develop a wide stakeholder orientation rather than a narrow customer orientation. Later, Maignan et al. (2011) complement their contribution by affirming that a growing consensus exists that a firm's stakeholders are embedded, directly and indirectly, in interconnected networks of relationships and, given this, the authors reveal that the MO still focuses on customers and competitors, so the coordination of diverse stakeholders' interests may be difficult to implement. Finally, Ferrell et al. (2010) support the idea that the MO and the SO are not mutually exclusive, there being some overlap between them.

Summarising the concepts covered, in Table 2.1, we show the main authors who propose an alternative framework to facilitate the operationalisation of the MO concept towards broader marketing.

Table 2.1 Contributions to a broader market orientation concept

Study	Main idea	Supporting the broader orientation concept
Siu & Wilson (1998)	Following a critique of the existing literature, they define MO linked to the long-term survival requirement	"an organisation follows a MO to the extent that its structure, culture, systems and procedures are established in a way to ensures long-term customer (both clients and employees) relationships within the resource limitations and long-term survival requirement of that organisation" (Siu & Wilson, 1998, p. 303)
Liao et al. (2001)	They posit the need to develop a new measure for the non-profit sector, suggesting terming it societal orientation	"a societal orientation construct should include the needs of the wider society which it forms part. It is that perhaps provides the greatest degree of distinction between societal and market orientation" (Liao et al., 2001, p. 263)
Álvarez et al. (2002)	They delimit the MO concept in the private non-profit organisation context	"customers, that is to say, the beneficiaries of the organisation's activities" (Álvarez et al., 2002, p. 56) "NPOs management philosophy demands the creation and development of an organisational culture that converts the beneficiaries and resource donors into the central focus of present and future operations" (Álvarez et al., 2002, p. 58)

Study	Main idea	Supporting the broader orientation concept
Sargeant et al. (2002)	They argue for a new approach to the operationalisation of the marketing concept in the non-profit sector by delineating the components of societal orientation	"In the for-profit context, it is not usual to find operationalisations that focus on customers and employees as the primary stakeholder groups. In the nonprofit context, this can be overly simplistic since organizations can potentially have a much larger group of stakeholders" (Sargeant et al., 2002, p. 46)
Greenley et al. (2005)	They address MO constituting a multiple stakeholder orientation profile	"managers have orientation toward each of their stakeholder groups, which exist simultaneously" (Greenley et al., 2005, p. 1483)
Maignan et al. (2005)	They provide a well-balanced and integrated SO for implementing corporate social responsibility in marketing	"organizations must focus not just on their customers, but also the important stakeholder groups that hold the firm accountable for its actions" (Maignan et al., 2005, p.957)
Macedo & Pinho (2006)	They examine MO within the context of the non-profit sector	"Complexity of managing a non-profit organisation is in part due to the diversity of stakeholders whom these organisation interacts, and their different needs and interests whose are often in conflict with each other" (Macedo & Pinho, 2006, p. 536)
Kang & James (2007)	They present a conceptualisation of a societal orientation	"The current understanding and practices of marketing appear to have narrowly focused on the individual consumer and the gratification of his/her immediate wants, with little concern for long-run consumer interests and/or the interests of others in society who are not an organisations's direct customers" (Kang & James, 2007, p. 302)
Duque-Zuluaga & Schneider (2008)	They develop a multidimensional notion of societal orientation for the specific operating environment of NPOs	"adaptation of the MO philosophy to nonprofits should be called Societal Orientation" (Duque-Zuluaga & Schneider, 2008, p. 33)
Pavičić et al. (2009)	MO in Croatian higher education is discussed within the context of stakeholder-oriented management	"As the therm market may not be always used reliably in a nonprofit setting, the social orientation of nonprofit organisations is often discussed instead, implying that the main goal of a nonprofit institution is to define serve the needs, wishes and interests of its consumers/users, as well as to protect and enhance the welfare and long-term goals of society as a whole" (Pavičić et al., 2009, p. 192)
Ferrell et al. (2010)	They discuss the potential contribution of MO and SO along with the similarities and differences that could be significant for marketing strategies	"Stakeholder orientation is a philosophy of the long-term welfare of all stakeholders, it focuses on how organizations can leverage their marketing expertise to improve welfare of all stakeholders" (Ferrell et al., 2010, p. 95) "firms characterized by stakeholder orientation are dedicate to learning about addressing stakeholder issues" (Ferrell et al., 2010, p. 95)
Modi & Mishra (2010)	They apply Narver and Slater's (1990) conceptualisation of MO to NPOs	"NPOs would do well to continuously focus on beneficiaries' needs, should be sensitives to donors' needs and expectations and also, understanding the

Study	Main idea	Supporting the broader orientation concept
		strengthens, weakness, and strategies of their peers" (Modi & Mishra, 2010, p. 565)
Rivera-Camino and Ayala (2010)	They develop and validate a MO measure in a sample of Spanish universities	"recent literature about MO suggest the need to integrate different pressure groups or stakeholders in its definition" (Rivera-Camino & Ayala, 2010, p. 128)
Maignan et al. (2011)	They conceptualise and operationalise SO	"In order to clarify the potential contribution of the marketing discipline in achieving better financial, ethical, and social performance, one needs to focus on a broader set of stakeholders" (Maignan et al., 2011, p. 314)
Laczniak & Murphy (2012)	They explain and justify that more normative, macro/societal, and network-focused stakeholder marketing is necessary	"public policy debates about what exactly constitutes the societal common good and what social measurements reflected that progress will become prominent in the academic conversation on the organisational effectiveness and social fairness of marketing practices" (Laczniak & Murphy, 2012, p. 290)

Source: Self-elaborated

In the above Table 2.1, we highlight the considerable confusion about the MO concept. Basically, we denote that, on the one hand, Duque-Zuluaga and Schneider (2008), Kang and James (2007), Liao et al. (2001), Modi and Mishra (2010), Pavičić et al. (2009), and Sargeant et al. (2002) equate *market orientation* to *societal orientation* and propose that this concept can only be applied in a non-profit context; on the other hand, Ferrell et al. (2010), Greenley et al. (2005), and Laczniak and Murphy (2012) equate *market orientation* to *stakeholder orientation* and suggest that this concept can be applied in both for-profit and non-profit contexts. Additionally, we show that other authors, such as Álvarez et al. (2002), Macedo and Pinho (2006), and Rivera-Camino and Ayala (2010), redefine the MO concept but still use the same terminology to refer to it.

To summarise, in our literature review, we highlight that, to date, all the research carried out in the university context still employs the terminology market orientation to refer to the aforementioned concept (Caruana et al., 1998; Casidy, 2014; Flavián & Lozano, 2006; Hammond et al., 2006; Hemsley-Brown & Oplatka, 2010; Ma & Todorovic, 2011; Rivera-Camino & Ayala, 2010; Webster et al., 2006). In accordance with this

argument, we suggest that it would seem inappropriate merely to *transfer* the MO concept from the for-profit context to the public university context, because the MO in this context should take into consideration the long-term benefit to society rather than only customer satisfaction (i.e. students). Thus, we point out that a university operationalisation of the marketing concept should properly be termed *stakeholder* rather than *market* orientation.

Consequently, we conclude that the *stakeholder orientation* construct would have considerably more meaning for the university context. However, we affirm that MO and SO are not mutually exclusive, there being some overlap between them. As we mentioned, in the current literature, the concept of stakeholder orientation coexists with the concept of market orientation, as well as with the concept of societal orientation. Therefore, we base our research on the review of the existing literature about the aforementioned concepts, considering them as proxies for the SO concept proposed in our doctoral dissertation.

2.1.3 Stakeholder orientation: Definition and concept

As mentioned above, the MO has traditionally focused on customers and competitors (Kohli & Jaworski, 1990; Narver & Slater, 1990), although over the years this concept has undergone transformations. On this line of reasoning, we can find authors such as Parmar et al. (2010), who affirm that marketing is in a strong position to work on problems associated with monitoring and communicating with external stakeholders, by developing measures of stakeholder orientation or establishing measures to work with stakeholders proactively. Moreover, Maignan et al. (2005) suggest that an evolving concern exists that organisations must focus not just on their customers[7] as unique stakeholders but also on the relevant stakeholders. In that sense, they claim to employ the new definition developed by the American Marketing Association (AMA, 2013):

[7] The marketing literature mainly elevates the MO approach to select only one stakeholder, the customer, over others (Maignan et al., 2005).

> *"Marketing is the activity, set of institutions, and processes for creating, communicating, delivering, and exchanging offerings that have value for customers, clients, partners, and society at large"*.

In the above definition, Maignan et al. (2005) underline the fact that stakeholder theory in marketing looks beyond markets, competitors, and channel members to understand and address all stakeholder demands. Laczniak and Murphy (2012) also suggest using the AMA (2013) definition of marketing, highlighting its delineation of *society at large* as an important stakeholder.

Greenley et al. (2005) were the first to propose to address the MO within the context of multiple stakeholder orientation, because managers also need to focus not only on customers' needs. In their words, we can view stakeholder orientation as:

> *"the simultaneous ordering of attitudes towards each set of primary stakeholder interests, and allocated managerial behaviour to serve these interests"*. (Greenley et al., 2005, pp- 1484).

Besides, Ferrell et al. (2010) establish as a major distinction between the two concepts the fact that the MO identifies customers and competitors as the primary focus, whereas SO does not designate any stakeholder prioritisation, which is related to the issue. Thus, they define stakeholder orientation as:

> *"the organizational culture and behaviours that induce organizational members to be continuously aware of and proactively act on a variety of stakeholder issues"* (Ferrell et al., 2010, p. 93)

We hold that the above assertion fits our purpose and subject of research because the complexity of the Spanish public universities context requires us to develop a large SO concept. This means, in agreement with Maignan et al. (2005), that in marketing, the SO must extend beyond markets, competitors, and channel members to understand and address all stakeholder demands.

2.2 Stakeholder orientation and dynamic capabilities theory framework

2.2.1 Theoretical framework

The resource-based view (RBV) has its main antecedent in the seminal study by Penrose (1959) and was developed in the 1980s and 1990s (i.e., Barney, 1991; Grant, 1991, 1996; Wernerfelt, 1984, 1995). Hence, according to the RBV (Barney, 1991; Wernerfelt, 1984), organisations are heterogeneous in respect of the resources that they possess, which are the product of their history and past decisions[8].

The current literature distinguishes between assets and capabilities (Grant, 1996). In the RBV literature, capabilities are defined as managerial skills and accumulated knowledge for deploying assets to create a competitive advantage (Day, 1994; Grant, 1991; Teece et al., 1997). To survive in a changing situation, Teece et al. (1997) argue that capabilities must be in a continuous state of rapid and flexible adaptation to each successive new situation, meaning that having distinctive basic resources and capabilities is not enough. One key implication of dynamic capabilities is that firms compete not only in terms of their ability to exploit their existing resources and organisational capabilities, but also in terms of their ability to renew and develop their organisational capabilities (Hou, 2008). For our thesis objectives, we propose to employ Teece et al.'s (1997) definition of dynamic capabilities:

> *"the dynamic capabilities framework analyses the sources and methods of wealth creation and capture by private enterprise firms operating in environments of rapid change"* (Teece et al.,1997, p.509).

[8] *"Firm resources include all assets, capabilities, organisational process, firm attributes, information, knowledge, etc. controlled by a firm that enable the firm to conceive of and implement strategies that improve its efficiency and effectiveness"* (Barney, 1991, p.101).

2.2.2 Stakeholder orientation as a dynamic capability

Hult and Ketchen (2001), moving on to the RBV theoretical framework, put forward the idea that by jointly possessing four capabilities (market orientation, entrepreneurship, innovation, and organisational learning), sustainable competitive advantages can be achieved. In a later work, Morgan, Vorhies and Mason (2009) (2009), following Hult and Ketchen (2001), Hult, Ketchen and Slater (2005), and Ketchen et al. (2007) and based on the dynamic capabilities framework, discuss the MO and marketing capabilities as drivers of organisational improvement. In their meta-analytic work, Chabowski et al. (2011) examine three interrelated processes that convert resources into a sustainable competitive advantage by affirming that first, resources can develop into capabilities, second, capabilities can become a competitive advantage, and, finally, a competitive advantage can develop into a sustainable competitive advantage.

Furthermore, Teece (2011) affirms that dynamic capabilities are both a descriptive and a normative framework that can be used to assist top management decision making, providing decision makers with a cognitive structure for the business enterprise to develop conjectures and to validate or reject them, as the management acts to build competences and realign assets to meet future needs. Following this argument and specifically in the United Kingdom higher education context, Lynch and Baines (2004) argue that the RBV appears to offer university senior managers a framework for developing a strategy that is particular suited to the knowledge-based and people-focused context of higher education (HE).

Later studies, such as Ma and Todorovic (2011) and Webster et al. (2006), apply, in the university context, the notion of MO as a dynamic capability that could help universities to react to changes in the external environment by creating a culture and climate that effectively lead to the behaviours and actions necessary to achieve a sustainable competitive advantage.

To conclude, as recently shown by Voola and O'Cass (2010), a capability is an asset that: (1) cannot be observed (therefore, it is intangible), (2) cannot be valued and is traded only as part of its entire unit, (3) becomes idiosyncratic to the firm, having been built over time with heavy reliance on tacit knowledge and skills, (4) involves complex interrelationships with other resources, and (5) by its nature is an important factor that affects firm performance outcomes. Hence, the RBV theory contends that capabilities are the most important source of an organisation's success, so, similarly to Voola and O'Cass (2010), we will conceptualise the responsive and proactive stakeholder orientations as capabilities that influence firm performance.

2.2.3 Dynamic capabilities and their relationships with other frameworks

In their meta-analytic work, Chabowski et al. (2011) affirm that the capabilities-based resources developed by a firm can be integrated into its sustainability focus (external–internal), in which the external features focus on stakeholders, while the internal aspects may also include the organisational culture established and implemented by the leadership, management, and employees, among others. These authors conclude by suggesting that future sustainability studies should examine in tandem the external and internal capabilities-based resources, creating a marketplace advantage for the firm.

On the same line, Fernández (1999) highlights that over the years, the RBV theory, which defends firm heterogeneity, has earned relevance within the strategic direction. She affirms that each firm is, and ought to be, different as a result of the accumulation of its resource allocation and capabilities through past decisions. In this context, she posits that under these conditions it is difficult to accept that all firms should adopt similar organisational designs. However, she asserts that the organisational structure affects the internal distribution of power and dominant coalition and, consequently, if those who have the power are critical in the selection of a certain organisational design,

then the preferences, values, beliefs, and knowledge influence the selection of the design, leading back to the institutional approach.

2.3 Stakeholder orientation and institutional theory framework

2.3.1 Theoretical framework

Institutional theory examines the role of pressure and social influences on organisational actions since the social context in which they operate constrains and guides organisations' behaviour (DiMaggio & Powell, 1983, 1991; Meyer & Rowan, 1977; Scott, 1987, 1995). DiMaggio and Powell (1983) argue –using educational institutions– that organisations are often heavily influenced by institutional environments that dictate what a legitimate, successful organisation should look like, behaving and constraining the ability and motivation of their decision makers to conceive of and implement certain types of organisational change. Zajac and Kraatz (1993) affirm that institutional theory also frequently relies on educational organisations as examples of organisations facing strong institutional pressures.

The institutional context surrounding firms determines their strategic decisions since such environments often lead to the uniform adoption of certain practices and structures by organisations and the persistence of these practices and structures, independently of rational efficiency or effectiveness concerns (DiMaggio & Powell, 1983). The rules, norms, traditions, and beliefs pertaining to a specific economic activity, according to Mitchell et al. (1997), define and enforce socially acceptable economic behaviour (Auh & Menguc, 2009). Thus, an organisation must acquiesce to external pressures since its survival is contingent on its compliance with expectations from institutional constituents, such as the state and professional and interest groups (DiMaggio & Powell, 1983). This tendency towards homogenisation is called isomorphism. By definition:

> *"isomorphism is a constraining process that forces one unit in a population to resemble other units that face the same set of environmental conditions"* (DiMaggio & Powell, 1991, p. 66).

DiMaggio and Powell (1991) identify three mechanisms through which pressures toward isomorphism are exerted: the *coercive* mechanism stems from formal and informal pressures for compliance, the *mimetic* mechanism succeeds when an organisation consciously models itself after another that it believes to represent a higher level of success and achievement in the public eye, and the *normative* mechanism is rooted in the process of professionalisation in which values, codes, and standards are imposed by organisations.

According to Hanson (2001), institutional theory focuses on the constraints in the environment of organisations that limit their ability to change. Thus, the forces that constrain the independence of actions exist in each successive organisational layer, including the individual levels of leaders, managers, and other employees. Therefore, this author concludes that institutional theory represents a body of thought that identifies, emphasises, and explores the forces that hinder organisations from changing.

In agreement with Fernández (1999) and Oliver (1991), empirical research has focused particularly on the factors that affect isomorphism, especially in the regulations at the state level, and has not devoted equal attention to studying the factors that impede adaptation. Institutionalism assumes that organisations try to gain legitimacy and thereby survival chances instead of improving their internal efficiency. Consequently, they tend to adopt the same structural designs as other organisations, regardless of whether or not they are the best ones (Fernández, 1999).

2.3.2 Institutional theory and its relationships with other frameworks

As we indicated before, and in accordance with Matsuno and Mentzer (2000), to enlarge the scope of the MO, it is necessary to consider other forces beyond the traditional

customers and competitors. In this sense, Ferrell et al. (2010) propose a more inclusive definition and operationalisation of the MO construct that includes the relevant individual market participants (i.e. competitors, suppliers, and buyers) and influencing factors (i.e. social, cultural, regulatory, and macroeconomic factors).

Additionally, Oliver (1997) points out that institutional theory is sustained in the normative rational choice while RBV theory is sustained in the rational economic choice. This suggests that the two may be combined since firms not only must improve their efficiency and effectiveness by improving scarce resources, but also must gain legitimacy and authority by enhancing the assumption of resources. She claims that a firm's sustainable competitive advantage depends on its ability to manage the institutional resources and capabilities' context. In a later work, Auh and Menguc (2009) explain that firm behaviour is the result not only of the development of internal marketing resources and capabilities but also of the consideration of how institutional factors, such as tradition, pressure, norms, habits, legitimacy, and the demands of the societal environment, affect firm performance.

To conclude, and in accordance with Mitchell et al. (1997), the organisational theories with an open-system orientation, including institutional and population ecology theories, help us to understand the crucial effects of the environment upon organisations, but are less helpful in trying to understand the power of stakeholder management. Furthermore, based on Oliver's (1991) suggestion in which external pressures come from those who shape and enforce the institutional rules and beliefs, Rowley (1997) points out that these external pressures come from a set of stakeholders. Thus, he focuses his work on analysing the conditions that determine the degree of a firm's resistance to external pressures, claiming that the stakeholder framework is suited to pursuing this kind of challenge and basing this argument on the fact that a primary goal of stakeholder theory is to explain and predict how organisations function with respect to stakeholder influences.

2.4 Stakeholder orientation and stakeholder theory framework

2.4.1 Theoretical framework

The importance of stakeholder interests, views, influences, involvement, needs, and rules are incorporated into the work of the most prominent authors in the field of evaluation theory and practice (Bryson, Patton & Bowman, 2011). Likewise, Kipley and Lewis (2008) affirm that in today's globalisation market environment it is becoming increasingly important and even indispensable for organisations to complete an analysis and identification of stakeholder groups.

The stakeholder theory emerged in the field of strategy and underwent extensive development in the 1990s through the work of Clarkson (1995), Donaldson and Preston (1995), Freeman (1999), and Mitchell et al. (1997), among other important works (Alves et al., 2010). Moreover, Harrison, Bosse and Phillips (2010) affirm that the increase in the interest in stakeholder theory is also likely to be due to the recognition of the importance of stakeholder relationships in the acquisition and development of competitive resources.

Freeman (1984) was the first author to articulate the stakeholder framework fully in his seminal book. At its simplest level, stakeholder theory is proposed by Freeman (1984) as an alternative to stockholder-based theories of organisations (Laplume et al., 2008). Freeman's (1984) initial intent is to offer a pragmatic approach to strategy that urges organisations to be cognisant of stakeholders to achieve superior performance.

According to Parmar et al. (2010), the stakeholder theory seems to have arisen to facilitate the understanding of the complexities of today's business challenges with the intention of becoming a new narrative to understand and remedy first the problem of understanding how value is created and traded, second the problem of connecting ethics and capitalism, and third the problem of helping managers to think about management in such a way that the first two problems are addressed.

As Mainardes et al. (2012a) highlight, stakeholders have ongoing relationships with the company and they are susceptible to generating contributions and important resources, so the concepts of stakeholder groups, their involvement, and their relationship with the organisation are contemporary characteristics of modern companies. This emphasis may be attributed to the increased pressures on organisations to respond to different group interests.

According to Ferrell et al. (2010), Freeman's (1984) contemporary stakeholder perspective takes into account the interests of the groups for which firms are responsible. Thus, different stakeholders participate in the operations of organisations because they want to obtain something that benefits their own objectives (Donaldson & Preston, 1995), becoming either competing or common. Thus, the challenge of the managers is to specify and make trade-offs between the conflicting and inconsistent demands of different stakeholders (Länsiluoto et al., 2013).

Hence, in explaining the degree to which organisations give priority to stakeholders' claims, Mitchell et al. (1997) formulate their theory of *stakeholder salience* (Jongbloed et al., 2008)[9]. The proposed model is dynamic, based on a typology of identification that enables explicit recognition of the uniqueness of each situation and managerial perceptions to explain how managers should prioritise the relationships with stakeholders (Mainardes et al., 2012a).

The concept of stakeholder management is put forward to enable organisations to recognise, analyse, and examine the characteristics of individuals and groups who influence or are influenced by organisational behaviour. In this way, Mainardes et al. (2012b) conclude that one of the main contributions to stakeholder theory concerns the influence on the management and strategic development of organisations: changing the

[9] This theory establishes a dynamic stakeholder typology that classifies stakeholders based upon the possession of one, two, or all three attributes: *power* (the stakeholder's power to influence the firm), *legitimacy* (the legitimacy of the stakeholder's relationships with the firm), and *urgency* (the urgency of the stakeholder's claim on the firm).

nature of management decisions, changing the type of objectives, and changing the strategic architecture and point of view.

In the current literature, we can find several stakeholder definitions. In Table 2.2, we present a selection of the most relevant according to the purpose of our research.

Table 2.2 Stakeholder definitions

Author	Definition
Freeman (1984)	"*Any group or individual who can affect or is affected by achievement of organisation's objectives*" (Freeman, 1984, p. 46)
Clarkson (1995)	"*Voluntary stakeholders bear some form of risk as a result of having invested some form of capital, human or financial, something of value, in a firm. Involuntary stakeholders are placed at risk as a result of a firm's activities. But without element of risk there is no stake*" (Clarkson, 1995, p. 5)
Donaldson & Preston (1995)	"*Persons or groups with legitimate interests in procedural and/or substantive aspects of corporate activity*" (Donaldson & Preston, 1995, p. 59)
Mitchell et al. (1997)	"*All persons or groups with legitimate interests participating in an enterprise do so to obtain benefits and that is no prima facie priority of one set of interests and benefits over another*" (Mitchell et al., 1997, p. 868)
Greenley et al. (2005)	"*A stakeholder is any group or individual who can affect, or be affected, the achievement of an organizations' purpose, and each of many stakeholders groups has a unique set of expectations, needs, and values, some of which are conflicting*" (Greenley et al. 2005, p. 1484)
Dunham et al. (2006)	"*Group that the firm needs in order to exist, specifically customers, suppliers, employees, financiers, and communities*" (Dunham, Freeman & Liedtka, 2006, p. 25)
Kipley & Lewis (2008)	"*Those interests groups which can affect or be affected by the achievement of the university's objectives regarding educational matters in structure or manner, regardless of level*" (Kipley & Lewis, 2008, p. 106)

Source: Self-elaborated

As Mitchell et al. (1997) explain, there are two kinds of stakeholder definitions, a **broad view** and a **narrow view**. They highlight those studies that favour a narrow definition (e.g. Clarkson's definition) as seeking to advise managers to focus on a few legitimated stakeholders, while those studies that favour a broad definition (e.g. Freeman's definition) are based on the empirical reality that organisations can be vitally affected by, or can vitally affect, almost anyone.

According to the above argument, taking into consideration the aim of our thesis and following Kipley and Lewis (2008), we propose to employ their broad definition, which has an educational focus, is derived in part from a compilation of definitions by several authors, and also includes defined interests of a university's groups. Hence, we define a university's stakeholders as:

> *"Those interests groups which can affect or be affected by the achievement of the university's objectives regarding educational matters in structure or manner, regardless of level"* (Kipley & Lewis, 2008, p. 106).

2.4.2 Stakeholder theory and strategic management

After Clarkson's (1995) affirmation that for survival and success organisations depend on the ability of their managers to provide their stakeholders with wealth, value, and satisfaction, various theoretical works were proposed to manage stakeholders (Barro, 2009). Specifically, Kipley and Lewis (2008) highlight that stakeholder influence has been proven to be a critical factor in the ability of an organisation to achieve its strategic goal and objectives. Accordingly, de Luque, Washburn, Waldman and House (2008) demonstrate that increased efforts of Chief Executive Officers (CEOs) towards a stakeholder orientation improve the overall firm performance. Likewise, Chapleo and Simms (2010) suggest that identifying and understanding the stakeholders' relevance and their organisational influence or interest are a key issue for managers and policy makers.

Hence, the stakeholder approach to management may be a useful tool to assist organisational actors in dealing with their environments through selectively perceiving, evaluating, and interpreting stakeholder attributes, helping to identify "who or what really counts", and assessing the degree to which managers pay attention to their stakeholders (Harrison et al., 2010; Jongbloed et al., 2008; Parmar et al., 2010). In the context of HEIs, Alves et al. (2010) claim the need for strategic management of

stakeholders, which means understanding the stakeholder requirements, identifying them, establishing communication with them, recognising their interdependence, and seeking to cooperate with other public and private universities, among others. In this respect, Maignan et al.'s (2011) results reveal that a stakeholder construct has a strong positive association with market performance, financial performance, reputation, and employee commitment, so the stakeholder view of the firm can help to improve the managerial practices.

As indicated before, Mitchell et al. (1997) put forward the need for a stakeholder theory that could reliably separate stakeholders from non-stakeholders and in doing so be able to respond to the question about to whom (or what) managers pay attention.

Therefore, according to Mitchell et al. (1997), stakeholder salience is a dynamic model, based on the typology of identification that enables explicit recognition of the uniqueness of each situation and managerial perceptions to explain how managers should prioritise their relationships with stakeholders.

As indicated before, we argue that stakeholder theory holds the key to more effective management and to a more useful, comprehensible theory of the firm society. Thus, according to Mitchell et al. (1997):

> *"The idea that the organisation is an environmentally dependent coalition of divergent interests, which depends upon gaining the attention of (making claims upon) managers at the center of the nexus to effect reconciliations among stakeholders, suggests that the perspective of managers might be vital"* (Mitchell et al., 1997, p. 871)

Hence, following Mitchell et al. (1997), we propose to focus our main research objective on the theory of stakeholder salience, which will allow us to make predictions about how stakeholders change from one class to another and what this means to university managers. Therefore, first of all, we uphold the necessity to identify the

university stakeholders by developing a typology for the specific Spanish public university context, which will help us to develop rigorously an RSO and PSO.

2.4.3 Stakeholder theory and its relationships with other frameworks

As Buysse and Verbeke (2003) show, the modern stakeholder management approach suggests that corporations should not focus their strategic management decisions narrowly on creating shareholder value; quite the contrary, they should broaden their objectives to address the expectations and interests of a wide variety of salient stakeholders. In this way, these authors discuss the linkages between environmental strategy and stakeholder management based on Hart's (1995) suggestion, which affirms that more proactive environmental strategies are associated with a stronger stakeholder orientation. Furthermore, through their meta-analytic work, Chabowski et al. (2011), in agreement with Buysse and Verbeke (2003), propose that the most influential position on marketing assets results from the visible, applicable, and proactive nature of corporate initiatives.

Elsewhere, Parmar et al. (2010) reveal the conceptual similarities between stakeholder theory and institutional theory, even though, as they set out, institutional theorists practically ignore it. Specifically, they suggest that stakeholder theory can help to address why organisations in similar institutional environments may be structured differently or have different systems and processes. They argue that stakeholder theory foregrounds how managers across firms differentially interpret the role of the same institutions (i.e. government, consumer groups) and thus create different roles for them in the value creation process.

In this regard, Mitchell et al. (1997) suggest including, on the one hand, institutional and population ecology theories because they help to understand the crucial effects of the environment upon organisations and, on the other hand, the stakeholder theory

because it is useful for understanding the stakeholder influences on manager relationships. In their words:

> *"In the theory of stakeholder salience, we do nor argue that managers should pay attention to this or that class o stakeholders. Rather, we argue that to achieve certain ends, or because of perceptual factors, managers do pay certain kinds of attention to certain kinds of stakeholders"* (Mitchell et al., 1997, p. 855)

Finally, note Jongbloed et al.'s (2008) and Alves et al.'s (2010) assertions highlighting the fact that few studies exist about HEIs' stakeholder management, being recent and exploratory and focusing special attention on the lack of empirical studies that prove HEIs' relationship with stakeholders. In that sense, it is important to stress the assertion made by Alves et al. (2010):

> *"...despite using the term stakeholder, researches use different theoretical approaches to explain HEI stakeholder management, which shows a lack of consistency in the investigation of this phenomenon"* (Alves et al., 2010, p. 163).

To conclude, and in accordance with Parmar et al. (2010), as the strategic management field moves towards stakeholder theory, an important part of this process will be the direct integration of stakeholder theory into other mainstream theories. Thus, stakeholder theory provides a reasoned perspective on how firms should manage their relationships with stakeholders to facilitate the development of competitive resources and attain the larger idea of sustainable success.

2.5 Conceptual framework: Mixing theoretical framework approaches

HEIs are complex organisations that contribute significantly to the society and economy of a country. This fact explains why research into HEIs has been, until now, a generally investigated area and why its research covers multiple areas of knowledge, as well as

different contexts, approaches, and theoretical frameworks. We found in our literature review that most of the research has a common goal: to generate new knowledge to help understand the complexity around these types of organisations.

Therefore, due to the diversity and large amount of research generated around HEIs, it is appropriate to limit the research topic to address the issue in a clearly defined way, to discover the source of knowledge, and to carry out an accurate critical review. In this sense, the present doctoral dissertation is grounded in the strategic behaviour of HEIs, our first task being to undertake a critical review of the literature to identify the main research lines, as well as the main theoretical frameworks, concerning the selected issue. Our critical review highlights a common issue: all the analysed research identifies the main objective of exploring the factors influencing HEI performance. Furthermore, we identify a dissensus in the meaning of performance, from both its concept definition and its construct measures.

In the literature review, we identified the use of multiple theoretical frameworks: institutional theory; resource dependence theory; population ecology theory; agency theory; resource-based view theory; dynamic capabilities theory; theory of knowledge; stakeholder theory; and strategic marketing, among others. We also identified multiple lines of research, more or less consolidated yet based on different topics: organisation and structure (Christensen, 2011; Larsen, 2001; Mora & Vidal, 2000); strategic management (Bennett & Kottasz, 2011; Broad & Goddard, 2010; Havas, 2008; Mainardes et al., 2012a,b; Matlay, 2009; Nasruddin, Bustami & Inayatullah, 2012; Patterson, 2001; Rodríguez-Ponze & Pedraja-Rejas, 2009; Sedziuviene & Vveinhardt, 2009); the relationship with society (Chapleo & Simms, 2010; Ferrer-Balas, Buckland, & de Mingo, 2009; Solé-Parellada & Llinàs-Audet, 2011; Takala et al., 2001); environmental analysis (Buchbinder, 1993; Card & Card, 2007; Curran, 2001; Dyson, 2004; Häyrien-Alestalo & Peltola, 2006; Palomares-Montero & García-Aracil, 2011; Perotti, 2007; Rebolloso, Fernández-Ramírez & Cantón, 2008; Roşca, Păunescu &

Pârvan, 2010); and internal analysis (Harris & Ogbonna, 2001; Martínez-Torres, 2006; Waas, Verbruggen & Wright, 2010; Walter, Auer & Ritter, 2006; Wilkesmann & Schmid, 2012; Wright, 2010).

In the review carried out, we found heterogeneity among the selected inquiries in terms of theoretical frameworks and research lines. We also identified four main research lines: first, the antecedents, consequences, and impacts on the performance of an MO concept; second, the SO concept in the context of an NPO and its influence on an institution's strategic management and performance; third, stakeholder identification and classification and their influence on an institution's strategic management and performance; and fourth, the dynamic capabilities identifying the MO as a main construct that influences performance. It should be noted that although all the research was carried out relatively recently, this could also be viewed as a strength.

In Table 2.3, we expose the theoretical authors' references, highlighting those in the HEI context and the relationships with other theoretical frameworks, as well as inquiries that are directly supported by combining several theoretical frameworks. We note that there is a growing tendency to explain complex theoretical phenomena through the interrelation of various theoretical frameworks.

Finally, in our critical literature review, we identified a lack of research that supports HEIs by combining institutional theory, dynamic capabilities theory, and stakeholder theory.

The main research objective of this doctoral dissertation is to verify how Spanish public universities can improve their performance through the SO concept. As mentioned previously, and in agreement with Alves et al. (2010), we suggest that a theoretical body working to explain the studied phenomenon is missing. For this reason, and to meet our goal, we propound using a combination of three theories (institutional theory, dynamic capabilities theory, and stakeholder theory) applied in the context of strategic marketing and employing the SO concept.

We sustain this argument by highlighting previous studies that combine two or more frameworks in the HEI context as well as by showing the increasing trend of conducting research through a mixture of frameworks.

- Mixing institutional theory with the resource-based view or dynamic capabilities theory: Oliver (1991, 1997) suggests combining institutional theory and resource-based view theory, underpinning the view that the sustainable competitive advantages of a company depend on its ability to manage the institutional context in which its resources and capabilities are generated. Within the university context, Navarro and Gallardo (2003) argue for a combination of these factors to explain the process of strategic change in these types of institutions.
- Mixing resource-based view theory and the MO concept: Dobni and Luffman (2003) and Voola and O'Cass (2010) use resource-based view theory as a theoretical framework to assess the relationship between different competitive strategies and the MO in companies' performance. In the HEI context, we found authors who defend this mixture (Alves et al., 2010; Akonkwa, 2009).
- Mixing strategic management theories and stakeholder theory: Maignan et al. (2011) ground their research within the SO concept and stakeholder literature. Ferrell et al. (2010) and Mainardes et al. (2012a,b) argue for the implementation of the SO concept as a useful tool for marketing and postulate that the prioritisation of the various stakeholders should change depending on the strategic decisions.
- Mixing institutional theory and stakeholder theory: Handelman et al. (2010) claim that institutional and strategic factors are interrelated and that influencing stakeholders should be understood in a marketing context. Russo, van den Berg and Lavanga (2007) apply this mixture in the context of HEIs.

- To summarise, we propose to combine institutional theory, dynamic capabilities theory, and stakeholder theory to analyse the stakeholder orientation in the Spanish public university context assuming that these concepts overlap with both the market orientation and the societal orientation concept.

Table 2.3 Analysis of empirical papers

Frameworks	Generic studies	HEI context studies	Relationship with other frameworks
Strategic marketing 3 4	Morgan & Hunt (1999) Morgan et al. (2009) Maignan et al. (2011)		In the strategic marketing framework, stakeholder theory is used to build a conceptual framework and implement corporate social responsibility issues.
		Akonkwa (2009)	It identifies that for a good conceptualisation of the MO concept, it must be extended to integrate strategic management with stakeholders' literature.
			In turn, it states that the MO is an intangible asset that can influence a university's strategic management.
		Harrison-Walker (2009)	It supports strategic marketing positioning and acknowledges the influence that certain stakeholders exercise on HEIs.
RBV 2	Barny (1991) Voola & O'Cass (2010)		From the theoretical framework of resources and capabilities, it explores the relationships between competitive strategies and the two behaviours of the MO – proactive and responsive.
Dynamic capabilities theory 1 4	Teece et al. (1997)	Lynch & Baines (2004) Ma & Todorovic (2011) Teece (2011)	
Stakeholder theory 2 3 4	Freeman (1984) Donaldson & Preston (1995) Mitchell et al. (1997) Harrison et al. (2010) Smudde & Courtight (2011)	Oliver (2010)	
		McClung & Werner (2008)	It argues for the importance that certain factors have in the creation of value as a source of competitive advantage.
		Russo et al. (2007)	It argues for the need to manage institutional factors efficiently.
Institutional theory 1	Oliver (1991, 1997)		It claims that sustainable competitiveness depends on the ability to manage the resources and capabilities in an institutional context.
	Lin et al. (2009)	Zajac & Kraatz (1993) Morphew & Huisman (2002)	It combines the theoretical framework of resources and capabilities and institutional theory to explore the consequences of alliances' choices and their impact on organisational performance. It acknowledges the role that resource-based theory can play in a dynamic rather than a static view.

1
Alves et al. (2010), Knox & Gruar (2007), Maignan et al. (2011), and Pavičić et al. (2009) merge stakeholder theory with strategic marketing in the NPO context.

2
Bryson et al. (2007) merge stakeholder theory with the RBV in the NPO context.

3
Navarro & Gallardo (2003) merge institutional theory with dynamic capabilities theory in the NPO context.

4
Cabrera et al. (2011) merge stakeholder theory, the RBV, and the concept of MO to propose a conceptual model that explains the performance improvements of family businesses.

Source: Self-elaborated

3 Stakeholder orientation and universities

3.1 Universities as complex organisations: Structure and organisation

3.1.1 Universities as complex non-profit organisations

The university system has a history that stretches back hundreds of years; nevertheless, universities' aims and relationship with their environment are currently undergoing far-reaching changes, becoming service providers of knowledge (Mora, 2001). In this way, since the Sorbonne Joint Declaration in 1998 and the Bologna Declaration in 1999, many modifications have been introduced to transform Europe into a leading, knowledge-based economy. One of its key goals is the creation of a European Space of Higher Education, in which all students can validate their degrees in any member state without any restrictions (Flavián, Longás & Lozano, 2013).

Thus, nowadays, universities are oriented (1) internally, which includes students, faculty, administrative staff, and managerial teams, and (2) externally, which includes research communities, alumni, businesses, social movements, consumer organisations, governments, and professional associations. In this sense, Jongbloed et al. (2008) discuss the term "university", explaining that its origin is both in the legal Latin "universitas", meaning "community", and in the classical Latin "universus", meaning "totality"; thus, the communities –or stakeholders– that a university is expected to respond to consist of organisations and groups of individuals.

In the current literature, Hall (1987) defines both NPOs and public universities as bodies of individuals who associate for any of the three following purposes: (1) to perform public tasks that have been delegated to them by the state, (2) to perform public tasks for which there is a demand that neither the state nor an NPO is willing to fulfil, or (3) to influence the direction of policy in the state, the for-profit sector, or other NPOs. Accordingly, Benneworth and Jongbloed (2010) affirm that universities, like other sectors that perform public tasks, are transforming into something similar to *social enterprises*, linking their production of goods and services to a social mission.

In the previous literature, several authors highlight the main characteristics of a university as an NPO. Thus, Buchbinder (1993) identifies the following as the main characteristics of a public university: (1) the autonomy and collegiality in the academic workplace,[10] (2) the objectives of HE expressed as the production and transmission of knowledge as a social good, and (3) the pluralism dynamic by contending and co-operating forces and bodies within the university.

Furthermore, in terms of universities' mission, Navarro and Gallardo (2003) affirm that in a *knowledge society* those entities have a broader function than just training professionals and increasing the cultural level of society, that is, the transmitting of knowledge; Mora (2001) refers to them as *modern universities.*

In the current literature, a number of studies support the notion that universities are complex organisations themselves, in which different organisational and governing models exist side by side (Berbegal-Mirabent, Lafuente & Solé Parellada, 2013; Ferrer-Balas et al., 2009; Jongbloed et al., 2008; Larsen, 2001; Mainardes et al., 2012a,b; Mainardes et al., 2014; Navarro & Gallardo, 2003; Patterson, 2001; Rodríguez-Ponze & Pedraja-Rejas, 2009). Universities have evolved into multi-structured organisations representing no more than the arrangement that, to the greatest possible extent, enables

[10] In a university, the academic staff charged with the production and transmission of social knowledge become a key ingredient of the autonomy that is linked to the ability of the collegium to make decisions. Autonomy and collegiality define the structure and politics of participation in the academic enterprise, providing a way of conceptualising a democratic process (Buchbinder, 1993).

their functionality and tending to be reactive to the environmental demands and the their own stability and strategies (Mainardes et al., 2014). Hence, Navarro and Gallardo (2003) consider universities as internal and external complexities of organisations. According to these authors, the internal complexity is based on the quantity and degree of sophistication of the various areas of knowledge and skills of their employees, while the external complexity is derived from the degree of uncertainty and instability of their environment.

Moreover, Patterson (2001) highlights that universities have a multiplicity of goals compared with profit-oriented organisations. Thus, mindful of the fact that decision making is widely dispersed, this author affirms that if universities are not to function purely reactively (responding disjointedly to both environmental and internal political pressures), they must clarify their essential purpose and select a set of goals to serve as guides to decision making.

Besides the above arguments, several studies support that universities operate in an environment characterised by fast technological progress, changes in funding systems, increased competition, and more demanding stakeholders (Ferrer-Balas et al., 2009; Frasquet, Calderón & Cervera., 2012; Havas, 2008; Jongbloed et al., 2008; Mainardes et al., 2012b; Mainardes et al., 2014; Navarro & Gallardo, 2003; Patterson, 2001; Rodríguez-Ponze & Pedraja-Rejas, 2009). Thus, the ambience surrounding the traditional universities has experienced great change in recent years (Mainardes et al., 2014), brought about by the entrance of new players into the higher education arena (traditionally dominated by universities), changing the landscape towards increasingly intense global competition in higher education activities (Havas, 2008). Demographic and technological changes, changing student age profiles, societal trends, the demand for rationalisation in resource consumption, greater financial restrictions, and changes in the higher education financing system are examples of the driving forces behind the current and future changes (Havas, 2008; Mainardes et al., 2014).

Therefore, as a response to these challenges, universities are shifting their objective function from a traditionally oriented focused on teaching and research towards a more complex one (Berbegal-Mirabent et al., 2013). In that sense, in agreement with Mainardes et al. (2014), universities have to evaluate carefully the challenges and threats posed by the environment, understand stakeholder needs, attract and consolidate resources, face up to external changes, and resolve internal problems.

In accordance with Jongbloed et al. (2008), within a scenario in which universities are obligated to be socially accountable institutions, the increased number and variety of communities with their own particular demands may cause a certain amount of confusion about which missions must be selected and prioritised. Thus, understanding universities as complex social actors is the key to articulating their strategy and managing their stakeholders to avoid the case of *mission overload*. In other words, universities are multitask entities with both an internal and a MO, meaning that they have different missions that must be performed simultaneously (Berbegal-Mirabent et al., 2013).

3.1.2 University typologies

As Mora (2001) highlights, there are three main types of universities in accordance with their origins:

- *The Humboldtian system* (which began in the nineteenth century) is a product of German idealism and defines research as the main role of the university. In this system, the links with society's needs are very weak and the financing and organisational details are controlled by the state, yet academic freedom is respected. In this model, civil servant status exists and the institution has no autonomy.
- *The Napoleonic model* came into being in France. In this case, the main purpose of the university is seen as being to serve the state by educating its officers and

promoting economic growth by training the necessary elite. Like the Humboldtian system, the university has civil servant status and no autonomy, but professors form a highly prestigious national body, have considerable power, and are able to exercise considerable influence over curricula and university policy.

- *The Anglo-Saxon model* has a British and an American variant. In this system, power resides largely in the universities themselves, which decide on their own academic and financial policies. The role of the government is limited to providing funds and setting general criteria as part of its higher education policy.

Even though the above models have undergone changes over time, universities still reflect a strong influence stemming from their origins, as we can see from Mora's (2001) study, which concludes that the existence of those three different university cultures in Europe shows diametrically opposed views on the future of university governance. Conversely, there are studies that affirm that these models are beginning to be challenged. An example is found in the recent statements by Havas (2008) that the *Humboldtian model* has become an exception, rather than the rule, because in the last few decades there has been a change related to an increasing number of HEIs that are mainly, or only, teaching organisations as well as a number of research-only positions at certain universities.

In accordance with the above-stated arguments, we can find in the previous literature a number of studies identifying in addition different models of universities (see Table 3.1). According to de Filippo, Casani, García-Zorita, Efraín-García, and Sanz-Casado (2012), the adoption of one or another profile calls for resources and a clear strategy with which to drive the university activity toward a given horizon.

Hence, according to the Centre of Educational Research and Innovation (CERI, 2006), in a university in which HE is internationalised through networks comprising numerous institutions, this arrangement has to based essentially on cooperation, with English as

the core language. Conversely, in a university clearly geared towards meeting local or regional needs, the engaged individuals are primarily funded by the public sector. Alternatively, in a university that competes for research and teaching in a global, liberalised market, ranking systems are a key tool.

In the same way, Mora (2001) highlights universities that adapt managerial techniques to the idiosyncrasies of the university. Thus, a *cybernetic university* (Bargh, Scott & Smith., 1996) learns from its environment and uses the knowledge gained to make the necessary adjustments in accordance with the university priorities; an *entrepreneurial university* (Clark, 1998) sees the market as a driving force from which to gather information regarding opportunities and potential mutually beneficial relationships; and, finally, a *network model* (Bargh et al., 1996; Dill & Sporn, 1995) implies the existence of structured relationships between individuals and groups involving lateral, reciprocal communication to offer a rapid response to increasingly complex situations.

Table 3.1 Models of universities

Study	Classification criteria	Types of university models
Patterson (2001)	University planning model	The *autonomous* model, in which planning is participative and operates from the bottom up. In this model, the decisions on the goals take into account the views of the main constituent groups, made up of the academic staff or representatives of the academic staff, and assume that agreement on goals can be attained through open rational discussion. The *centralised* model, in which decisions are made at the national level and operate from the top down. This model is found in the centrally controlled economies of the former communist bloc countries. The *compromise* model, in which goal determination takes place both at the national level and within the institutions – a mixture of centralised and autonomous procedures. Governments exert pressure and impose legal requirements to ensure that universities respond to national needs and adopt policy goals and objectives. The individual universities make their own decisions on internal goal setting and resource allocation. The New Zealand, British, and Australian systems are examples of this type of model.

Study	Classification criteria	Types of university models
Navarro & Gallardo (2003)	University governance	The bureaucratic model. The most fundamental elements of the management strategy are the plan, the programme, the budget, and the systems of control. The entrepreneurial/market model. The most relevant elements of the management strategy are the value chain, the basic strategies, and the achievement of competitive advantages. The political model. This is typified by flatter organisational structures and more loosely coupled mechanisms of coordination, rather than control, and the management strategies are associated with *learning organisations*.
Laredo (2007)	University main mission	Mass tertiary education conceived as a public service geared essentially to teaching. Higher professional trading that is associated with knowledge transfer based on profession-specific master programmes. This group includes polytechnic universities and focuses on the local community. Academic training and research geared towards establishing quality research teams that draw from PhDs and publishing in high-impact scientific journals. These institutions are characterised by an emphasis on research and aim to be included in international rankings and earn international prestige and renown.
Havas (2008)	University strategy	*Uncharged universities*, which remain largely uncharged, performing the same functions in roughly the same organisational attributes; they are characterised by inertia and poor performance and are not flexible, dynamic, highly successful, or particularly active in various networks. *Radically reformed universities*, which reform themselves radically by transforming their main functions and/or organisational attributes. These universities are highly flexible and thus adapt their courses, teaching, and research approaches, as well as their organisational structures, managerial practices, and other internal processes, to the ever-changing environment.
Pulido (2009)	University strategy	*Unchanged traditional universities* resist change and attempt to continue to operate along traditional lines. *Adapted traditional universities* include new measures to adapt to the changing environment, with a certain reluctance that anchors the process in the immediate surroundings. *Universities with a national/local strategy*, based on strategies that enable them to anticipate the consequences of change in the local environment. *Universities with a global strategy* decide to compete internationally, with professors and students participating in international networks.

Study	Classification criteria	Types of university models
de Filippo et al. (2012)	University strategy	*Resistance to change*: a university is expected to grow in a scantly changing environment, in which the status quo is maintained and guidelines that have worked in the past continue to be adopted. *Evolutionary*: this strategy entails partial adaptation, incorporating the changes demanded by society. It is a passive adaptation inasmuch as it fails to anticipate events, while the entire system evolves as a whole, rather than each individual institution separately. *New public management*: a new paradigm in which the state plays a less prominent role in economic and social activities. *Entrepreneurial university*: seeking success in a global and competitive higher education arena. It implies specialising in the domains in which each institution is best able to compete and international networking in research endeavours, as well as attached knowledge transfer through patents and the creation of spin-offs.

Source: Self-elaborated

3.1.3 Spanish public universities: Main characteristics

Originally, Spanish universities were a typical case of the Napoleonic model[11]. Later, the Spanish constitution of 1978 recognised the autonomy of universities and was implemented by the University Reform Act (*Ley de Reforma de Universidades*, LRU), transforming universities into autonomous institutions and transferring the direct responsibility for universities from the central government to the seventeen autonomous regions (Mora & Vidal, 2000)[12]. Under the new legal structure (LRU) in the Spanish public universities, power is shared by:

- The central government, which decides on general and legal matters concerning staff, the laws governing universities, general guidelines for the organisation of academic programmes, and the financing of national research programmes.

[11] According to which universities are part of the state and academics are civil servants belonging to national bodies (Mora, 2001).

[12] Universities have become more in tune with regional needs, their internal structure has become flexible, the whole system has become open and accessible, funds have been poured into the system as never before, and market forces have started to play a relevant role (Mora & Vidal, 2000).

- Regional governments, which are responsible for financing public universities and planning higher education in the region.
- Universities, which make decisions on internal organisation, curricula and syllabi, policies for tenured staff and non-tenured staff, the organisation of teaching and research, and internal budgeting. In fact, decisions taken by universities are made by the staff through their collegiate boards.
- Academics, staff, and students, in whose hands the internal power in the universities resides to make decisions on the smallest details of academic life.

Mora (2001) describes the main types of academic staff in Spanish universities: tenured (civil servants) and non-tenured (with an administrative contract). There are also three categories of tenured staff: C-professors (*Profesor Titular de Escuela Universitaria*) are comparable to academics with tenured positions at an American university; B-professors (*Profesor Titular de Universidad* and *Catedrático de Escuela Universitario*) could be considered equivalent to associate professors at an American university; and A-professors (*Catedrático de Universidad*) may be considered equivalent to full professors at an American university. Moreover, there are three categories of non-tenured staff: assistant (*Ayudante Doctor*), a position for recent graduates starting their academic careers in which their main goal is to collaborate on research projects; associate (*Asociado*), which is a way of incorporating experts and specialists from the non-academic world and is designed as a part-time position; and associate doctor (*Contratado Doctor*), which is a full-time position equivalent to the C-professor tenured category. In addition to these main categories, others exist, like visiting and emeritus professors. People who fulfil the legal requirements for the position of professor A, B, and C but do not have tenure can provisionally occupy these positions in the interim professor position.

After the 1983 University Reform Act (*Ley de Reforma de Universidades*, LRU), according to which universities were free to define their own academic programmes, in

1998, the Bologna Process was initiated by the Sorbonne and Bologna Declarations (1999), exerting isomorphic pressure that legislators find difficult to ignore and thus starting the restructuring of academic programmes. However, the common normative framework provided by the process of European convergence has not affected the interests (and constraints) structure of Spanish actors (Perotti, 2007).

Thus, after the Bologna Process, European countries adopted similar policies; in the case of Spain, the Spanish 2001 Organic Act on Universities (*Ley Orgánica de Universidades*, LOU) represents the transition to a university model in which knowledge transfer enters the university's core objectives. Further reforms include the modification of the Spanish 2007 Organic Act on Universities (*Ley Orgánica de Universidades*, LOU) 2007 and the enhancement in 2009 of the Spanish universities' strategic framework (*Spanish Strategy University 2015*, EU-2015). As Berbegal-Mirabent et al. (2013) highlight, this reform established new policy frameworks, governance structures, and funding priorities to help universities to increase their commitment to their regions.

Since 1985, Spanish universities have grown significantly in number, from 28 in the year 1975 to 35 in 2005 to the current 77, 48 of which are public and from an autonomous community. Hence, the Spanish higher education system is a mass higher education system (Flavián & Lozano, 2006) with 48 public universities, all of them formally research-oriented and offering doctoral programmes. Hence, universities were no longer dependent on the State and became collegial structures, structured as follows (Mora & Vidal, 2000):

- The collegiate bodies have the decision-making power.
- The University Senate has considerable power, including the election of the rector.
- Boards make decisions on faculties and departments and elect deans and heads of departments.

- The Social Council was established as an external body representing the wider interests of society in the university[13].

As Mora (2001) put forward, in Spain, after the University Reform Act (*Ley de Reforma de Universidades*, LRU), universities became extremely representative in the governance structure, leading to the involvement of academics in managerial issues. Thus, countless managerial positions at all levels of the university structure are occupied by academic staff[14]: from the coordinator of a "teaching unit" to the rector. Accordingly, Mora (2001) states that LRU was interpreted by the Constitutional Court as a prerogative of the *university community* instead of a privilege of the *institution* itself. This did not allow the existence of external bodies, such as boards of trustees, and gave excessive power to academics. In that sense, nowadays there is general agreement regarding the necessity to strengthen the accountability and responsiveness of academia to social needs.

According to Flavián and Lozano (2006), during recent decades, the Spanish university system has undergone a process of change characterised by an enormous expansion of the system and growth in the complexity of defining its services and in the deregulation of its operations. Furthermore, Perotti (2007) points out that the Spanish university characteristics are explained by specific historical events that, after the centralisation of the dictatorship, induced the political class to grant the universities ample autonomy. At the same time, in the absence of a managerial type of governance, this autonomy strengthened the regional governments and internal actors (i.e. those that should have been the principal pivots of institutional change in Spain's university system).

Due to this process, Spanish universities provide several studies highlighting their main characteristics and problems to date. In the following, we introduce the main ones:

[13] Mora and Vidal (2000) affirm that the real influence of this body is quite limited, due to the lack of tradition and to the unclear legal definition of its role.
[14] Most of the individuals in these positions receive reduced teaching hours and a salary increase.

- Flavián and Lozano (2006) identify the increased competition among Spanish universities[15] and point out that the majority of Spanish university' students study in the same regions as their parents live, the majority are not in employment.
- Llinàs-Audet, Girotto and Solé-Parellada (2011) affirm that the increase in the number of Spanish universities has occurred in conjunction with financial constraints, funding problems, and the growing concern for the quality of university services, caused by changes in the European higher education context.
- Mora (2001) and Mora and Vidal (2000) highlights that Spanish university system does not understand the meaning of the mass system and has been influenced by excessive power of academics[16]. Thus, personnel problems makes it difficult to promote differentiation through different funding systems, different salaries, or procedures that do not treat each university under the same rules because of the general principle in the civil services that the State should provide the same services to all citizens independently of any consideration.
- Perotti (2007) put forward the idea that, owing to the new institutional environment (as a result of the University Reform Act in 1983), both politicians and academicians were faced with different preferences, constraints, and opportunities. The shift in the modes of integration from the "state authority" corner to the "academic oligarchy" corner (Clark, 1986) and from centralisation to regionalisation brought forth a new policy regime in which academics and regional political classes had convergent interests in expanding HE.

[15] The recently regenerated vocational training studies, the increasing importance of private sector higher education, the increasing geographical mobility of students, and finally the unemployment rate amongst university graduates, which is substantially higher than in the neighbouring countries.

[16] Although regional governments are responsible for financing universities and indirectly responsible for the payroll, Spanish universities' employees are in most cases civil servants whose salaries and working conditions are set by the central government.

- Pérez and Serrano (2012) identify three main university system inefficiencies: scarce flexibility of supply and educational demand, poor academic performance of the students, and inadequate recognition of academic staff members' specialisation.

Thus, under the proposals of the European Commission, Grau (2012) identifies two major objectives: more competitive and responsible universities and more diversified universities. For the first objective, they propose greater autonomy, better governance, and more accountability; strategic management; and information systems and financing systems with strong incentives. For the second objective, they suggest specialisation of the university, faculty specialisation, internationalization of resources and activities, and selective boosts to international excellence.

3.2 Environment and universities: Influences and effects

3.2.1 Pressures from the external environment

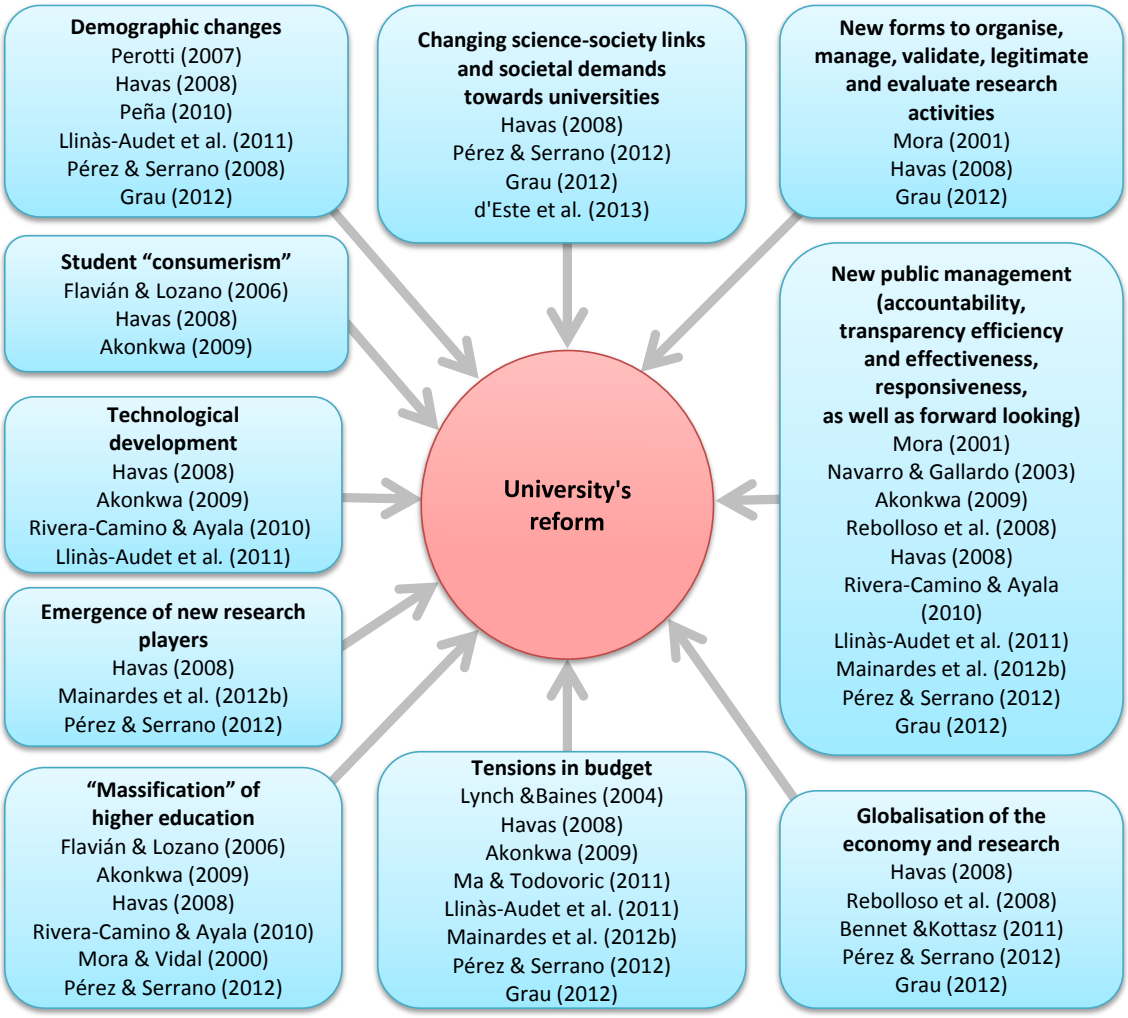
Universities have not escaped adapting to their social and economic contexts through the development of new structures based on the three main missions of teaching, research, and knowledge transfer (Palomares-Montero & García-Aracil, 2011). If universities are not to function purely reactively[17], then they must clarify their essential purpose and select a set of goals to serve as guides to decision making (Patterson, 2001). Hence, everywhere that HE has reached a certain level of development, this fact has been understood (Mora, 2001).

Havas (2008) identifies the actual factors that depict the complex context of universities. According to this author, there is a strong consensus on the need for a new round of fundamental university reforms from all corners –policy makers, analysts, and

[17] Responding disjointedly to these environmental pressures imposed on the one hand and to their internal political pressures on the other.

universities themselves– and the reasons for that are manifold. In the current literature, we can find several authors supporting this argument (see Figure 3.1).

Figure 3.1 Pressures for university reforms



Source: Adapted from Havas (2008)

Besides the aforementioned pressures to change universities, Jongbloed et al. (2008) highlight that it is important to note that for universities the institutional contingency and regional contingency –history and geography[18]– will influence their choice of mission and profile and consequently how they relate to their stakeholders. Similarly, Rebolloso et al. (2008) affirm that the complexity of institutions combines a certain

[18] Universities are embedded in a national as well as a regional system – some in the neighbourhood of a large industry and others in more remote áreas (Jongbloed et al., 2008).

culture and formalisation across different countries with a legal and administrative framework for each country. Therefore, different types of universities emerge, ranging from research-intensive to teaching-intensive, with a technological character or a multi-faculty composition.

To conclude, and in agreement with Rebolloso et al. (2008), changes in university organisation have a multitude of potential origins, from supranational legislation or ideological tendencies to strategic changes and improvements promoted in each centre, even in each departmental unit. Government policies are generally considered to have great influence on stakeholder management, as these have a direct impact on the strategic direction of the organisation (Chapleo & Simms, 2010; Conway et al., 1994; Lynch & Baines, 2004; Ma & Todorovic, 2011; Mainardes et al., 2014).

In line with Bennett and Kottasz (2011), globalised educational environments and national pressures are increasingly driving European universities and the faculties within them to adopt both competitive (as opposed to co-operative) and strategic (rather than ad hoc) approaches to the internationalisation of their activities. Alternatively, d'Este, Tang, Madhi, Neely and Sánchez-Barrioluengo (2013) highlight that to satisfy the stakeholders' multiple demands and to extend the university outreach activities to the wider society, policy makers in developed and developing economies are encouraging greater collaboration between universities and businesses and introducing initiatives to facilitate the commercialisation of academic research outputs and promote engagement and communication with the non-academic community.

3.2.2 Pressures from the internal structures

The substantial changes in the university environment imply, on the one hand, the need for new institutional legitimacy for universities and, on the other hand, a proactive organisational response regarding which new resources and capabilities are necessary (Navarro & Gallardo, 2003). In this new scenario, the reality faced by public

universities is defined by the need for more professional management structures and more entrepreneurial types of organisations to tackle those changes in their surrounding environment (Alves et al., 2010), developing new forms of management that blend the necessary business management methods (Mora, 2001).

In the current literature, several authors justify the need to implement strategic processes, approaches, or management as a way to adapt universities to the new scenario, because universities lack the capacity to respond to social needs with speed, efficiency, effectiveness, and quality (Bennett & Kottasz, 2011; Llinàs-Audet et al., 2011; Navarro & Gallardo, 2003; Rodríguez-Ponze & Pedraja-Rejas, 2009).

Specifically, Jongbloed et al. (2008) specify that universities need a more articulated strategy for understanding and managing stakeholder relationships, claiming this as a key to understanding universities as complex social actors, because a university becomes more integrated into society when the direct role of the state is reduced and both the autonomy of the individual universities and the role of the market increase. Besides, Van Vught (2008) explains that even in countries where state regulation used to be the dominant factor, new policies are emerging, designed to create markets in HE, to strengthen the ties to industry, and to stimulate higher levels of external diversity.

Furthermore, the literature indicates that marketing theories are gradually being applied by many universities as a way to gain a larger share of an international market (Hemsley-Brown & Oplatka, 2006). Namely, Akonkwa (2009) posits that the MO is emerging as a new paradigm that can be a suitable management strategy to react to the following university pressures (see Figure 3.1).

However, Rivera-Camino and Ayala (2010) support the assertion that the MO is important for the new education context (e.g. globalisation, new technologies, competitiveness among countries) for which universities are not prepared and posit that this concept can be seen as a solution for universities facing growing competitiveness to obtain resources on their own. In the same way, as a response to the complexity of the

university context, Conway et al. (1994) identify the necessity to satisfy potential customers' needs by formulating competitive strategies with the aim of becoming more market-oriented.

3.2.3 The current stage of Spanish public universities

As mentioned above in Section 3.1.3, after the centralism of the dictatorship, the political class was induced to grant the universities ample autonomy. Thus, nowadays, Spanish public universities are autonomous and more in tune with regional needs. Furthermore, their internal structure has become flexible, the whole system has become open and accessible, funds have been poured into the system as never before, and market forces have started to play a relevant role (Mora & Vidal, 2000).

In addition, Perotti (2007) explains that the particular circumstances of Spanish higher education's change process[19] make the Spanish case unique as regards the rapidity of change and the radical break with the past. Likewise, Peña (2010) affirms that the Spanish universities' change is driven by three main factors: the Bologna Process implementation, the Spanish economy's need to incorporate new knowledge and to adapt to a changing environment, and demographical changes.

Furthermore, Perotti (2007) identifies as a variable of change, among others, the behaviour of both internal actors (academics and managers) and external non-economic ones (the political class) because in the absence of a managerial type of governance (all attempts in this direction have been blocked by academics), the Spanish public universities' autonomy has strengthened the regional governments and internal actors.

Consequently, authors such as Flavián and Lozano (2004) put forward the need for Spanish universities to adapt to these new conditions, orienting their formative offer to the new needs and social demands. Guerrero and Urbano (2012) affirm that to survive

[19] Demographic trends, the demand for a productive system, the behaviour of both internal actors and external non-economic ones, the Europe-wide process of convergence, and the family background or socio-cultural environment.

in the global competitive environment, Spanish universities have been experimenting with several cultural, educational, institutional, and legislative challenges.

Despite the above justifications for the need to change, the reality of the governance system is that it acts as a barrier to this process. In this regard, Llinás-Audet et al. (2011) emphasise that many Spanish universities still have not completely resolved the problems that emerge from the complexity involved in integrating the university stakeholders into the strategic processes and managing them. These authors support the results from Aghion, Dewatripont, Hoxby, Mas-Colell and Sapir (2010) previous study, which shows that British and Swedish universities have a high index of autonomy and competence while Spanish universities are at lower levels.

As Mora and Vidal (2000) explain, the main responsibility for managing institutions lies with academics; the professional managers are always in subordinate positions. Mora (2001) reveals that this fact is due to the interpretation of the Constitutional Court (composed mostly of professors) of university autonomy being to provide power to academics to control the institutions fully. Thus, Mora and Vidal (2000) affirm that while most of the decision-making power lies with academics, who are temporarily occupying a managerial position, the results are normally far from being a model of good practice.

More concretely, Rebolloso et al. (2008) stress that in Spain, the situation is confusing and not entirely praiseworthy because it has not yet abandoned the previous system due to a lack of interest among faculty, students, and academic authorities, who have comfortably settled back and are waiting to be told what to do while others experiment first.

In this regard, Grau (2012) is very forceful in stating that there is a lack of belief in orthodox discourse, because Spanish universities are not part of the actual political priorities. He adds that it is mostly the disposition of policy makers to "govern" universities without understanding the need for their autonomous character.

In addition to the barrier mentioned above, the literature also highlights that the Spanish higher education system has depended on the distinctive nature of its economy, which is characterised by enterprises with scant propensity to innovate (with the exception of certain multinationals) and by the weight of traditional sectors (construction, tourism, etc.). This fact has made it less remunerative for economic actors to develop synergies with universities (Perotti, 2007). Likewise, Grau (2012) posits that in the absence of pressure on policy making, companies will not even demand continuing public investment in Spanish universities; on the contrary, the dominant discourse reflects a lack of knowledge and distrust towards universities.

Similarly, Berbegal-Mirabent et al. (2013) affirm that, despite the Spanish 2007 Organic Act on Universities (*Ley Orgánica de Universidades*, LOU) and EU-2015[20], the relatively scarce entrepreneurial culture along with the lack of incentives and the limited capacity of faculty to own spin-offs' equity diminish Spanish universities' potential to engage effectively in knowledge transfer.

Despite the widespread existence of these traits, various studies analyse the causes that can lead to the existence of differences between Spanish universities. Mora and Vidal (2000) cite the example of the University Pompeu Fabra in Barcelona as the most outstanding case of experience in promoting differentiation amongst Spanish public universities. These authors add that this university feels it is in permanent conflict with the rest of the public universities, which consider themselves to be discriminated against by public authorities. Moreover, Berbegal-Mirabent et al. (2013) affirm that efficient Spanish universities operate in territories with greater technological intensity and a higher new business formation rate, concluding that the presence of specific infrastructures and certain regional characteristics also plays a role, especially the possibility to have access to high-technology sectors in the region. These authors

[20] Public administrations design incentives to promote entrepreneurship within the territory. However, these policies are subordinated to cultural patterns and natural territory barriers (Berbegal-Mirabent et al., 2013).

conclude by highlighting that the differences may concern the geographic location and the exposure to specific regional economic variables.

3.3 Universities toward society: The role of the stakeholders

As mentioned above, until a few years ago, the Spanish universities developed their services and activities in isolation from their socioeconomic and political environment, but today the reality is very different because of the society demand for universities to render an account of their relevance (Grau, 2012; Pérez & Serrano, 2012).

Nowadays, how a university (or indeed its many constituent parts) proceeds to identify, prioritise, and engage with its communities reflect the evolution of the university (Jongbloed et al., 2008). Thus, one way of embedding universities in society is by involving external actors; in other words, this means analysing the effect of stakeholders' influence on HEIs because it exercises more pressure on more issues than before (Bjørkquist, 2008). Alves et al. (2010) support this argument, justifying the requirement to identify the HEIs' stakeholders and their needs before an organisation defines its priorities and relational strategies.

In this sense, according to Benneworth and Jongbloed (2010), a *social contract* exists between HE and society through which universities receive public funding and other privileges. As these authors explain, the social contract emphasises universities' responsibility towards a broader range of stakeholders than traditionally, including the government, students, and the academic community. As a receiver of public funding, universities must account for their activities and achievements to the government and wider society. Therefore, there are interconnections and interdependencies between HE, society, and economy, which produce a number of relationships (with local, regional, national, and international ingredients) between them and their external communities and stakeholders (Jongbloed et al., 2008). Hence, universities, as complex organisations, have to deal with a variety of stakeholders (Akonkwa, 2009) with

multiple objectives, many of which are difficult to measure and related to the diverse stakeholders (Alves et al., 2010).

3.3.1 University stakeholders as a key strategic concept

As mentioned above, universities are forced to be in constant dialogue with their stakeholders in society (Jongbloed et al., 2008), so analysing exactly who the stakeholders are, what their respective interests are, and how they act is fundamental to contemporary organisations (Mainardes et al., 2012a). However, the fact is highlighted by Mainardes et al. (2014) that, at present, universities reflect a lack of capacity for engaging in stakeholder relationships, confirming the traditional lack of society orientation of public universities. Ma and Todorovic (2011) support this argument by demonstrating empirically that university departments only consider students as internal stakeholders and therefore do not support the notion that every university may deal with a slightly different set of external customers or stakeholders.

Additionally, the influence of stakeholder groups depends on relational structures, contractual forms, and institutional support (Friedman & Miles, 2002); thus, universities are increasingly embedded in specialised regional networks and innovation systems and research is more and more dependent on private sponsors, donors, and commercial partners, who are typically local actors. In this context, as Russo et al. (2007) highlight, the potential synergies between universities and local communities increase because of the loss of relevance of nation states and the revamped role of cities.

In this scenario, it is clear that universities need to pay attention to both internal and external stakeholders to gain a full understanding of their respective needs and expectations. Thus, in agreement with Macedo and Pinho (2006), it seems reasonable to assume that public universities' managers have to manage the needs of different stakeholders due to the diversity of stakeholders with whom their organisations interact. Managing these different needs has become a complex process because they often

conflict with each other. As Mainardes et al. (2012a) explain, meeting every need is not always feasible, causing the necessity to pay greater attention to certain specific groups to the detriment to others.

This fact is illustrated by McClung and Werner's (2008) example of a struggle between diverse stakeholders. They highlight the fact that the increasing pressures of the government and industry on a more entrepreneurial university view cause many academics to consider the extinguishing of liberal education, while others argue that becoming entrepreneurial does not automatically imply a loss of core values or depravation of the university's soul.

In the Spanish public university system, the situation is further compounded because universities have taken advantage of the fragmentation of regional governments and the lack of competition among them has increased their privileges, causing a lack of initiatives to promote differentiation, increase competitiveness, or take whatever action is required to make the whole system more oriented towards the diversity of social needs (Mora & Vidal, 2000).

As an example, these authors highlight that the mass higher education system is incompatible with the traditional curricula model that focused on educating future professionals with a solid background. For these authors, training students as if they are all to be highly qualified professionals, researchers, or top-level administrators is not only a waste of time, but also a source of frustration for many young graduates. They advocate adapting the system to the new situation with a new teaching and learning style that is more suited to social needs. However, in these committees, a conflict arose between the interest of academics (keeping and developing courses related to their expertise, personal interests, or merely routines) and the suitability of adapting curricula to new needs. To change this trend of "negative effects" and to provide a better service to society, Mora and Vidal (2000) posit that Spanish public universities must face a new

challenge: to make the whole system more oriented towards social demands and to reduce the influence of academics.

To conclude, Laczniak and Murphy (2012) suggest more research that adopts a broader stakeholder orientation, which means looking beyond customers as the sole target of marketing activities. This has changed recently because it seems that practitioners make prominent the adoption of a stakeholder orientation in recognition of the need to pay greater marketing attention to all stakeholders. In other words, this means putting the creation of stakeholder benefit at the centre of strategy consideration, which they refer to as "hard-form" stakeholder thinking. In agreement with these authors, our thesis consists of applying this argument in the Spanish university context to measure the degree of stakeholder orientation of this kind of organisation.

3.3.2 Stakeholders in HEIs: Definitions and typologies

As mentioned in the previous chapter, we propose to use the following two **definitions** of university stakeholders:

> *"Those interests groups which can affect or be affected by the achievement of the university's objectives regarding educational matters in structure or manner, regardless of level"* (Kipley & Lewis, 2008, p. 106).
>
> *"… a person or entity with a legitimate interest in higher education and who, as such, acquires the right to intervene"* (Amaral & Magalhaes, 2002, p. 2).

To develop our research objectives, we take into account Benneworth and Jongbloed's (2010) affirmation that stakeholders are not solely passive recipients of general benefits because in the university context we can find that those who may demand a more active voice in the organisation's running to improve the value of their share and their

benefits[21]. Furthermore, following d'Este et al. (2013), universities are currently expected to satisfy the demands of various audiences, including students (expected high-quality teaching), academic communities (high-quality knowledge), governments (support regional development and the economy as a whole), businesses (expect new ideas for their commercial activities), and the wider society (to resolve many of the issues that affect it).

Therefore, in accordance with their definition, Amaral and Magalhaes (2002) suggest that the list of stakeholders in HE is considerably longer than that for both for-profit entities and NPOs because of the ongoing debate about their legitimacy and right to intervene or influence aspects of HEIs' activities. Following this assertion, Benneworth and Jongbloed (2010) state that new classes of university stakeholder have emerged as universities' wider social aims have evolved.

Agreeing with Bjørkquist (2008), we consider it necessary to reflect on how we understand the notion of stakeholders. Therefore, consistent with the complexity of HEIs characterised by multiple objectives and tasks, we also, like Harrison et al. (2010), include in our conceptualisation those stakeholders who are more closely associated with the university's missions and objectives. Hence, we take into account Neave's (2002) "stakeholder society" contribution, whereby the stakeholders are perceived to be part of managerialism in the HE context, implying a change in the power stakeholder relations within and around universities and thus being more responsive to their needs than before.

In the current literature, we found several studies proposing several forms to classify university stakeholders (Mainardes et al., 2012a). In one of those efforts, Clarkson (1995) classifies stakeholders as **primary**[22] or **secondary**[23], based on the type of

[21] According to these authors, stakeholders are actors (organisations, agencies, clubs, groups, or individuals) who gain or lose from an organisation's activities, with an interest (stake) in the organisation's performance.

[22] Primary stakeholders are those whose continued participation is absolutely necessary for the business (employees, suppliers, customers, and public agencies) engaged in formal relationships with the organisation's survival (Maignan et al., 2005).

relationships that they entertain with the firm. Tetřevová and Sabolová (2010) consider primary university stakeholders as those without which the organisation cannot survive as a going concern, specifically those entities that can significantly affect the prosperity and future existence of the given university (students, course applicants, employees, the Ministry of Education, grant agencies, businesses, other educational institutions, and public stakeholder groups). Thus, it is necessary to pay special attention to the primary stakeholders (Tetřevová & Sabolová, 2010) because first they are those whose continued participation is absolutely necessary for organisational survival, and the secondary stakeholders are not essential (Maignan et al., 2005).

However, as Matlay (2009) posits, this kind of classification is mainly conceptual and becomes blurred when it is necessary to introduce stakeholders' perceptions, involvement, and expectations. Thus, these authors, together with Conway et al. (1994), propose as the best method Robinson and Long's (1987) classification, which categorises stakeholders as primary[24], secondary[25], and tertiary[26].

On the other hand, Freeman (1984) argues that both **internal**[27] and **external**[28] stakeholders exist, which managers need to take into account. Thus, following the classification proposed by Reavil (1998), university stakeholders can be categorised into internal stakeholders (students, teaching and research staff, administrators, and management and external stakeholders[29] (parents, alumni, and entrepreneurs, as well as various representatives of business, commerce, professional bodies, the government, and the community).

Various models have been put forward in an attempt to identify the main stakeholders of HEIs. In accordance with the previous literature, given the main groups identified in

[23] Secondary stakeholders (actors such as the media and special interest groups) are not usually engaged in transactions with the focal organisation and are not essential for its survival (Maignan et al., 2005).
[24] Students and faculty members who are directly involved in entrepreneurship education.
[25] Employers and educational authorities.
[26] Composed of validating bodies, alumni, parents, and extended families.
[27] Owners, customers, employees, and suppliers.
[28] Governments, competitors, consumer advocates, environmentalists, special interest groups, and the media.
[29] Following Bjørkquist (2008), these are the actors who normally do not work in the institution in question.

this, and following Burrows's (1999) categorisation, we proceed to present the main ones:

- *Government*: this is the most important source of funding for public HEIs (Benneworth & Jongbloed, 2010). Alves et al. (2010), consider the government a main funder that would like to ensure that HE meets the interests of students and society in general (Jongbloed et al., 2008; Mainardes et al., 2014).
- *Employees*: in particular, teaching and research staff represent the core of scientific production, which already participates in HEI boards of administration and management.
- *Students*: as many authors suggest without this type of stakeholder, the HEI would lose the justification for its existence (Alves et al., 2010; Flavián & Lozano, 2006; Hammond et al., 2006; Jongbloed et al., 2008; Mainardes et al., 2014; Morris, Coombes, Schindehutte & Allen, 2007).
- *Employers*: as Mainardes et al. (2014) explain, this stakeholder is clearly one of the main beneficiaries of good university performance.
- *Local community*: as Russo et al. (2007) state, the local community becomes a stakeholder because academic training cannot be demarcated from the social and environmental context in which it takes place.
- *Research councils*: as Chapleo and Simms (2010) suggest, these can be key "vehicles of academic stem".

Benneworth and Jongbloed (2010) and Mainardes et al. (2014) propose, following Mitchell et al. (1997) classification, to identify university stakeholders. Specifically, Mainardes et al. (2014) identify that, in contrast to the government and students, the other university stakeholders (such as employers and the local community, among others) may have different interests and exert different levels and types of influence over higher education organisations, especially regarding the provision of resources to

the university. In this way, they identify university stakeholders through a categorisation according to the Mitchell et al. (1997) typology:

- *Definitive*: senior university management (the dean's team, general board, council of deans); national government/ministries/accreditation agencies; teaching and research staff, students, the European Union, professional orders.
- *Dominant*: private financiers (business angels, risk capital, investors).
- *Discretionary*: scientific communities and their publications; research and development partner companies; research and development actors (incubators, technological parks, patent agencies, research centres, external researchers); employers and business/trade associations.
- *Non-stakeholders*: other universities and/or HEIs (public or private); the host municipality (local government authorities); the society in general; the university-hosted local community (population, companies, services); non-teaching members of staff; foreign students; student families; former students; secondary schools.

Finally, Chapleo and Simms (2010) highlight the still scarce research applying stakeholder theory in the public and non-profit contexts, which is still scarcer in the particular public university context. They conclude by suggesting that the factor of most importance could be the degree to which a stakeholder group affects the university policy and strategy. On this research line, Mainardes et al. (2012a) establish a new categorisation of public university stakeholders according to the influence of a particular group over another regarding their effects on a university's policy and strategy. They conclude that in a public university it is possible to state six types of stakeholder groups:

- *Regulatory stakeholders*. The stakeholder holds influence over the organisation, while the latter holds no (or very little) influence over the stakeholder. National governments/ministries/accreditation agencies and the European Union.
- *Controller stakeholders*. The stakeholder and the organisation mutually influence each other even though the stakeholder holds more influence over the organisation than the reverse. Senior university management (the dean's team, general board, council of deans), scientific communities and their publications, employers, professional orders, private financiers (business angels, risk capital, companies, investors).
- *Partner stakeholders*. The stakeholder and the organisation mutually influence each other but neither party predominates and hence there is equilibrium. Research and development partner companies, other universities and/or HEIs (public or private), research and development actors (incubators, technological parks, patent agencies, research centres, external researchers), students, former students, society in general, testing and/or research staff, foreign students, business/trade associations.
- *Passive stakeholders*. The stakeholder and the organisation mutually influence each other but the organisation enjoys greater influence. Students' families, non-teaching members of staff, the university-hosted local community (population, companies, services), the host municipality (local government authorities).
- *Dependent stakeholders*. The organisation holds influence over the stakeholder and the latter holds little or no influence over the organisation.
- *Non-stakeholders*. The stakeholder and the organisation do not influence each other.

As mentioned above, there are several studies in the previous literature that identify university stakeholders and most of them are undertaken following a certain classification (see Table 3.2).

Table 3.2 Contributions to a higher education stakeholder concept

Study	Stakeholder concept	Classification	Stakeholders identified
Russo et al. (2007)	Different stakeholders are affected in various ways and have specific interests in the development of HE in a city.	National/International	Community (citizens and their associations, other users groups institutions). Private sector (business community, associations of industry, Trade unions).
Bjørkquist (2008)	A stakeholder is a person or entity with legitimate interests in HE and, as such, acquires the right to intervene.	Formal/informal positions External/internal	Internal: employees (academics and administrative personnel) and students. External: government, regional authorities, local companies, other HEIs, professional associations.
Caballero, Vázquez & Quintás. (2009)	Following Freeman's (1984) definition, these authors seek to analyse the stakeholders' influence on strategies for students' employability.	Primary/secondary	Primary: academics, governing team, alumni, students, business, public administration. Secondary: administration staff, community, labor unions, media.
Jongbloed et al. (2008)	Following Freeman's (1984) definition, these authors reveal that a particular community is relevant to the university only if there is some expectation on both sides that some service can be rendered or a mutually beneficial exchange can take place.	Latent/expectant/ definitive Internal/external Individual/collective Academic/non-academic	Governmental entities, management, employees, clients, suppliers, competition, donors, communities, government regulators, non-governanmental regulators, financial intermediaries, alliances and partnerships.
Akonkwa (2009)	Following Kotler and Fox (1985), the study identifies multiple stakeholders.	none	Faculty members, 'administration council, suppliers, governmental agencies, enterprises, foundations, local community, *alumnis*, general public, media, potential students, current students, accreditation agencies, parents, administrative staff, competitors.

Study	Stakeholder concept	Classification	Stakeholders identified
Pavičić et al. (2009)	The function of the HE institution should be to fulfil the interest and goals of multiple stakeholders, taking into account both the scarcity of resources and the relevance of stakeholders' interests to the mission of the institution (Driscroll & Wicks, 1998).	Latent/expectant/ definitive	Students, potential students, the economy (i.e. the employers), teaching staff or faculty, the government ministry of science, education and sports/other state-run institutions, partners or current and potential students, other HE institutions.
Alves et al. (2010)	Following Burrow's (1999) classification, the study argues that it is possible to establish that HEIs' stakeholders are both diverse and difficult to quantify.	Latent/expectant/ definitive	Governmental entities, HEI administration, employees, customers, suppliers, competitors, donors, communities, government regulators, non-governmental regulators, financial intermediaries and alliance partners (Burrows, 1999).
Chapleo & Simms (2010)	The identification of relevant stakeholders seemingly underpins stakeholder management.	Internal Academic/research Local/ geographical/ city Other indirect national stakeholders Student based & student recruitment	Students, direct students funders, university based stakeholders, staff, academic&research bodies&other funding councils, geographical/locality stakeholders, other direct national stakeholders, other indirect national stakeholders, students bodies.
Tetřevová & Sabolová (2010)	The subjects that can be considered as relevant stakeholders are those representing certain opportunities for or threats to the organisation.	Primary/secondary	Students, their graduates, the course applicants, their employees, the Ministry of Education, the grant agencies, the sponsors, other educational institutions, business, suppliers, the governments of the central, regional and local levels, the public authorities, and the public.
Benneworth & Jongbloed (2010)	Stakeholders are actors who may gain or lose from an organisation's performance. Universities' stakeholders include those potentially positioned to benefit from universities' social impacts.	Latent/expectant/ definitive	Governmental entities, management, employees, clients, suppliers, competition, donors, communities, government regulators, non-governanmental regulators, financial intermediaries, alliances and partnerships (Burrows, 1999).

Study	Stakeholder concept	Classification	Stakeholders identified
Mainardes et al. (2012a)	The stakeholder management concept serves to ensure that organisations recognise, analyse, and examine the individual and group characteristics that influence or are influenced by organisational behaviours and actions.	Regulatory Controller Partner Passive Depends Non-stakeholder	Senior university management, national government / ministries / accreditation agencies, teaching and/or research staff, students, European Union, professional orders, private financiers, scientific communities, partner companies, research and development actors, employers, business/trade associations, other HEI, host municipality, society in general, host local community, non-teaching members of staff, foreign students, student families, former students, secondary schools.
Mainardes et al. (2014)	Higher education stakeholders may incorporate singular and collective entities with a legitimate interest in the higher education sector and thus holding a right to participate.	Traditional public university financiers/non traditional potential public university financiers	Non traditional potential stakeholders' public university financiers: employers, companies-research and development services, local communities, secondary and high schools, student families, research and development actors, professional orders, private financing, commercial/business associations, former students, international students, scientific communities.

Source: Self-elaborated

3.3.3 Spanish university stakeholder map

According to the above explanation, identifying and prioritising the different HEI stakeholders is not easy, because it is difficult to ascertain whether university research is more relevant and better connected to the needs of society and its range of stakeholders. Therefore, in agreement with Alves et al. (2010), it is necessary to design appropriate indicators to deal with the growing complexity in terms of stakeholder needs and requirements. They advocate identifying HEIs' stakeholders by classifying them according to their relative importance since a university that owns the ability to identify, prioritise, and engage with its communities reflects the development of the organisation.

Thus, in line with Mainardes et al. (2014), the importance of identifying and guiding stakeholders in accordance with the strategic objectives of the institution needs to be one of the key steps in setting out and implementing a stakeholder management

strategy. Specifically, Akonkwa (2009) suggests that the key stakeholders in HE and the way to respond to their expectations should be defined prior to their inclusion in the MO conceptualisation.

According to Llinàs-Audet et al. (2011), many Spanish universities have not fully resolved the methodological problems arising from the complexity involved in attempting to manage and integrate all the stakeholders into their strategic planning. Thus, following Mainardes et al. (2012a), our objective is to set out a new classification model for Spanish university stakeholders that will help us to identify them and to include them in the SO conceptualisation.

To identify which stakeholders are of a high level of importance in the literature, we followed Alves et al.'s (2010) procedure and recollected the frequency of stakeholders' identification in the university literature review. The results for universities are displayed in Table 3.3, in which we can observe the total occurrences of each stakeholder across the university stakeholder literature.

From Table 3.3, it should be highlighted that the most commonly cited stakeholder groups are students, followed by employers, the government, and academic staff and the other HEI members of staff. Other stakeholders are only superficially analysed and, for example, a classification ranking their respective levels of importance is lacking.

Table 3.3 Scoring of university stakeholders

Stakeholder group	Score	Studies
Students	*27*	Weaver (1976); Smith & Cavusgil (1984); Robinson & Long (1987); Licata & Frankwick (1996); Owlia & Aspinwall (1996); Rowley (1997); Franz (1998); Reavil (1998); Brown (1999); Harvey (1999); Mcfarlane & Lomas (1999); Baldwin (2002); Williams (2002); Arnett, et al. (2003); Pearce (2003); Simmons, Iles, & Yolles(2005); Roberts (2004); Engwall (2007); Kipley & Lewis (2008); Caballero et al. (2009); Pavičić et al. (2009); Matlay (2009); Akonkwa (2009); Chapleo & Simms (2010);Tetřevová & Sabolová (2010)
Business – employers	*21*	Weaver (1976); Smith & Cavusgil (1984); Robinson & Long (1987); Licata & Frankwick (1996); Owlia & Aspinwall (1996); Rowley (1997); Franz (1998); Reavil (1998); Brown (1999); Harvey (1999); Mcfarlane & Lomas (1999); Russo et al. (2007);

Stakeholder group	Score	Studies
		Bjørkquist (2008); Caballero et al. (2009); Pavičić et al. (2009); Matlay (2009); Akonkwa (2009); Chapleo & Simms (2010); Tetřevová & Sabolová (2010)
Governments entities	*18*	Weaver (1976); Robinson & Long (1987); Owlia & Aspinwall (1996); Rowley (1997); Reavil (1998); Brown (1999); Mcfarlane & Lomas (1999); Simmons et al. (2005); Engwall (2007); Bjørkquist (2008); Okunoye (2008); Kipley & Lewis (2008); Caballero et al. (2009); Pavičić et al. (2009); Matlay (2009); Akonkwa (2009); Chapleo & Simms (2010); Tetřevová & Sabolová (2010)
Academics – teaching and research staff - faculty	*16*	Weaver (1976); Robinson & Long (1987); Owlia & Aspinwall (1996); Reavil (1998); Brown (1999); Mcfarlane & Lomas (1999); Baldwin (2002); Simmons et al. (2005); Roberts (2004); Watson (2007); Okunoye (2008); Kipley & Lewis(2008); Caballero et al. (2009); Pavičić et al. (2009); Matlay (2009); Akonkwa (2009)
Senior HEI management - institutional management– administration	*14*	Weaver (1976); Rowley (1997); Reavil (1998); Burrows (1999); Baldwin (2002); Simmons et al. (2005); Engwall (2007); Kipley & Lewis (2008); Okunoye (2008); Jongbloed et al. (2008); Caballero et al. (2009); Matlay (2009); Akonkwa (2009); Benneworth & Jongbloed (2010)
Employees – other HEI members of staff	*12*	Licata & Frankwick (1996); Burrows (1999); Baldwin (2002); Simmons et al. (2005); Watson (2007); Okunoye (2008); Jongbloed et al. (2008); Caballero et al. (2009); Akonkwa (2009); Chapleo & Simms (2010); Benneworth & Jongbloed (2010); Tetřevová & Sabolová (2010)
Parents - families	*12*	Weaver (1976); Smith & Cavusgil (1984); Robinson & Long (1987); Owlia & Aspinwall (1996); Rowley (1997); Franz (1998); Reavil (1998); Kipley & Lewis (2008); Pavičić et al. (2009); Matlay (2009); Akonkwa (2009); Chapleo & Simms (2010)
Communities - local communities	*11*	Robinson & Long (1987); Rowley (1997); Reavil (1998); Burrows (1999); Watson (2007); Jongbloed et al. (2008); Pavičić et al. (2009); Caballero et al. (2009); Matlay (2009); Akonkwa (2009); Chapleo & Simms (2010); Benneworth & Jongbloed (2010)
Society – general public	*12*	Weaver (1976); Robinson & Long (1987); Licata & Frankwick (1996); Rowley (1997); Franz (1998); Mcfarlane & Lomas (1999); Russo et al. (2007); Bjørkquist (2008); Akonkwa (2009); Chapleo & Simms (2010); Tetřevová & Sabolová (2010)
Graduates –alumni– former students	*7*	Licata & Frankwick (1996); Reavil (1998); Kipley & Lewis (2008); Caballero et al. (2009); Matlay (2009); Akonkwa (2009); Tetřevová & Sabolova (2010)
Competitors	*6*	Burrows (1999); Jongbloed et al. (2008); Pavičić et al. (2009); Akonkwa (2009); Tetřevová & Sabolová (2010); Benneworth & Jongbloed (2010)
Donors - sponsors	*5*	Burrows (1999); Jongbloed et al. (2008); Kipley & Lewis (2008); Tetřevová & Sabolová (2010); Benneworth & Jongbloed (2010)

Stakeholder group	Score	Studies
Suppliers	*5*	Burrows (1999); Jongbloed et al. (2008);Akonkwa (2009); Tetřevová & Sabolova (2010); Benneworth & Jongbloed (2010)
Government regulators	*4*	Burrows (1999); Jongbloed et al. (2008); Chapleo & Simms (2010); Benneworth & Jongbloed (2010)
Grant agencies	*4*	Smith & Cavusgil (1984); Robinson & Long (1987); Akonkwa (2009); Chapleo & Simms (2010); Tetřevová & Sabolová (2010)
Alliances	*4*	Burrows (1999); Jongbloed et al. (2008); Chapleo & Simms (2010); Benneworth & Jongbloed (2010)
Non-government regulators	*3*	Burrows (1999); Jongbloed et al. (2008); Benneworth & Jongbloed (2010)
Media	*3*	Caballero et al. (2009); Akonkwa (2009); Chapleo & Simms (2010)
Public authorities	*3*	Rowley (1997); Chapleo & Simms (2010); Tetřevová & Sabolová (2010); Benneworth & Jongbloed (2010)
Professional associations	*1*	Chapleo & Simms (2010)
Trade unions	*1*	Caballero et al. (2009)

Source: Self-elaborated

Having identified the most important groups, we followed Chapleo and Simms's (2010) results to elaborate the stakeholder map of Spanish university stakeholders. We employed the groupings identified in their research because it would be useful to simplify the complex stakeholder university environment and to introduce it easily into the SO conceptualisation.

In order to identify the subgroups that comprise each major group, a quest was carried out on the web pages of the universities, the Ministry of Science and Education, and major university associations (Table 3.4 shows the Spanish university stakeholder map; for more detail, see Annex I).

Table 3.4 Spanish university stakeholder map

Spanish university stakeholders	Categories
Students	• Direct students funders • Prospective students • Current students • Alumni • University's entities students • Students associations & organisations • Students networks
Academic & research & knowledge transfer	• Academic &non-academic staff • Patrons (individuals / organisations) • Social networks • University research structures • Public research bodies • Foundations (universities /Spanish system) • Scientific &technological parks • European technology platforms • Technology centres (CT)/support centres for technological innovation (CAIT) • European centres of business and innovation • Clusters and lobbies (local /national /international) • Alliances • Private sector
University based	• Senior managers • Employees • Governing bodies • Advisory bodies • Working groups • Trade unions
International & European	• Governing entities • Government regulators • Non-government regulators • International &European clients • Financial intermediators • International &European media
National	• Governing entities • Government regulators • Non-government regulators • National suppliers • National competitors • National clients • Financial intermediators • National media
Local	• Governing autonomies • Government regulators • Community • Local suppliers • Local competitors • Local clients • Financial intermediators • Local media

Source: Self-elaborated

3.4 Universities and performance: The return to society

For many years, universities have been regarded as operating in isolation from their socioeconomic and political environment (Bjørkquist, 2008). Nowadays, however, universities are the recipients of public funding and must account for their activities and achievements to the government and wider society, linking their production of goods and services to a social mission (Benneworth & Jongbloed, 2010). Thus, according to Jongbloed et al. (2008), as the direct role of the state is reduced and both the autonomy of the individual universities and the role of the market increase, the university becomes more and more integrated into society, producing a diversity of university stakeholders and missions. As Bjørkquist (2008) highlights, there is now a demand for universities to justify their relevance to society.

Accordingly, today, HE is not only expected to deliver excellent education and research, it also has to deliver those outputs in ways, volumes, and forms that are relevant to the productive process and to shaping the knowledge society (Frasquet et al., 2012; Jongbloed et al., 2008). Thus, universities' third mission objective encompasses a wide array of activities, including the generation, use, application, and exploitation of knowledge (Berbegal-Mirabent et al., 2013).

As an example, we have Wright and Wilton's (2012) statement according to which universities have a critical role to play in creating a sustainable future, as they educate many of the professionals who lead, manage, and teach in the society. Besides, Russo et al. (2007) claim that HEIs and research centres have appreciable local impacts: direct, as employment and revenue generators, and indirect, as developers of knowledge and human resources.

Furthermore, Berbegal-Mirabent et al. (2013) explain that research outcomes (publications) emerge from a competitive environment and many international rankings consider research as the most influential indicator; therefore, universities desire a good positioning in these rankings to signal their capacity to conduct cutting-edge research.

Likewise, de Filippo et al. (2012) affirm that the worldwide popularity of university rankings has triggered a debate about the quality and performance of higher education systems and has had a considerable impact on global society in light of the internationalisation of HE.

Hence, as Jongbloed et al. (2008) warned, the potential downside of the trend posed above is that universities may become fragmented and that the civic responsibility they have towards society may come under threat, so steering universities out of this dilemma and preventing them from being overburdened by stakeholders' claims require careful management.

In this regard, a number of studies provide reasonable justification to define the university performance. Benneworth and Jongbloed (2010) state that, the *social dividend* therefore comes from the delivery of improved public goods to stakeholders. Likewise, Pavičić et al. (2009) highlight the fact that the performance of HEIs is, therefore, socially constructed by different stakeholders, perceiving the social role of HE in varying (or even competing) ways. For example, Lynch and Baines (2004) show that to develop international students it is necessary to focus on resources such as architecture, reputation, and innovative capability, whereas to develop research commercialisation income it is necessary to emphasise the knowledge-based advantages, architecture, and core competences.

Regarding the context of Spanish universities, Rebolloso et al. (2008) claim that a university's evaluation system will be the basic tool for orienting, controlling and, ensuring the success of the desired change. However, they assert that the evaluations do not occupy the place that corresponds to them within a management system. Likewise, Palomares-Montero and García-Aracil (2011) affirm that the evaluation process will be complex because the perspective adopted depends on the aims of the assessment, there being no consensus about which are the most appropriate. Hence, and according to

Mora and Vidal (2000), Spanish universities have not stimulated universities to develop greater responsiveness to social needs.

As Voola and O'Cass (2010) point out, understanding the relationships between SO and competitive strategies is crucial to understanding how SO contributes to university performance. Additionally, in agreement with Narver et al. (2004), they highlight that dominant conceptualisations of societal –market– orientation emphasise only the expressed needs and do not include the proactive nature of stakeholder orientation that influences the latent needs, paying insufficient attention to or ignoring the new and/or potential society needs.

To conclude, Mainardes et al. (2014) posit that society hopes that university institutions will achieve more with less and, simultaneously, prove their continuous improvement. Thus, in line with Voola and O'Cass (2010), understanding the stakeholder orientations' –responsive and proactive– relationships is crucial to understanding how they contribute to university performance. Hence, according to Grau (2012):

> *"A university perceived as an essential public service has a great social consideration for its educational mission, but it is a great unknown ... Whose university? What interests of which society should answer?"* (Grau, 2012, AQU Catalunya)

4 Conceptual model and hypotheses

4.1 Objectives: Identification and definition of variables

As previously mentioned in Chapter 2, all the current literature that we found related to the university context are studies focusing on the MO concept and/or using its terminology. Besides this fact, following Ferrell et al. (2010), Greenley et al. (2005), and Laczniak and Murphy (2012), we propose that is better to apply the *stakeholder orientation* construct as the implementation of the marketing concept than the *market orientation* construct for two main reasons: first, because universities can potentially have a much larger group of stakeholders; and second, in the arena of NPOs, the terminology *stakeholder* is a better match than the term *market*.

Referring to the above justification, we assert, following Sargeant et al. (2002), that some of the terminology used in marketing in the for-profit sector is not unequivocally transferable to the non-profit arena, for many reasons: specifically, the term MO implies an orientation towards markets, and the notion "market" implies that some form of exchange will take place between the supplier and the recipient of goods and services. Accordingly, some statements made by several authors warn about the danger of commercialisation at universities as well as placing universities on the market.

In this sense, Bok's (2003) sensible book in relation to the commercialisation of American universities notes that commercialisation has even seeped into the core educational mission and the trend of marketing various aspects of HE is becoming

prevalent. Accordingly, Buchbinder (1993) had already previously mentioned that in North American universities, the market determines the direction of research, not the academic enterprise.

In the context of European universities, Häyrinen-Alestola and Peltola (2006) point out that governments –since the late 1980s– have increasingly replaced the idea of society with the idea of the market and evaluated academic activities on the basis of their efficiency and marketability. Therefore, universities have elaborated new aggressive strategies to strengthen their scientific basis and to distance themselves from the demands for new managerialism. Likewise, Buchbinder (1993) affirms that in the context of globalisation of capital, universities are propelled towards a market orientation. Consequently, according to his opinion, from the 1980s until today, the slogan and mission for public sector activity seem to have been to achieve more with less, orienting universities towards the marketplace. Furthermore, he suggests that along with the notion of market comes the notion of private since the objectives of HE, which are expressed as the production and transmission of knowledge as a social good, are replaced by an emphasis on the production of knowledge as a market good.

To conclude, the aforementioned arguments provide reasonable justification for suggesting that the implementation of the marketing concept to public universities should be termed *societal* orientation (following Duque-Zuluaga & Schneider, 2008; Kang & James, 2007; Liao et al., 2001; Modi and Mishra, 2010; Pavičić et al., 2009; Sargeant et al., 2002) or *stakeholder* orientation (following Ferrell et al., 2010; Greenley et al., 2005; Laczniak & Murphy, 2012). Hence, in accordance with this argument and the lack of previous literature that uses this terminology, and considering the overlapping between the three concepts, we propose to employ market orientation and societal orientation as a proxy for stakeholder orientation to support our theoretical arguments.

Finally, in this chapter, we attempt to identify and define the antecedents, the stakeholders' orientation constructs, and the performance theoretical model's constructs. Through the literature review, we specify the content of the constructs' domains. Hence, we propose to study the relationship between both the antecedents and the consequences of SO for Spanish public universities through developing a conceptual framework that relates to them and, by extending the measurement, both the RSO and the PSO.

4.2 Stakeholder orientation as a dynamic capability

Since Narver and Slater (1990) define market orientation as a second-order unidimensional construct comprising three equally important reflective components −customer orientation, competitor orientation, and inter-functional coordination− the concept has been evolving and adapting to new environments and contexts until now.

In the recent literature, we could find MO definitions, such as that by Ma and Todorovic (2011) describing MO as a culture that helps to nurture dynamic capability, which enables firms to react to the changing external environment. Maignan et al. (2011), meanwhile, drawing on MO and stakeholder theory, operationalise SO (as a more expansive perspective that is found in current MO research) and test empirically whether it improves managerial practices and organisational performances.

Moving towards the university context, we found empirical studies that test the MO concept in various countries, in higher education typologies (i.e. public and private), and among different university collectives. As Hammond et al. (2006) affirm, MO is a philosophy applicable to universities because they seek to provide superior value to their stakeholders, and to accomplish organisational goals[30].

In the current literature, several studies support the application of MO to the university context by examining the different issues related to the concept and/or the relationships

[30] Survival, reputation, improving faculty, developing enrolment and endowment.

between their antecedents and their consequences. In Table 4.1, we present all the studies that we found about MO and universities, identifying the scales employed and whether or not the study also includes the interrelationships between MO's antecedents and its consequences.

Table 4.1 Empirical studies on university market orientation

Study	Context	MO-Scale used	Antecedents	Consequences
Caruana et al. (1998)	Australia's business schools (deans and head departments)	MO - MARKOR	None	Overall performance, acquisition of resources
Wasmer & Bruner (2000)	Colleges and universities USA (director)	None	Institutional funding, size and organisation values	None
Hammond, Webster, Harmon & Rayburn (2004)	Schools of business USA (deans)	None	Marketing planning activities and faculty awards	Overall performance
Hammond et al. (2006); Webster et al. (2006)	Schools of business USA (deans)	MO - MKOR	Top management emphasis	Overall performance
Flavián & Lozano (2006)	Spanish university's departments	MO - MARKOR	Emphasis, cohesion, centralisation and incentive systems	None
Voon (2008)	Malaysian HEIs	SERVMO – MKOR	None	None
Hemsley-Brown & Oplatka (2010)	England and Israel universities (faculty)	MO - MKOR	None (analysis intra-groups)	None (analysis intra-group)
Rivera-Camino & Ayala (2010)	Spanish universities (unit analysis faculty who attended marketing congresses)	MO - MKOR and MARKOR	Obstacles	None
Ma & Todorovic (2011)	USA universities (departments)	MO – MKOR	None	One construct with multifaceted aspects
Casidy (2014)	Undegraduate students - Australia	PMO – SERVMO (MKOR)	None	Post-enrolment communication behaviour, satisfaction, loyalty

Source: Self-elaborated

From the above Table 4.1, we identify the following gaps in the university MO literature. First, past research employs Kohli and Jaworski's (1990) scales and Narver and Slater's (1990) scales, the latter being slightly more commonly used. Second, previous studies apply derived versions to measure university MO, but we did not find any study constructing a university SO measure. Third, all previous empirical studies, except two, focus only on the link between university MO and performance or the link between antecedents and MO. Fourth, no previous study identifies the differences between typologies of antecedents. Finally, we observed in recent studies a trend towards considering universities' performance as a subjective multidimensional measure.

Although all empirical research is conducted with the MO concept, as we reflected in the previous chapters, many authors advocate a reconceptualisation of the MO concept in the university context with the aim of raising key questions like who the customers are, which requires the broadening of the MO concept in the HE sector.

As we explained in the previous chapters, and following Narver et al. (2004), the concept of MO implies both the RMO and the PMO, which involves organisational processes for learning about the latent needs of current or potential customers. Consequently, there are two ways in which university stakeholders can show their needs and their solutions: expressed and latent. We define expressed needs as those expressed solutions of university stakeholders of which they are aware and can therefore express. For example, an expressed need is "study", for which an expressed solution may be "bachelor". We define latent needs as solutions of which the university stakeholder is unaware because they are not in their consciousness. For example, the need for the benefits of a new bachelor programme is a latent need.

Hence, in accordance with the stated arguments, we hold that nowadays, in the Spanish public university context, merely satisfying university stakeholder needs may be insufficient to attract and retain stakeholders because they are known by all the public

institutions. To avoid this, a university must move beyond its stakeholders' expressed needs to their latent needs.

As a result of our literature review, we identified references to these two types of strategic orientation behaviour, responsive and proactive, in both the non-profit and the university context. For example, Clark (1998) stresses the fact that to be carried out successfully an entrepreneurial university's strategy requires relationships to impact on all the hierarchical levels and not simply the senior management level. In this case, the market is seen by the university as a driving force from which to gather information regarding opportunities and potential multi-beneficial relationships. The need to engage actively with the marketplace refers in our thesis to PSO strategies.

Jongbloed et al. (2008) underline that nowadays HE is expected not only to deliver excellent education and research, but also to deliver those outputs in ways, volumes, and forms that are relevant to the productive process and to shaping the knowledge society. Thus, they conclude that universities are forced to be in constant dialogue with their stakeholders in society, which means showing evidence of an entrepreneurial dynamic institution.

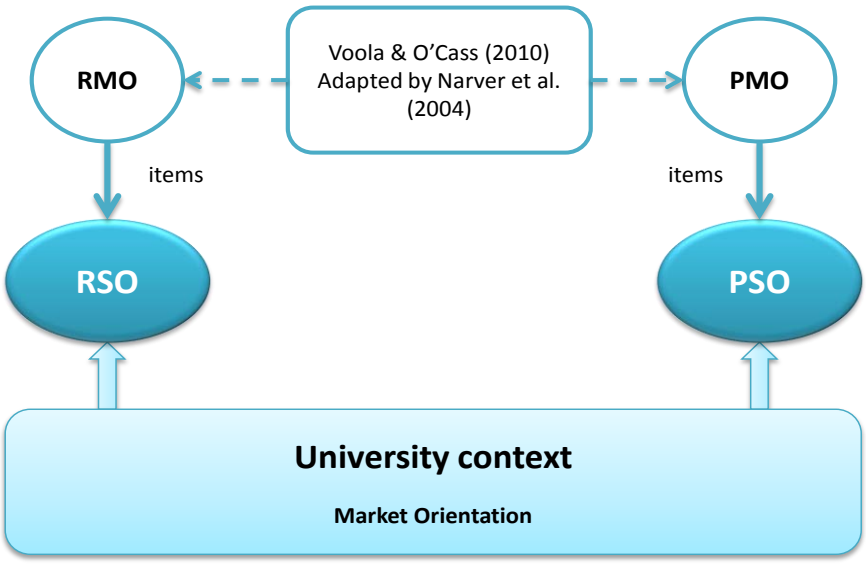
Towards the stakeholder management framework, Tetřevová and Sabolová (2010) make some recommendations on the selection and application of the strategy for negotiation with individual university stakeholders. Taking into consideration that a proactive strategy involves anticipating and actively addressing specific stakeholders' issues, they conclude by recommending that universities should adopt more proactive strategies for almost all their stakeholders[31] .

Summarising our conclusions from the analysis of the literature review, we can highlight the following contributions:

[31] Current and prospective students, employees, the Ministry of Education, grant agencies, business owners, and investors.

- From the review of the literature about the university context, we suggest that the term stakeholder orientation fits Spanish public universities better than the traditional market orientation.
- Through the review of MO university studies, we conclude that it is necessary to readapt the traditional concept by highlighting that the notions of proactive and responsive behaviours exist, although neither has been considered explicitly yet.
- Accordingly, we propose to reframe the concept in relation to the responsive stakeholder orientation (RSO) and proactive stakeholder orientation (PSO) constructs of public universities by establishing equivalences between the available components of MO in the university context and the available components of the Responsive Market Orientation (RMO) and Praoctiva Marketing Orinetation (PMO) for NPOs. We extend the concept by also establishing equivalences between the previous components by Narver et al. (2004) and Voola and O'Cass (2010), the RMO and PMO proposals (see Figure 4.1).

Figure 4.1 RSO and PSO conceptualisation process



Source: Self-elaborated

4.2.1 Responsive stakeholder orientation

University managers are assumed to understand the target beneficiaries of public universities' collection of information about their relevant stakeholders to adapt strategic decisions to their particular needs, interests, and points of view. This entails NPOs designing services suited to their beneficiaries' requirements, which are grounded in the socio-economic settings specific to their context (Modi & Mishra, 2010).

From the literature review, we highlight that some researchers employ the term *stakeholder orientation* instead of *beneficiary orientation* and define it as the extent to which the organisation is focused on the needs of its multiple stakeholders (Liao et al., 2001; Sargeant et al., 2002). Others, such as Álvarez et al. (2002), Akonkwa (2009), Duque-Zuluaga and Schneider (2008), Ma and Todorovic (2011), Modi and Mishra (2010), and Voon (2008), treat the term as *beneficiary or recipient orientation*, referring to the identification of potential service beneficiaries, to understand their situation and needs, and to the development of programmes and activities that are valuable to them.

According to our research objective, we suggest that RSO refers to the identification of potential service beneficiaries, to the understanding of their situation and needs, and to the development of programmes and activities that are valuable to them. Hence, following Modi and Mishra (2010), we **define** *responsive stakeholder orientation* as an organisational focus based on understanding the needs of stakeholders, designing services to meet those needs, and regularly monitoring their satisfaction.

Since the above definition reflects a broader context, it is necessary to describe and delimit the stakeholder terminology to the university context, because, as we reflected in previous chapters, the university beneficiary concept can be regarded in many different ways depending on the purpose of research arising. Consequently, in agreement with Álvarez et al. (2002), the beneficiaries' of NPOs, given their multiplicity, must be

defined from a broad perspective including all of the agents who are more or less close to them.

In accordance with Clarkson's (1995) classification, our construct definition, Spanish public university stakeholders, and university stakeholders' classifications (Alves et al., 2010; Chapleo & Simms, 2010; Tetřevová & Sabolová, 2010), we propose as *primary* university stakeholders in universities' activities and services: the academic community, current and prospective students, employers, and schools and/or other educational institutions.

4.2.2 Proactive stakeholder orientation

Narver et al. (2004) explain that the measure of MO to date has consisted entirely of behaviours related to satisfying customers' expressed needs rather than satisfying their latent needs as well. Hence, according to Narver et al. (2004), latent needs are universal, exist in the stakeholders, and can be discovered by observing their behaviours to enable inferences to be made regarding their problems and possible solutions and also to highlight that it is important to denote that a proactive society orientation does not consist of attempting to satisfy the expressed needs of the society in an energised way.

One of the first references to distinguish between the two behaviours, responsive and proactive, is provided by Siu and Wilson (1998), who affirm that a greater emphasis on customer orientation increases the introduction of new programmes/initiatives, because customer orientation advocates a continuous, proactive approach to meeting customers' exigencies. A focus on total customer satisfaction therefore fosters continuous innovation for the benefit of existing and future customers. In a later work, Grinstein (2008) highlights that few studies make the distinction between responsive and proactive orientation because the MO concept has traditionally been treated as responsive. Laplume et al. (2008) observe that managers must take care to be environmentally proactive because they will identify more stakeholders.

To date, we are not aware of any study, such as Narver et al. (2004) and Voola and O'Cass (2010), applied to the university context. However, in the literature review, we noticed several references to the importance of proactive behaviour among both university and non-profit managers. Thus, Tetřevová and Sabolová (2010) prove that public universities apply a proactive strategy concerning the Ministry of Education.

Furthermore, Hemsley-Brown and Oplatka (2006, 2010) posit that through a proactive approach it would be possible for public universities to be more innovative and implement improvements for their beneficiary stakeholders based on their anticipated needs[32]. On the same line, Voon (2008) affirms that both the expressed and the latent needs and wants of customers must be well understood and fulfilled to achieve the desired level of university service quality satisfaction. Finally, Mainardes et al. (2014) highlight the need for public universities to contemplate PSO behaviour towards the ability to attract financial resources as an alternative to the decreasing levels of public funding.

Building on the proactive market orientation by Voola and O'Cass (2010) and through a critical analysis of scale items found in the previous literature in both the university and the non-profit context, we notice that some items existing in the literature reflect proactive rather than responsive behaviour (see some examples in Table 4.2).

Table 4.2 Examples of proactive behaviours rather than responsive ones

Paper	Context	Illustrations
Macedo & Pinho (2004)	Non-profit	We periodically review our new services' development efforts to ensure that they are in line with what the donors/users want. When we find that donors/users would like us to modify a product or a service, the departments involved make concerted efforts to do so.

[32] According to these authors, those faculties that are student-oriented would collect information about the environment, adapt their teaching methods to accommodate students' particular needs (a responsive behaviour), and be more innovative in trying to implement improvements for future students based on their anticipated needs (a proactive behaviour).

Paper	Context	Illustrations
Hammond et al. (2006)	Higher education	Target opportunities for competitive advantage.
Voon (2008)	Higher education	My university/college knows the changes in our preferences. The employees of my university/college communicate and "talk" about how to serve us better.
Duque-Zuluaga & Schneider (2008)	Non-profit	We monitor our users very often to find out what programs or activities they will need in the future. We are looking strategically for convenient partnerships in order to obtain resources or lobbying.
Rivera-Camino & Ayala (2009)	Higher education	We act to influence in stakeholders. We analyse changes in donors and students needs.
Hemsley-Brown & Oplatka (2010)	Higher education	Students are given information that helps them to understand what to expect from this university. We encourage students to offer constructive positive comments.
Modi & Mishra (2010)	Non-profit	All the departments are actively involved in the process of planning projects/services. Our organisation actively searches for information on potential fundraising opportunities.
Ma & Todorovic (2011)	Higher education	Our competitive advantage is based on our understanding of students needs. We respond rapidly to actions of competitive universities.

Source: Self-elaborated

On the basis of all the references highlighted in the literature and Narver et al.'s (2004) adapted contribution, we propose in our theoretical model a PSO construct. Adapted from Narver et al.'s (2004) proactive market orientation definition,[33] we **define** *proactive stakeholder orientation* as a university focus on understanding stakeholders' latent needs and latent solutions[34] associated with their activities and/or services (academic, research, and knowledge transfer), designing services that allow those needs to be identified, and, finally, regularly trying to design mechanisms to discover them. Hence, following Narver et al. (2004), and adjusting their contribution, we reveal that latent needs are universal, exist in every stakeholder, and can be discovered by carefully

[33] "Expressed needs and expressed solutions as the needs and solutions of a customer of which the customer is aware and, therefore, can express" and "latent needs and latent solutions as the needs and solutions of a customer of which the customer is unaware, they are not in the consciousness of the customer" (Narver et al., 2004, p. 336).

[34] Latent needs are additional expectations that stakeholders are unaware of, meaning that they are not in the consciousness of the university stakeholders.

observing university stakeholders' problems and their possible solutions, which means *leading* stakeholders in their satisfaction.

4.3 Antecedents of stakeholder orientation

As we highlighted in previous chapters, the institutional factors' influences should be regarded in a marketing context (Handelman et al., 2010). Oliver (1991, 1997) reveals the need to consider the institutional factors influencing the performance leading to the need to manage the social context in which resources and capacities are generated in an effective way. Thus, one challenge of this thesis is to identify, contextualise, and define the SO's antecedents in Spanish public universities.

In their seminal work, Kohli and Jaworski (1990) define the MO's antecedents as those organisational factors that enhance or impede the implementation of the business philosophy represented by the marketing concept. By adapting the definition of Kohli and Jaworski (1990) to our study context, and in accordance with Akonkwa (2009), the operationalisation of the SO construct will provide insights into the factors influencing their level, which means the SO antecedents.

In the university literature review, we found some references to the existence of antecedents that exert influence on universities' strategic management. As Clark (1986) explains, there is considerable tension between the different university levels. A superstructure (the wider system and its inter-institutional links) stresses the hierarchy and formal links through imposing its priorities on the system in a political and bureaucratic way. At the same time, in the middle structure (the university itself), the governing boards are placed in a mediating role, acting between the demands and pressures from the superstructure above and those from the understructure (the operating units and departments) below, which tend to pursue autonomy, fragmentation, and differentiation and have primary allegiance to specialised fields of study, rather than the institution.

On the same line and in the Spanish higher education context, Mora (2001) asserts that under the new legal structure by University Reform Act (*Ley de Reforma de Universidades*, LRU) in Spanish public universities, power is shared by: the central government (which decides general and legal matters), regional governments (planning HE in the region), universities (which make decisions on internal organisation), and academics, staff, and students (who make decisions on the smallest details of academic life). In fact, the decisions taken by universities are made by the staff through their governing boards. In a similar manner, Perotti (2007) identifies as variables of change in the Spanish higher education system, among others, the behaviour of both internal actors (academics and managers) and external non-economic actors (the political class).

Specifically, Rivera-Camino and Ayala (2010), underlining the presence of individual and organisational variables that can impede the implementation of university strategies and projects, mention that they cause effects as obstacles instead of antecedents. In the same way, Llinàs-Audet et al. (2011) discuss the barriers related to difficulties in aligning compromises and avoiding internal conflicts among university structures, while Jongbloed et al. (2008) talk about the existence of university barriers that prevent the wider type of community engagement. In turn, Rodríguez-Ponze and Pedraja-Rejas (2009) argue that knowing the variables that influence university strategic management is fundamental to becoming a successful institution.

In addition, in the previous literature, a number of researchers examine the antecedents to the MO and some also the relationship between those and the MO in the university context (see Table 4.3).

Table 4.3 Studies on the antecedents of MO on universities'

Study	Typology	Context	MO-Scale	Antecedents
Buchbinder (1993)	Theoretical	Universities	None	Influence of the political economy Internal structures and dynamics of governance
Harris (1997)	Theoretical	Universities	None	Cultural components
Wasmer & Bruner (2000)	Empirical	Colleges and universities USA (director)	None	Institutional funding, institutional size, organisation values
Hammond et al. (2004)	Empirical	Schools of Business USA (deans)	None	Marketing planning activities Faculty awards
Hammond et al. (2006); Webster et al. (2006)	Empirical	Schools of Business USA (deans)	MO - MKOR made up 3 components	Top management emphasis
Flavián & Lozano (2006)	Empirical	Spanish university's departments	MO - MARKOR	Emphasis, cohesion, centralisation, incentive systems
Jongbloed et al. (2008)	Theoretical (research agenda)	Universities	None	Barriers to the wider of community engagement
Akonkwa (2009)	Theoretical (research agenda)	Universities	None	Antecedents
Rodríguez-Ponze & Pedraja-Rejas (2009)	Empirical	Spanish universities and Chile universities	None	Variables that influence on strategic management
Rivera-Camino & Ayala (2010)	Empirical	Spanish universities (unit analysis faculty who attended marketing congresses)	MO - MKOR and MARKOR (made up 6 components)	Obstacles
Llinàs-Audet et al. (2011)	Qualitative study	Spanish universities (review of the strategic plans)	None	Barriers related to difficulties to alienation compromises and avoid internal conflicts Leadership university management University structures
Pietilä (2014)	Qualitative study	Finnish research universities (leaders at different organisational levels)	None	Mimetic pressures of academic leaders Normative pressures of academic leaders

Source: Self-elaborated

At the same time, we found in the non-profit literature research claiming the importance of investigating the antecedents of the MO. For example, Modi and Mishra (2010) indicate the study of the effect of different kinds of external environments on the non-profit MO as an important research direction. On the same line, Duque-Zuluaga and Schneider (2008) conclude by highlighting the need to design measures for specific environments and identifying control and mediating variables for specific sub-sectors.

In the literature, we observed the existence of various ways to classify typologies of MO antecedents. For our research, we chose Kohli and Jaworski's (1990) classification. They suggest three hierarchically ordered antecedent categories: individual (senior management factors), intergroup (interdepartmental dynamics), and organisation wide (organisational systems):

- Concerning the individual category, Day (1994) argues that a lack of support from the top management inhibits MO implementation.
- Regarding interdepartmental dynamics, Harris and Piercy (1999) and Harris and Watkins (1998) note that the lack of a common model shared by the organisation and the absence of communication between organisational levels operate as MO antecedents.
- Concerning the organisational systems category, DiMaggio and Powell (1983) as well as Cheng and Yu (2008) highlight three environmental sources of pressure on an organisation to implement strategies: coercive, mimetic, and normative.

Another classification to be borne in mind in our thesis is the origin of the antecedents. Thus, and in accordance with Bjørkquist (2008), Ferrer-Balas et al. (2009), Ma and Todorovic (2011), Matlay (2009), and Van Raaij and Stoelhorst (2008), we stress the importance of accounting for the distinction between external antecedents and internal antecedents. Regarding the achievement of university autonomy, Buchbinder (1993)

argues that it is tied to the influence of the political economy, as an external force, and the internal structures and dynamics of governance within the university, as an internal force. Ferrer-Balas et al. (2009) also identify internal barriers and external barriers to implementing sustainable strategies in universities.

The **external antecedents** are those environmental factors that stimulate a firm's adoption of the MO (Van Raaij & Stoelhorst, 2008). In line with Bjørkquist (2008), these antecedents are external authoritarian governance mechanisms that rely on making laws and regulations, which actors and agents are expected to respond to and obey because they are designed as directives that regulate the institution's activities. In their meta-analysis, Van Raaij and Stoelhorst (2008) identify market dynamism and competitive intensity as external factors. Moreover, Ferrer-Balas et al. (2009) identify pressure from peer institutions, corporations, or government bodies willing to funding activities oriented towards change as external drivers.

The **internal antecedents** are those organisational factors that enable the adoption of the MO concept (Van Raaij & Stoelhorst, 2008). In this sense, Bjørkquist (2008) describes internal organisation as one that enables direct action and that the individual institutions can independently decide how to organise themselves and the forms that the organisation may take. Ferrer-Balas et al. (2009) contemplate as internal barriers those resulting from the culture and structure of the university –academic freedom, the incentive structure, and a lack of desire for change– whilst as internal positive drivers for a university they consider transformation identify leadership, sustainability champions, interdisciplinary research groups, size, and a coordination unit for the sustainability transformation.

Given the variety of antecedent proposals, we decided to follow Van Raaij and Stoelhorst's (2008) meta-analysis proposals and to establish in the present thesis the difference between external and internal factors. Furthermore, we also decided to follow these authors by contemplating as internal factors, on the one hand, two antecedents

empirically tested by their meta-analysis –top management emphasis and university structure– and, on the other hand, two that are not available yet in the literature – the culture and complexity of the university.

To summarise, in accordance with the previous literature explained in Chapter 3 of this thesis, we will proceed in the following section to present the **external institutional factors** identified in the Spanish public university context. The **internal organisational factors** will be described further in later sections.

4.3.1 External institutional factors

The macro-environment or national context (economic and culture) affects not only the MO antecedents, but also the way in which these antecedents influence the MO and its consequences (Cervera et al., 2001).

In the following sections, we will proceed to explain the external institutional factors identified in the Spanish public university context, which are coercive pressures, mimetic pressures, and normative pressures.

Coercive pressures

Bennett and Kottasz (2011), following Cheng and Yu (2008) and Di Maggio and Powell (1983), define coercive pressures as those arising from forces that are exerted formally or informally by entities upon which an institution depends for its survival or welfare, for example government agencies, governing boards of a university, the European Union, university accreditation bodies, and so on, the state being the most important source of coercive influence.

Mainardes et al. (2012a), in accordance with Mitchell et al.'s (1997) *stakeholder salience model*[35], propose three university stakeholder groups. To identify the coercive

[35] As mentioned in Chapter 2, this theory establishes a dynamic stakeholder typology classifying stakeholders based upon the possession or attributed possession of one, two, or all three attributes: *power* (the stakeholder's power to

factors in Spanish public universities, we rely on the classification model for organisational stakeholders produced by these authors, which identifies the *regulatory stakeholders* and the *controller stakeholders* as those groups of stakeholders that hold influence over the university and the *partner stakeholders* that influence and are influenced by the university. These authors define *regulatory stakeholders* as those that hold influence over the organisation while the latter holds no (or very little) influence over them; they define *controller stakeholders* as ones when they and the organisation mutually influence each other even while these stakeholders hold more influence over the organisation than the inverse; and, finally, they define *partner stakeholders* as ones when these and the organisation mutually influence each other but neither party predominates, producing an equilibrium. In Table 4.4, we identify these items and the main research in the public university context.

Mainardes et al. (2012a) classify as *regulatory stakeholders* the national government, ministries, and accreditation agencies[36]. In the *controller stakeholders* group, we can find senior university managers, scientific communities and their publications, employees, professional orders, and private financiers[37]. Finally, we can find in *partner stakeholders* group the research and development partner companies, other universities, research and development actors, students, and teaching and/or research staff, among others.

Following our literature review, we assert that regulatory and controller stakeholders are the same, reflecting Mainardes et al. (2012a), and according to the coercive definition, the coercive pressure is reflected in these items. However, in the case of partner stakeholders, they do not accomplish the coercive characteristic and therefore they

influence the firm), *legitimacy* (the legitimacy of the stakeholder's relationships with the firm), and *urgency* (the urgency of the stakeholder's claim on the firm) (Mitchell, Agle & Wood, 1997).

[36] This argument is in line with Chapleo and Simms's (2010) conclusions reflecting that government policies are generally considered to have a great influence on stakeholder management and a direct impact on the strategic direction of the organisation, which then influences other operational areas.

[37] Larsen (2001) notes the influence of an institution's board as important actor in the decision-making process and formally the most central elected strategic body at the institutional level.

cannot be considered. We agree with all of the components considered by Mainardes et al. (2012a) except for teaching and/or research staff, because in the Spanish public university context, this group exerts an important influence on universities' strategic management (Alves et al., 2010; Bjørkquist, 2008; Buchbinder, 1993; Buysse & Verbeke, 2003; Jongbloed et al., 2008; Mora, 2001).

In this sense, Alves et al. (2010) highlight that teaching and research staff should also be considered an important or definitive stakeholder, given that they represent the core of scientific production without which the HEI is not able to operate appropriately. Buysse and Verbeke (2003) measure the importance attached to faculty in their pressures on decisions related to stakeholder orientation management. According to Bjørkquist (2008), the democratisation process in the 1970s illustrated changing power relations given that more employees and students gained access to decision-making bodies. Finally, Jongbloed et al. (2008) point out that academics play an important role in running the system because they perform the core tasks in universities and suggest concentrating the strategic discussions not only on the managers and the leadership of academia.

In Spanish public universities, we can find that the University Reform Act (*Ley de Reforma de Universidades*, LRU) transferred decision making in universities to governing bodies. Boards with a large number of members make the decisions in each university, faculty, and department and they elect the rector, the deans, and the heads of departments. In the Spanish context, Mora and Vidal (2000) reflect on the exclusive influence of academics in the definition of the role of the HE system and in the implementation of the policies defined mostly by them. Further, they affirm that in this new scheme academics act in many cases as a guild, which is more concerned with how to defend its own interests than with serving the community and its students.

In accordance with the aforementioned arguments and Bennett and Kottasz's (2011) study, *coercive factors* are a formative construct[38] rather than a reflexive construct[39]. The formative nature of coercive items is a limitation for CBSEM methodology; consequently, we propose only consider indicators with a reflective character (see Chapter 6, pp. 46–48) in our theoretical model.

Table 4.4 Summary of the literature on coercive pressures

Types	Main Stakeholders	Main literature
Regulatory stakeholders	European Union, national government, ministries and, accreditation agencies	Alves et al. (2010); Benneworth & Jongbloed (2009; Bjørkquist (2008); Buysse & Verbeke (2003); Chapleo & Simms (2010); Mainardes et al. (2012a) Mora (2001); Perotti (2007); Shoham et al. (2006)
Controller stakeholders	Governing boards, scientific communities and their publications, employees, professional orders and private financiers	Alves et al. (2010); Benneworth & Jongbloed (2009); Bjørkquist (2008); Buysse & Verbeke (2003); Ferrer-Balas et al. (2009); Mainardes et al. (2012a); Larsen (2001)
Partner stakeholders	Teaching and/or research staff	Alves et al. (2010); Benneworth & Jongbloed (2009); Bjørkquist (2008); Buchbinder (1993); Buysse & Verbeke (2003); Ferrer-Balas et al. (2009); Mainardes et al. (2012 a); Mora & Vidal (2000); Mora (2001); Perotti (2007)

Source: Self-elaborated

Mimetic pressures

In response to uncertainty, managers frequently adopt ideas and practices observed among similar organisations (DiMaggio & Powell, 1983). Thus, Bennett and Kottasz (2011) define *mimetic factors* as those involving the perception of a need to copy the successful actions of others. In the university context, the existence of a networking environment in which every university is visible to every other can enhance the mimicry effect (Van der Wende, 2007).

[38] Formative measures indicate that a latent variable is measured using one or several of its causes (indicators), which determine the meaning of that construct (i.e., Edwards & Bagozzi, 2000; Jarvis et al., 2003).

[39] The causality of the reflective construct is directed from the latent construct to the indicators, with the underlying hypothesis that the construct causes changes in the indicators (Edwards & Bagozzi, 2000; Fornell & Bookstein, 1982; Jarvis et al., 2003).

Following Mainardes et al.'s (2012a) classification, in this process, we involve the partner stakeholders' group: in other words, those stakeholders who act jointly with the university (students, other universities and/or other HEIs (public or private), employers, business/trade associations, research and development partner companies, research and development actors).

Llinàs-Audet et al. (2011) highlight that Spanish public universities have similar priorities in their strategies since few differences exist among their strategic plans. These results are also contrasted in previous research by the author[40].

According to the aforementioned arguments and Bennett and Kottasz's (2011) study, *mimetic factors* are a reflexive construct. Thus, we propose to contemplate *mimetic factors* as Spanish public university external antecedents of the RSO and PSO in our theoretical model.

Normative pressures

Bennett and Kottasz (2011) define *normative pressures* as those resulting from managerial behaviour and often the consequence of training and professional experience in the strategic orientations that generate certain values among managers. Managerialism is characterised by a greater influence of external agents, more attention to strategic management and other managerial techniques used in business, greater emphasis on leadership, and less emphasis on collective decision making (Mora, 2001).

This point is alluded to by Van Raaij and Stoelhorst (2008), who, in the context of resource-based theory, argue that the role of the manager is to acquire, combine, and deploy appropriate capabilities. In this sense, such capabilities should logically be deployed to implement the strategy of the firm through its managers. Zhou, Chao, and Huang (2009) describe two aspects of managerial professionalism that contribute to the success of an organisation: professional commitment, which reflects an individual's

[40] Casablancas-Segura (2011).

career orientation, and professional education, which is related to the senior managers' dedication to the continuing development of their professional skills.

For NPOs, Kang and James (2007) propose that managerial skills may play an important role in influencing the adoption and implementation of a MO strategy. In terms of stakeholder orientation, Bennett and Kottasz (2011) affirm that the extent of this approach might depend on their personal experiences of the MO and their motives and capacities concerning orientation strategies.

According to the aforementioned arguments and the studies by Auh and Menguc (2009) and Bennett and Kottasz (2011), *normative factors* are a formative construct. Thus, we we propose only consider indicators with a reflective character in our theoretical model.

4.3.2 Internal organisational factors

In the existent research, Kohli and Jaworski (1990) and later Jaworski and Kohli (1993) develop a series of internal factors that condition the degree of MO of a given organization. Within our thesis, the challenge is to identify those university internal factors that enhance or inhibit the institution's ability to implement the RSO and PSO strategic concepts.

In the following sections, we proceed to explain the internal organisational factors identified in the Spanish public university context, which are: the traditional culture of the university, the complexity of the university, the top management emphasis, and cohesion amongst university structures.

Traditional culture of the university

In accordance with Kohli and Jaworski (1990), an informal organisational characteristic that appears to be particularly relevant as a determinant of MO is the political norm structure. Political behaviour consists of individuals' attempts to promote self-interests and threaten others' interests. The political norm structure is an informal system that

reflects the extent to which the members of an organisation view political behaviour in the organisation as being acceptable (Kohli & Jaworski, 1990). According to Gairín (2006), it stands for a set of values, beliefs, and shared practices among the members of an organisation that, given their own identity, determine the behaviour of the individuals comprising it and the institution.

In the university context, we can find research that describes the organisational culture as a university's MO antecedent, among others (Flavián & Lozano, 2006; Harris & Watkins, 1998; Siu & Wilson, 1998; Wright, 2010). Specifically, Akonkwa (2009) highlights as a research challenge the study of the attitudes of academics and administrative personnel towards change and the way in which the institution suggests facing it because a related topic is resistance to change. Ferrer-Balas (2009) puts forward the freedom of individual faculty members as a barrier to the implementation of university strategies. Meanwhile, Jongbloed et al. (2008) point out that several academics define their identity as characterised by independence of thought and action and do not want to be driven by external demands.

In the Spanish context, Mora (2001) and Mora and Vidal (2000) suggest that culture and tradition play a greater role in forming opinions than the observation of the objective reality. In their view, academics are extremely reluctant to permit any possible interference from anywhere outside the institution. In a recent work, Jorge, Madueño, Cejas, and Peña (2014) denote through their findings that resistant to change is an important barrier to incorporating sustainability practice amongst Spanish universities.

The results obtained in previous research by the author[41] show that in Spanish public universities it is difficult to implement initiatives that collide with the individual interests of particular groups, albeit responding to society interests in general. Thus, we propose to contemplate the *traditional culture of the university* as a Spanish public universities' antecedent of the RSO and PSO in our theoretical model.

[41] Casablancas-Segura (2011).

Complexity of the university

According to the general literature shown in the previous chapters as well as Kohli and Jaworski's (1990) perspective, structural organisation characteristics can influence the MO by three structural variables: formalisation, centralisation, and departmentalisation. In a more recent study, Narver et al. (2004) suggest that the *organisation climate* influences innovate behaviour by reducing organisational members' awareness, involvement, and commitment by limiting the available information and by emphasising the rigid rules, job descriptions, and formal authority that may inhibit creative problem solving and discourage the generation of new ideas.

With the aim of identifying university complexity, we follow Patterson's (2001) contribution, which highlights four factors that explain the complexity of the issue of university goals. First, it refers to the existence of *covert* as well as *overt* organisational goals and the difficulty in their alignment because of the existence of incoordination between intentions and activities[42]. The informal and *covert* goals are likely to be more significant for the university staff than the formal *overt* goals.

The second factor is related to the existence of different kinds of university goals. Basically, we can distinguish *outcome* goals, namely those related to how the university meets the needs of society, and *process* goals, which are related to the internal functioning of the university. The third factor refers to the complexity and multiplicity of university goals because they emerge from different stakeholders who have, on the one hand, opposing views on these university goals and, on the other hand, different goal priorities, and this also happens both within and between groups[43].

Finally, the fourth factor concerns the difficulties of goal valuation and measurement; for example, comprehensiveness versus subject selectiveness; vocational versus general

[42] For example, an *overt* organisational goal would be the ostensible commitment to research staff; however, a *covert* organisational goal is for staff to spend as much time as possible on private consultancy work.

[43] For example, many heads of departments, in the interest of research achievement, will place a higher priority on their own and departmental goals than on the overall organisational goals.

education; pure versus applied research; the value of community service goals; or goal interdependencies. Patterson (2001) concludes that the prioritising process of university goals is highly problematic and hence an inevitably political process.

These results are also contrasted in previous research by the author[44] highlighting that universities must attend to multiple society demands, all of them lawful and valuable, but often conflicting because they compete against each other for the same resources. Thus, we propose to consider *complexity* as a Spanish public university antecedent of the RSO and PSO in our theoretical model.

Top management emphasis

The literature suggests that top management is considered to be a *change agent* and their commitment is seen as an essential factor for developing MO, which means encouraging individuals in the organisation to follow the philosophy (Cervera et al., 2001; Day, 1994; Ferrer-Balas, 2009; Hammond et al., 2006; Kang & James, 2007; Liao et al., 2001; Narver & Slater, 1990; Kohli & Jaworski, 1990; Rebolloso et al., 2008; Oplatka & Hemsley-Brown, 2007; Siu & Wilson, 1998; Voola & O'Cass, 2010; Zhou et al., 2009).

In particular, Kohli and Jaworski (1990) indicate that the role of senior management is the most important factor in enhancing a MO, the commitment of top managers being an essential prerequisite. Thus, the implementation of an MO is strongly linked to personal acceptance of the strategy (Harris & Ogbonna, 2001).

In the context of NPOs, Cervera et al. (2001) suggest that the acceptation of a more receptive philosophy and attitudes towards the stakeholders is essential, not only by the government, but also by the civil servants working for it. Therefore, to measure the top management emphasis, it is necessary to investigate the support of senior managers for stakeholder orientation activities.

[44] Casablancas-Segura (2011).

In the university context, we can find a number of authors who highlight the need to transmit the emphasis of strategic management among the university community as an essential process for the MO implementation (Flavián & Lozano, 2006; Hammond et al., 2006; Llinàs-Audet et al., 2011). Ferrer-Balas et al. (2009) stress that, university leadership may also be a driver of implementation strategies when the leader sees transformation as a way to leave his or her legacy to the organisation. Thus, *top management emphasis* includes the emphasis of the university's managers on the RSO and PSO concepts.

Cohesion amongst university structures

Interdepartmental dynamics are the formal and informal interactions and relationships among an organisation's departments (Jaworski & Kohli, 1993). To achieve an MO in a NPO, it is essential that adequate systems and structures exist to support the work of the organisation. Thus, the organisational structure should be regarded as an antecedent since the facility to communicate between the different structures and the flexibility to respond rapidly to changing patterns of societal needs should aid in developing a SO (Sargeant et al., 2002).

In the university context, it is important to consider the Weick's (1976) approach which educational organizations may be considered as loosely coupled systems[45]. Hence, universities' internal organisation affects the extent to which the individual institutions can independently decide how to organise themselves and which forms that organisation will take (Bjørkquist, 2008). In the university context, Flavián and Lozano (2006) design a scale to define the cohesion and affinity that exist between members of the university departments and Akonkwa (2009) advocates as a research agenda for MO antecedents studying whether MO implementation depends on the system of HE.

[45] By loose coupling, the author intends to convey the image that coupled events are responsive, but that each event also preserves its own identity and some evidence of its physical or logical separateness.

In our thesis, *cohesion* amongst university structures represents the cohesion or affinity of relationships between the diverse existing university structures (faculties, departments, and research institutes), administration areas, and governing bodies.

4.4 Consequences of stakeholder orientation on organizational performance

Jaworski and Kohli (1993) highlight two main concepts as consequences of the MO: on the one hand, *business performance*, and on the other hand, *organisational employees*, defined as a number of psychological and social benefits to employees. Moreover, and following Duque-Zuluaga and Schneider (2008), Liao et al. (2001), Pavičić et al. (2009), Sargeant et al. (2002), and Shoham et al. (2006), we should distinguish the profit from the non-profit context.

In their theoretical research, Duque-Zuluaga and Schneider (2008) propose a conceptual framework that relates the concept of MO and the concept of *organisational performance*, both adapted to the non-profit context. They suggest seven dimensions that NPOs should assess: beneficiary or recipient response, financial flexibility and resource acquisition, job satisfaction of volunteers and employees, responsiveness assessment, long-term outcomes, programme outputs and intermediate outcomes, and organisational efficiency.

By comparing the work of Duque-Zuluaga and Schneider (2008) with Jaworski and Kohli's (1993) seminal work, we assume that Duque-Zuluaga and Schneider's (2008) concept of *organisational performance* is a proxy for Jaworski and Kohli's (1993) MO for-profit context's consequences. Following this reasoning, we propose first that *organisational employees* in Jaworski and Kohli's (1993) concept and Duque-Zuluaga and Schneider's (2008) *job satisfaction of volunteers and employees* concept are consequences of the MO and the RSO and RSO, respectively. Second, we suggest that Duque-Zuluaga and Schneider's (2008) remaining *organisational performance* is a

proxy for Jaworski and Kohli's (1993) business performance. Moreover, analysing the literature review of MO empirical studies in the university context, we note that the vast majority employ an overall performance measure (Caruana et al., 1998; Hammond et al., 2006; Webster et al., 2006) as a proxy for organisational performance (see Table 4.5), whilst some research puts forward the need to develop a scale that will specifically measure multifaceted university performance because universities carry out different roles in the society (Akonkwa, 2009; Ma & Todorovic, 2011; Pavičić et al., 2009).

Table 4.5 Empirical studies on universities' market orientation and performance

Paper	Context	Performance
Caruana et al. (1998)	Australia's business schools (deans and head departments)	Overall performance, acquisition of resources
Hammond et al. (2006);	Schools of business USA (deans)	Overall performance
Webster et al. (2006)	Schools of business USA (deans)	Overall performance
Ma & Todorovic (2011)	USA universities (departments)	One construct with multifaceted aspects
Casidy (2014)	Undegraduate students - Australia	Post-enrolment communication behaviour, satisfaction, loyalty

Source: Self-elaborated

According to Sargeant et al. (2002), these previous studies do not capture the multifaceted nature of university performance. Likewise, Akonkwa (2009) urge researchers to understand the dimensions of performance in the context of HEIs and in operationalising measures of it, and Ma and Todorovic (2011), aware of the complexity of measuring performance in the university context, develop a performance measure incorporating multifaceted aspects of performance among different activities.

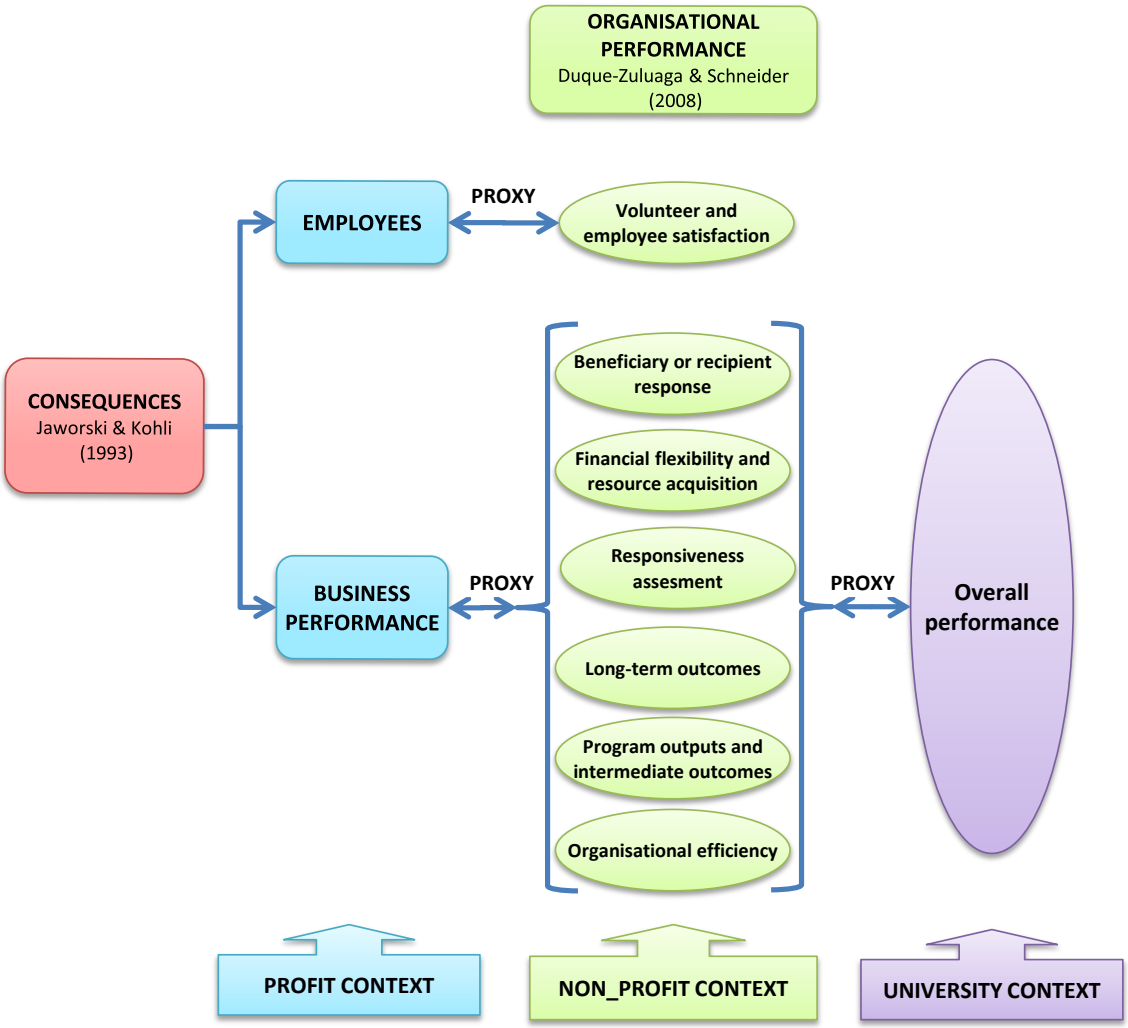
Thus, in accordance with the arguments stated above, we propose to contemplate multiple measures of organisational performance that pick the most relevant performance item for each organisation according to its strategic thrust because it is important to avoid weakening in the SO and performance relationship (see Figure 4.2).

Jaworski and Kohli (1993), together with Narver and Slater (1990), uphold that subjective performance might be more accurate in MO studies because they account for the particular strategies of organisations. Accordingly, they defend the use of subjective measures of performance in a profit context because a strong correlation exists between the subjective assessments and the objective counterparts. Thus, they propose to measure business performance using the judgemental measure by asking informants for their assessment of the overall performance of the business and its overall performance relative to its major competitors. In a later work, Shoham et al. (2006) find in a meta-analysis that the impact of the MO on subjective measures of performance is stronger than its impact on combinations of subjective and objective measures (no previous study uses objective measures exclusively). They conclude that subjective measures can provide a context-relevant assessment of performance because managers incorporate environmental considerations into their performance judgements.

Furthermore, research in the non-profit context proposes the use of multiple subjective measures of performance (Duque-Zuluaga & Schneider, 2008; Liao et al., 2001; Modi & Mishra, 2010). Hence, considering the aforementioned arguments, in agreement with Mintzberg (1996), and given that our research is targeted to senior university managers, we defend that the most common activities in university government require soft judgement, something that hard measures cannot provide.

Subsequently, Shoham et al. (2006), in their meta-analysis, find that those studies using subjective performance measures operationalise efficiency and effectiveness in the attainment of short- or long-term goals. In particular, Balabanis et al. (1997) define the effectiveness of NPOs as the degree to which they can achieve their organisational mission, while efficiency consists of allocating scarce resources to results.

Figure 4.2 Organisational performance as a consequence of stakeholder orientation in the university context



Source: Self-elaborated

Considering, therefore, that defining the performance of universities is a highly complex and controversial subject because of the vast diversity in their goals and objectives, we propose to measure Spanish public universities' performance using a different subjective dimensions. In accordance with Duque-Zuluaga and Schneider's (2008) non-profit organisational performance definition[46], we define university performance as a social construction that takes into account university stakeholders' expectations and the

[46] "Social construction that takes into account stakeholders' expectations, organizational values and mission to define the base or criteria that will guide organizational assessment" (Duque-Zuluaga & Schneider, 2008, p. 36).

organisational values and mission to define the base or criteria that will guide public university assessment. In the next sections, we proceed by discussing each dimension of university performance purposes.

4.4.1 Beneficiary satisfaction

In the context of NPOs, Duque-Zuluaga and Schneider (2008) call this term *beneficiary or recipient response*, which could be assessed with different measures, such as satisfaction, attendance, participation, or improvement reported by a user's supervisor, among others. Gainer and Padanyi (2005) consider this dimension an effectiveness measure, so they discuss *growth in client satisfaction*. Modi and Mishra (2010) adapt Gainer and Padanyi's (2005) client satisfaction measure and treat it as a *beneficiary satisfaction* efficiency measure, asking respondents to assess their own perception of beneficiary satisfaction.

In line with Sargeant et al. (2002), to assess performance in a NPO, it is necessary to examine the organisation's orientation towards such groups as individual donors, corporates, trusts/foundations, trustees, employees, volunteers, recipients, the government, umbrella bodies, and society in general. Given that universities are our context of study, it seems reasonable that the stakeholders' satisfaction would be the focal dimension of organisational performance. Thus, we propose a beneficiary satisfaction measure of performance asking the respondents to assess their perception of certain items related to university stakeholders' benefits.

4.4.2 Resource acquisition

The need to focus on resource acquisition seems relevant in the non-profit sector (Sargeant et al., 2002), proposing that those measures are good predictors of survival or closure. Duque-Zuluaga and Schneider (2008) explain that depending on the non-profit activity or financial structure, these organisations might want to monitor resource

acquisition. Besides, Macedo and Pinho (2006) evidence that NPOs are particularly dependent upon the resources from external providers; consequently, they explain that the ability to raise funds to attract resources is crucial because of organisations that exclusively depend on one or a few resource providers are likely to experience their constraining influences.

Thus, it seems reasonable, following Modi and Mishra (2010), to ask university managers to assess their sources of resource acquisition towards efficiency performance measurement items and also to compare their acquisition of grants over the past five years with the effectiveness[47] performance measurement items.

4.4.3 Reputation

Padanyi and Gainer (2004) affirm that reputation is a complex construct because organisations normally have several different reputations based on attributes and criteria of specific interest to different public groups, constituencies, interest groups, and/or stakeholders. In that sense, they recommend that NPOs' managers should think beyond how their organisation is perceived by the general public, how they are aware of their organisation's reputation among different key interest groups, and how each of these reputations influences the organisational performance and can be enhanced to improve the performance.

In the university context, Lynch and Baines (2004) highlight that reputation is important for the development of outreach activities and for commercial and public sponsors of research. They propose as a reputation's key factors the creation of an image of quality, the generation of a strong societal profile, and the development of offshore teaching operations in coalition with overseas partners. Elsewhere, Hemsley-Brown and Oplatka (2006) confirm that an interaction exists between institutional image and reputation to

[47] Shoham et al. (2006), in their meta-analysis, find that those studies using subjective measures of performance operationalise efficiency and effectiveness attainment of short- or long-term goals.

improve university stakeholders' loyalty and note that the concept of reputation might be interpreted differently in the HE context from other service organisations. Harrison-Walker (2009) considers university reputation as a crucial strategic decision to be successful in the long term, being closely related to the marketing concept.

Thus, we propose to introduce reputation as a university measure of performance. To identify its components, we follow Padanyi and Gainer's (2004) reputation measures of effectiveness. Accordingly, we should note that while respondents were asked to assess the level of reputation of their university compared with the average of other similar universities, we refrained from asking for a comparison with direct competitors. This is not to argue that leaders of Spanish public universities face direct competition, but they are extremely knowledgeable about the reputation amongst other Spanish public universities. These results are also contrasted in previous research by the author.[48] Thus, we asked the respondents to compare their reputation with what they knew about the average reputation amongst other Spanish public universities.

4.5 Hypotheses established

The achievement of some specific research objectives will be accomplished by testing and analysing the hypotheses established. The formulation of hypotheses attempts to reflect the existence of diverse causal relationships between the constructs contemplated in a conceptual model. The argument put forward is that institutional factors drive the RSO and PSO, which then drive university performance. We cluster the hypotheses into five distinct groups relating to major antecedents (external factors and internal factors), stakeholder orientations (RSO and PSO), and performance measures (beneficiary satisfaction, resource acquisition, and reputation).

[48] Casablancas-Segura (2011).

4.5.1 Hypotheses concerning antecedents

According to the approach underlying the MO conceptual models, which have been featured previously in this chapter, section 3, positive and negative direct effects could exist amongst the antecedents and the MO concept.

Hypotheses concerning external institutional factors

Mimetic factors–RSO and mimetic factors–PSO

When the goals are ambiguous or when the environment creates symbolic uncertainty, organisations may model themselves on other organisations. Managers also actively seek models upon which to build that they perceive to be more legitimate or successful. Thus, isomorphism puts pressure on others to accept and follow institutional standards (DiMaggio & Powell, 1983).

For the NPO context, Macedo and Pinho (2006) point out that the MO will be related to the chief funding source explained by the existence of mimetic processes by which it tends to acquire the attributes of other organisations upon which it depends or to which it is related. Moving to the context of universities, we also found statements that highlight the existence of the mimetic effects among them. In that sense, Navarro and Gallardo (2003) put forward the idea that organisations are constrained not only by the market but also by the pressures and limitations of the institutional environment and consequently try to obtain stability and legitimacy by imitating other successful organisational structures, activities, and routines. Moreover, Rebolloso et al. (2008) affirm that, except for some well-located Spanish universities, the rest seem to being dragged along by changes more than other purposes, often without knowing it.

In more concrete terms, Llinàs-Audet et al.'s (2011) results highlight the fact that most Spanish universities' strategic plans do not differ very much from each other. Likewise, Bennett and Kottasz (2011) demonstrate that a school's desire to mimic the

internationalisation behaviour of other business schools is likely to cause it to extend its involvement with internationalisation. Mora and Vidal (2000) are more forceful in their statements about Spanish universities, corroborating that new Spanish universities are clones of the old ones, tending to offer the same programmes and services.

In summ, in the university context, the existence of networking environment in which every university is visible to every other can enhance the mimetic effect and thus the need to copy successful actions of others (Van der Wende, 2007). Therefore, we expect a positive mimetic effect on RSO and PSO, and thus the following hypothesis are suggested:

H1: *Mimetic factors based on copy successful actions of other public universities have a positive effect on the adoption of a RSO.*

H2: *Mimetic factors based on copy successful actions of other public universities have a positive effect on the adoption of a PSO.*

Hypotheses concerning internal organisational factors

Traditional culture–RSO and traditional culture–PSO

In their seminal work, Kohli and Jaworski (1990) reveal that in profit organisations political behaviour exists that consists of individuals' attempts to promote self-interests and threaten others' interests. In that sense, they posit that a highly politicised system, however, has the potential for engendering interdepartmental conflict and therefore inhibiting a MO.

This concept is also reflected in multiple studies applied to the context of universities. Patterson (2001) asserts that university staff, including academics, use organisation mainly for their own purposes, decoupling from the efficiency objectives of the institution. Hence, Harris and Watkins (1998) highlight that the presence of cultural components inhibits the MO and Larsen (2001) that reluctance on the part of academics restricts universities' possibilities for action. Likewise, Akonkwa (2009) reflects that the

values and beliefs in the MO affect universities' performance, particularly highlighting the resistance to change of academics and administrative personnel as a topic to consider in developing an MO. Moreover, Wright (2010) evidences within Canadian universities the phenomenon of resistance to change, including evidence of barriers to implementing sustainability initiatives.

Concerning Spanish universities, Ferrer-Balas et al. (2009) and Perotti (2007) reflect universities' internal actors as one of the pivots of institutional change in Spain's university system that are embedded in self-referentiality. Thus, in Spanish public universities, it is difficult for an administrator to propose changes and achieve consensus among groups of faculty at any level. More forcefully, Mora and Vidal (2000) warn that the excessive power of academics within universities is a barrier to implementing university change manifested through the reluctance of academics to lose their full control over the institutions explained in part by the fear of an excessive and direct role of politicians in university affairs. Specifically, in previous research by the author,[49] the results identify an organisational culture that creates little perception of the institution as a whole among university staff.

To conclude, the excessive influence of academics impedes a more resolute introduction of market forces into the higher education system and does not stimulate a greater responsiveness to stakeholder needs (Mora & Vidal, 2000). Thus, the aforementioned theoretical arguments provide reasonable justification for advancing the following hypothesis:

> **H3:** *Traditional culture of public universities has a negative effect on the adoption of a RSO.*

Since our objective research considers the direction of society through two distinct constructs, in our literature review process, we also considered it appropriate to identify separately those contributions that are closer to a proactive orientation. On that line,

[49] Casablancas-Segura, C. (2011).

Shattock (2000) considers the university culture as a barrier to the entrepreneurial process. In more detail, Jongbloed et al. (2008) identify a lack of entrepreneurial academic culture, caused by the belief that research commercialisation is not part of the academic research job. In a recent study, d'Este et al. (2013) highlight that departments need to make deliberate efforts to formulate important strategic and managerial challenges that are far from the well-honed and routinised strategies employed to accomplish the traditional university missions (academic and research). Therefore, the aforementioned theoretical arguments provide reasonable justification for advancing the following hypotheses.

H4: *Traditional culture of public universities has a negative effect on the adoption of a PSO.*

Complexity–RSO and complexity–PSO

Kohli and Jaworski (1990) define *complexity* as *interdepartmental dynamics*, which are formal and informal interactions and relationships among an organisation's departments. Within these "so-called" *dynamics* exists what they call *interdepartmental conflict*. This "conflict" may stem from the natural desires of individual departments to be more important or powerful or may even be inherent in the charters of various departments. The results of a later work by Jaworski and Kohli (1993) confirm that interdepartmental conflict inhibits communication and departments' response to market needs.

Subsequent meta-analytic studies confirm the factor as an antecedent to the development and implementation of the MO (Kirca et al., 2005; Van Raaij & Stoelhorst, 2008). In the non-profit context, Siu and Wilson (1998) affirm that interdepartmental conflict affects the implementation of the MO. Afterwards, several authors, in one way or another, confirm the existence of this antecedent and its negative

effect on the implementation and development of the MO (Sargeant et al., 2002; Wasmer & Bruner, 2000).

In the university context, *complexity* of the university is a consequence of the amount of existing areas of knowledge and the degree of sophistication of these areas (Navarro & Gallardo, 2003), and is also considered an antecedent to SO. Because of this organizational complexity a big heterogeneity of goals will be and it will be more difficult the valuation and measurement of those goals (Patterson, 2001). Because of this university managers will devote more time and efforts dealing with internal problems than with the external stakeholders, thus university complexity will inhibit its SO. Thus, the following hypotheses can be addressed:

H5: *Complexity of public universities has a negative effect on the adoption of a RSO.*

As explained in previous chapters, few pieces of empirical research study separately the relationships between the antecedents and the consequences of the responsive and proactive market orientations. In any case, for the complexity antecedent, we can support the relationship in Narver et al.'s (2004) findings, which show a negative correlation between the proactive MO and the bureaucratic organisational form,[50] which is greater than that between the responsive MO and the bureaucratic form. Emphasising rigid rules, job descriptions, and formal authority inhibits creative problem solving and discourages the generation of new ideas, which are entirely necessary for universities to undertake entrepreneurial behaviours. Thus, the following hypothesis can be addressed:

H6: *Complexity of public universities has a negative effect on the adoption of a PSO.*

[50] Bureaucracy negatively influences innovative behaviour by reducing an organisational member's awareness, involvement, and commitment by limiting the available information (Narver et al., 2004).

Top management emphasis–RSO and top management emphasis–PSO

Kohli and Jaworski (1990) and Jaworski and Kohli (1993) suggest that *top management emphasis* is an important driver of a MO. Subsequent meta-analytic studies confirm that leadership is vital for the development and maintenance of market-oriented strategies (Cano, Carrillat & Jaramillo, 2004; Kirca et al., 2005; Van Raaij & Stoelhorst, 2008). In addition, we found for the non-profit context studies that confirm the same results as for profit contexts, affirming that top management is an essential factor for developing MO (Cervera et al., 2001; Siu & Wilson, 1998).

Moreover, in the university context some authors highlight how important is that top managers transmit the emphasis of strategic management to the university community as an essential process for creating an organisational culture that encourages to be closed to the society (Flavián & Lozano, 2006; Hammond et al., 2006; Harris & Ogbonna, 2001; Navarro & Gallardo, 2003; Oplatka & Hemsley-Brown, 2007; Zhou et al., 2009).

In the Spanish case, university managerialism is characterised by the involvement of academics in managerial issues; therefore, managerial responsibilities are unavoidable in a collegial system. In that sense, Mora and Vidal (2000) point out that management depends on individual initiative. This assertion is supported by research by Llinàs-Audet et al. (2011) and Ferrer-Balas et al. (2009); the first highlights the importance of strong university leadership in developing strategic planning; and the second shows that leadership may also be a driver when the leader sees transformation as a way to leave his or her legacy to the organisation. Finally, it is necessary to mention that these results are contrasted in previous research by the author[51]. Therefore, we propose the following hypothesis:

H7: *Emphasis shown by university managers on university's stakeholders has a positive effect on the adoption of a RSO.*

[51] Casablancas-Segura (2011).

As explained in previous chapters, there is little empirical research that studies separately the relationships between the antecedents and the consequences of the responsive and proactive market orientations, and none of them is in the university context. However, we can find evidence in the previous literature through a tendency of researchers to give some importance to proactive behaviour. In this way, Siu and Wilson (1998) affirm that college management should be attentive to taking an entrepreneurial approach and look closely at the market needs.

In the Spanish university context, Flavián and Lozano (2006) highlight the fact that high-level management may also work to implement innovations and mechanisms in universities' departments that will ensure their advancement to capture the society needs beyond the mere fact of accounting for these. Besides, Navarro and Gallardo's (2003) results prove that a proactive orientation requires a system of governance that is professional, competent, integrated, and able to bear in mind all the diverse and important interests of the university in its social, academic, and market aspects. In the research line on entrepreneurial universities, Guerrero and Urbano (2012) agree with other authors regarding the fact that entrepreneurial attitudes in university managers, as well as all the university staff, make substantial changes possible within the university.

Based on the above discussion, we reason that when senior managers demonstrate the importance of a commitment to creating an organisational culture that encourages innovation and creativity, that emphasis can be strongly linked to the PSO. These results are also contrasted in previous research by the author.[52] This leads to the following hypothesis:

H8: *Emphasis shown by university managers on university's stakeholders has a positive effect on the adoption of a PSO.*

[52] Casablancas-Segura (2011).

Cohesion–RSO and cohesion–PSO

Kohli and Jaworski (1990) establish that interdepartmental connectedness consists of formal and informal interactions and relationships among an organisation's departments. The connectedness facilitates interaction and the exchange of information, so it can be expected that the greater the extent to which individuals across departments are directly connected (or networked) the more they are likely to follow a MO implementation (Jaworski & Kohli, 1993). Just as happens for the variable emphasis, subsequent meta-analytic studies confirm this factor as an antecedent to the development and implementation of the MO (Kirca et al., 2005; Van Raaij & Stoelhorst, 2008).

According to Flavián and Lozano (2006), internal systems and structures represent the cohesion or affinity of relationships between the diverse existing university' structures -faculties, departments, research institutes-, administration areas and governing bodies. University *cohesion* can produce stimuli that interact to the benefit of an external orientation and increase the university structures' willingness to analyse what is happening around it (Akonkwa 2009; Flavián & Lozano 2006; Wasmer & Bruner, 2000).

Based on the above discussion, cohesion between university managers and their structures has a positive effect on the relation antecedents and societal orientation (responsive and proactive) relationships. According to these results, the following hypotheses can be suggested:

H9: *Cohesion amongst university structures has a positive effect on the adaptation of a RSO.*

H10: *Cohesion amongst university structures has a positive effect on the adaptation of a PSO.*

4.5.2 Hypotheses concerning the relationship between RSO–PSO and organizational performance

The theory of market orientation (Kohli & Jaworski, 1990; Narver & Slater, 1990) suggests a positive relationship between MO and performance outcomes. In their seminal work, Narver and Slater (1990) define performance as the primary aim of an MO to create superior customer value. Nowadays, there is broad consensus regarding the positive relationship between MO and firm performance (Cano et al., 2004; Kirca et al., 2005; Shoham et al., 2006).

In the NPO and also the university context, we found studies that verify a positive relationship between NPOs' MO and their overall performance: Balabanis et al. (1997), Cano et al. (1998), Caruana et al. (1998), Hammond et al. (2006), Kumar, Subramanian and Yauger (1998), Modi and Mishra (2010), Voon (2008), Voss and Voss (2000), Webster et al. (2006), and Wood, Bhuian and Kiecker (2006). Specifically, in the Spanish university context, Flavián and Lozano's (2006) results show that the Spanish university MO has a positive influence on the performance obtained during the course of the university's activities (teaching, research, and cultural diffusion).

As we show, there are no empirical studies in the university context that consider the RSO and PSO effects on multiple performance measures, many studies reflect these as future lines of research. Thereby, Akonkwa (2009) links entrepreneurship and MO as a way in which universities are expected to be more successful and also, the results obtained by Ma and Todorovic (2011) and Mainardes et al. (2014) suggest that an MO may be the pre-eminent strategy to achieve superior performance in a university. Following this argument, universities must always think seriously about improving their performance. Therefore, performance must be one of the key elements of both the responsive and the proactive SO.

Currently, as indicated in previous chapters, following Narver et al. (2004), our study conceptualises the RSO and PSO as capabilities that result in increased performance

outcomes, becoming the first study that empirically illustrates the essential nature of how the PSO affects various important broader performance outcomes[53].

In that sense, the objective of the next sections is to establish the expected relationships between both RSO and PSO and public university performance. While both PSO and RSO are important to the development of university performance, the question to explore is which plays the greater role in increasing each performance measure.

Hypotheses concerning the relationship between RSO–PSO and beneficiary satisfaction

The result of the literature review highlights the importance, in the context of the NPO and universities, of contemplating within the measurement of performance the level of satisfaction achieved by users regarding their activities or services. to be known and understood continuously and systematically. In that sense, Cano et al.'s (2004) meta-analysis confirms that the positive effect of the MO on organisational effectiveness is reflected in stronger levels of customer satisfaction.

In the NPO context, the literature review found studies that verify a positive relationship between the MO concept and the stakeholders' satisfaction: Chan and Chau (1998); Gainer and Padanyi (2002); Gainer and Padanyi (2005); and Wood et al. (2000). On the other hand, Modi and Mishra (2010) verify a positive relationship between the societal orientation concept and the NPO stakeholders' satisfaction.

Within the context of universities, as we mentioned earlier, no study empirically demonstrates the aforementioned relationship, but it can be found in theoretical studies such as Jongbloed et al. (2008) and Mainardes et al. (2014), which highlight the fact that a satisfied student recommends the institution to other potential students and also returns later in his or her career to take other courses. At a broader level, we found Russo et al.'s (2007) contribution, which establishes that triangular relationships exist

[53] In their study, Voola and O'Cass (2010) conceptualise performance as comprising five items relating to market share and financial performance.

between students and the academic community, entrepreneurs, and citizens. Also, Casidy's recent (2014) results confirm that students' perception of universities' MO has a positive impact on their satisfaction.

According to these results, and given that universities are our context of study, the satisfaction of the stakeholders would be the focal dimension of organisational performance. Hence, we address the following hypothesis:

H11: *RSO of public universities has a positive effect on the beneficiary satisfaction of their stakeholders.*

The results of the literature review highlight that market-oriented NPOs create value for beneficiaries (Balabanis et al., 1997; Modi & Mishra, 2010; Vázquez, Álvarez & Santos, 2002), but no study considers the differentiation between the two concepts, proactive and responsive. However, the importance of taking proactive behaviour into account can be found as an appropriate strategy to deal with the current environmental changes in some theoretical studies (Akonkwa, 2009; Havas, 2008; Laplume et al., 2008; Pavičić et al., 2009; Takala et al., 2001; Tetřevová & Sabolová, 2010). In line with this assertion, universities should promote entrepreneurial mindsets inside their organisational structures because such an orientation helps to enhance the interconnectivity of their internal structures and create a more fertile setting for the development of new knowledge transfer (Berbegal-Miravent et al., 2013). Hence, we propose:

H12: *PSO of public universities has a positive effect on the beneficiary satisfaction of their stakeholders.*

Hypotheses concerning the relationship between RSO–PSO and resource acquisition

As we explained in the previous section, we found studies that verify a positive relationship between the MO concept and resource acquisition in the NPO context, such as Balabanis et al. (1997), Chan and Chau (1998), Gainer and Padanyi (2002, 2005),

Kara, Spillan and DeShields (2004), Morris et al. (2007), and Vázquez et al. (2002). On the other hand, Modi and Mishra (2010) expect a positive association between NPOs' MO and the resource-attraction outcome; however, their results are non-significant.

In the university context, Caruana et al. (1998) verify a weaker relationship between MO and the ability of schools or departments to obtain non-government funding during. In addition, we can find theoretical studies, such as Ferrer-Balas et al. (2009), which claims that sources of funding may drive a university-wide transformation, and Mainardes et al. (2014), which demonstrates how many university stakeholders[54] may become a source of finance to the public university and advocate a university market orientation.

Based on the above discussion, it seems appropriate to posit the following hypothesis:

H13: *RSO of public universities has a positive effect on their resource acquisition.*

Public universities need to move towards the market as it represents the main source of financing that is viable today in response to the decreasing levels of public funding. To attract alternative financial resources to public money, internal university actors need to create and develop new relationships with diverse stakeholders as many of them are not directly engaged with senior university managers (Mainardes et al., 2014).

From a proactive perspective, many universities are engaging also into entrepreneurial activities with the aim of securing more diversified resources (Akonkwa, 2009; Sargeant et al., 2002). In addition, Tetřevová and Sabolová's (2010) results show that universities apply proactive strategies during negotiations with the grant agencies as key providers of scientific research funding. Hence, proactive behaviours can be viewed as adaptive strategies for ensuring that those organisations receive the necessary resources

[54] They call them non-traditional stakeholders: employers, companies, local communities, secondary schools, student families, research and development actors, professional orders, private financing, business associations, former students, international students, and scientific communities.

for accomplishing their mission and carry out their activities (Macedo & Pinho, 2006). This leads to hypothesis:

H14: *PSO of public universities has a positive effect on their resource acquisition.*

Hypotheses concerning the relationship between RSO–PSO and reputation

As we explained in the previous section, we found studies that verify a positive relationship between the MO construct and reputation in the NPO context, such as Gainer and Padanyi (2002, 2005). On the other hand, Modi and Mishra (2010) expect a positive association between NPOs' MO and their reputation and Maignan et al.'s (2011) results show a positive effect of SO[55] on reputation.

Within the context of universities, as indicated before, no study empirically demonstrates the aforementioned relationship, but it can be found in theoretical studies (Häyrinen-Alestalo & Peltola, 2006; Hemsley-Brown & Oplatka, 2006; Nguyen & LeBlanc, 2001).

Consequently, according to Pavičić et al. (2009), the major contributions in the field of identifying and interpreting universities' performance agree that financial indicators cannot be used as the sole measurement, but are rather complemented by constituent satisfaction and other relevant measures, such us reputation. Along this line of reasoning, the following hypothesis can be suggested:

H15: *RSO of public universities has a positive effect on their reputation.*

Lynch and Baines (2004) hypothesise that when universities competing in the international arena, a PSO can help them to achieve a better international reputation. In this regard, de Filippo et al. (2012) affirm that the universities that implement an

[55] Following Kohli and Jaworski (1990), the authors propose three types of stakeholder-oriented behaviours: information generation, information dissemination, and responsiveness.

entrepreneurial university strategy are the ones that are in a position to seek inclusion in international rankings.

Based on the above discussion, in our thesis, we argue that the PSO is a critical mechanism by which universities could be more entrepreneurial in relation to society needs, given that this strategy leads to understanding the stakeholders' latent needs through scanning the society more widely beyond encouraging new knowledge generation. Thus, following Voola and O'Cass (2010), a proactive societal orientation as a capability increases various important broader performance outcomes, among these the university reputation. This leads to the following hypothesis:

H16: *PSO of public universities has a positive effect on their reputation.*

4.6 Purpose of the conceptual model

A **model** is a representation of a theory. A theory can be thought of as a systematic set of relationships providing a consistent and comprehensive explanation of phenomena. A convention in SEM consists of two models, the measurement model (representing how measured variables come together to represent constructs) and the structural model (showing how constructs are associated with each other) (Hair, Black, Babin, Anderson & Tatham, 2006).

As a result of the hypotheses raised in the previous section (see Table 4.6 for a summary of the working hypotheses), we obtained an initial model (Figure 4.3) that aims to explain the antecedents and consequences of Spanish universities' stakeholder orientations. Thus, our model is composed of **independent variables** (mimetic factors, traditional culture, complexity, emphasis, and cohesion) and **dependent variables** (RSO, PSO, beneficiaries' satisfaction, acquisition of resources, and reputation).

Specifically, it is a model of SO adapted from the concept of MO and expanded, which it means that we have added two new constructs, RSO and PSO, rather than a solely

stakeholder-oriented construct, following the works of Narver et al. (2004) and Voola and O'Cass (2010). Furthermore, as a result of the literature review, we added control variables.

Figure 4.3 Proposed model and hypothesis path

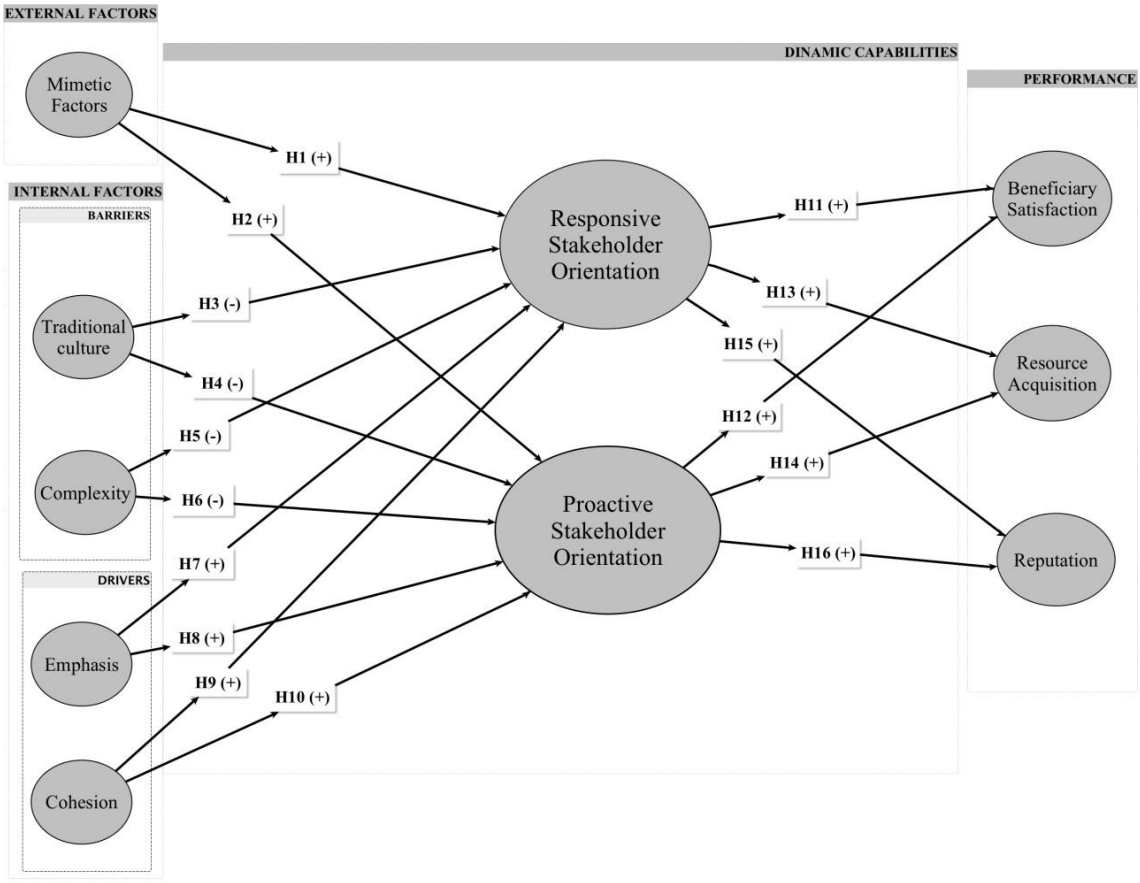


Table 4.6 Summary of the working hypotheses in our research

Hyp.	Relational effect	Studies that propose the relationship
H1	Mimetic factors based on copy successful actions of other public universities have a positive effect on the adoption of a RSO.	DiMaggio & Powell (1983); Hannan & Freeman (1984); Scott (1987); Zajac & Kraatz (1993); Mora & Vidal (2000); Navarro & Gallardo (2003); Macedo & Pinho (2006); Rebolloso et al. (2008); Bennett & Kottasz (2011); Llinàs-Audet et al. (2011).
H2	Mimetic factors based on copy successful actions of other public universities have a positive effect on the adoption of a PSO.	
H3	Traditional culture of public universities has a negative effect on the adoption of a RSO.	DiMaggio & Powell (1983); Oliver (2010); Wasmer & Bruner (2000); Siu & Wilson (1998); Harris & Watkins (1998); Larsen (2001); Mora & Vidal (2000); Shattock (2005); Perotti (2007); Ferrer-Balas et al. (2009); Jongbloed et al. (2008); Lipinski, Minutolo, & Crothers. (2008); Auh & Menguc (2009); Akonkwa (2009); Ferrer (2010); Wright (2010); Maignan et al. (2011); Guerrero & Urbano (2012); D'Este et al. (2013).
H4	Traditional culture of public universities has a negative effect on the adoption of a PSO.	
H5	Complexity of public universities has a negative effect on the adoption of a RSO.	Pettigrew (1989); Kohli & Jaworski (1990); Jaworski & Kohli (1993); Siu & Wilson (1998); Wasmer & Bruner (2000); Villarreal (2000); Sargeant et al.(2002); Kirca et al. (2005); Patterson (2001); Van Raaij & Stoelhorst (2008); Auh & Menguc (2009); Peña (2010).
H6	Complexity of public universities has a negative effect on the adoption of a PSO.	Narver et al. (2004).
H7	Emphasis shown by university managers on university's stakeholders has a positive effect on the adoption of a RSO.	Kohli & Jaworski (1990); Jaworski & Kohli (1993); Siu & Wilson (1998); Wasmer & Bruner (2000); Cervera et al. (2001); Harris & Ogbonna (2001); Oplatka & Hemsley-Browm (2007); Cano et al. (2004); Kirca et al. (2005); Hammond et al. (2006); Oplatka & Hemsley-Brown (2007); Ferrer-Balas et al. (2009); Van Raaij & Stoelhorst (2008); Zhou et al. (2009); Llinàs-Audet et al. (2011).
H8	Emphasis shown by university managers on university's stakeholders has a positive effect on the adoption of a PSO.	Siu & Wilson (1998); Navarro & Gallardo (2003); Flavián & Lozano (2006); Guerrero & Urbano (2012).
H9	Cohesion amongst public university structures has a positive effect on the adoption of a RSO.	Kohli & Jaworski (1990); Jaworski & Kohli (1993); Wasmer & Bruner (2000); Kirca et al. (2005); Flavián & Lozano (2006); Van Raaij & Stoelhorst (2008).
H10	Cohesion amongst public university structures has a positive effect on the adoption of a PSO.	

Hyp.	Relational effect	Studies that propose the relationship
H11	RSO of public universities has a positive effect on the beneficiary satisfaction of their stakeholders.	Chan & Chau (1998); Siu & Wilson (1998); Liao et al. (2001); Wood et al. (2000); Gainer & Padanyi (2002); Cano et al. (2004); Padanyi & Gainer (2004); Russo et al. (2007); Bjørkquist (2008); Duque-Zuluaga & Schneider (2008); Jongbloed et al. (2008); Modi & Mishra (2010); Mainardes et al. (2012); Casidy (2014).
H13	RSO of public universities has a positive effect on their resource acquisition.	Balabanis et al. (1997), Caruana et al. (1998); Chan & Chau (1998); Gainer & Padanyi (2002); Vázquez et al. (2002); Kara et al. (2004); Padanyi & Gainer (2004); Macedo & Pinho (2006); Morris et al. (2007); Duque-Zuluaga & Schneider (2008); Ferrer-Balas et al. (2009); Modi & Mishra (2010); Mainardes et al. (2014).
H15	RSO of public universities has a positive effect on their reputation.	Nguyen & LeBlanc (2001); Gainer & Padanyi (2002); Lynch & Baines (2004); Padanyi & Gainer (2004); Häyrinen-Alestalo & Peltola (2006); Hemsely-Brown & Oplatka (2006); Duque-Zuluaga & Schneider (2008); Pavičić et al. (2009); Modi & Mishra (2010).
H12	PSO of public universities has a positive effect on the beneficiary satisfaction of their stakeholders.	Takala et al. (2001); Havas (2008); Laplume et al., (2008); Akonkwa (2009); Pavičić et al. (2009); Tetřevová & Sabolová (2010); Voola & O'Cass (2010); Berbegal-Miravent et al. (2013).
H14	PSO of public universities has a positive effect on their resource acquisition	Sargeant et al. (2002); Akonkwa (2009); Tetřevová & Sabolová (2010); Voola & O'Cass (2010); Mainardes et al. (2014).
H16	PSO of public universities has a positive effect on their reputation.	Lynch & Baines (2004); Voola & O'Cass (2010).

Source: Self-elaborated

4.7 Multi-group analysis of the different samples according to control variables

In the most common application of SEM it is assumed that all data that are to be analyzed become a representative sample of the entire population. However, this purpose cannot always be reasonably accepted because it is possible to assume that there are several distinct populations instead of a single population and therefore different structural models instead of a single model (Bentler, 1995: 149).

Hence, to further explore the validity and psychometric properties of the final model, we used multi-group tests of measurement invariance to examine the stability of the

structure across the control variables[56]. It provides greater support for its validity and ability to explain out theoretical model across different external and internal variables.

Through the multi-group analysis we will analyze the data for all samples simultaneously with any or all parameters constrained to be equal in all groups and, thus, proceed to verify that the model is identical in all of them, which it means reproduces the data of each group exactly as a unique sample. Thus, we can use this technique to test the hypothesis that structural relationships are also invariant between different groups analyzed. Therefore, we establish the hypothesis that the coefficients between constructs proposed in our model are invariant for different groups considered simultaneously for each of the control variables considered in our research: the university size, the seniority of the university, the autonomous community to which the university belongs, the degree of endogamy in management positions in the university, and the university's ranking position.

Below we describe the control variables proposed in our theoretical model.

4.7.1 University size as a control variable on the theoretical model relationships

Ferrer-Balas et al.'s (2009) suggests that the universities with a large size (more than 10,000–12,000 students) reflect differences in the way that a university is managed for a rapid transformation. Furthermore, Hammond and Webster (2014) recent study, also found that universities respond to MO and performance in ways that are different from their size.

We consider **university size** (variable SZE) as the organisational size that depends on the university's number of students. Specifically, we rely on Álvarez et al.'s (2002) classification, which clusters Spanish universities into four groups: extra-large (more

[56] Variables that measure atributes of a given unit of analysis that are (usually) no expected to influence the results of the SEM anaysis.

than 50,000 students), large (between 25,000 and 50,000 students), medium (between 10, 000 and 25,000 students), and small (fewer than 10,000 students). Since, in the Spanish public university context, small universities reflect a very low percentage of the total managers' universe (only 8%; see Chapter 6, Annex V Table AV.6), we consider the following clusters: extra-large – variable EXL (more than 50,000 students), large – variable LRG (between 25,000 and 50,000 students), and medium and small – variable M&S (fewer than 25,000 students).

4.7.2 Seniority of the university as a control variable on the theoretical model relationships

Recently, Pietilä's (2014) affirms that in a higher education context a large, prestigious, and traditional university has the necessary resources to influence its environment and resist external changes, as opposed to middle and young universities, which may not. According to this author we also found that universities could respond to the relationship between the antecedents and both the RSO and the PSO as well as, the relationship between the RSO and PSO and the performance variables in ways that are different from their seniority.

We consider seniority of the university (variable ANT) according to the building stages of Spanish universities' history, we classify these into three groups: senior universities – variable SEN (prior to 1960), modern universities – variable MDR (created between 1960 and 1985), and young – variable YNG (subsequent to 1985).

4.7.3 Autonomous communities as a control variable on the theoretical model relationships

The strong Spanish national rootedness is also regional owing to the direct responsibility of the autonomous communities for university education strengthened by ample autonomy granted to universities.

Kirca et al.'s (2005) meta-analysis evidences that countries or regions may respond different to MO implementation because of the existence of differences in cultural values among them. At university context we found an example in Berbegal-Mirabent et al.'s (2013) research. These authors affirm that regional factors also seem to play a role, arguing that it may be due to the fact that universities are somewhat embedded in their corresponding regional context. Concretely, they evidence that geographic localisation is a factor that hinders the knowledge transfer performance of universities.

Thus, we consider **autonomous communities** (variable CCAA) as a control variable. Spain has 17 autonomous communities (see abbreviations) with direct responsibility for university education (Perotti, 2007). We cluster the communities into two groups according to the following variables (see Table 4.7): population in the year 2013 (information gathered from INE[57]); number of universities in 2013 (information gathered from CRUE[58]); number of faculty in courses in 2010–2011 (information gathered from INE); public expenditure on education in 2012 (information gathered from INE); and number of firms with innovation activities in 2012 (information gathered from INE). The criterion followed to cluster universities into group 1 (CCAA1) involves classifying all the regions that have fulfilled the discrimination restriction established for each variable in the first group: values located in the fourth quartile at the group 1, and the rest (which are located between first quartile and third quartile) at the group 2 (CCAA2).

[57] Instituto Nacional de Estadística (http://www.ine.es/).
[58] Conferencia de Rectores de las Universidades Españolas (http://www.crue.org).

Table 4.7 Criterion to cluster CCAA

Variables/ CCAA	Population 01/01/13	Cluster	Nº Un. 2013	Cluster	Faculty 2010-2011	Cluster	PE educat. 2012	Cluster	Nº IF 2012	Cluster
AND	8.393.159	1	10	1	18.769	1	7.473.802	1	2.128	1
ARA	1.338.308	2	1	2	3.648	2	1.055.147	2	730	2
AST	1.067.802	2	1	2	2.072	2	788.294	2	358	2
ISB	1.110.115	2	1	2	1.446	2	758.066	2	237	2
ISC	2.105.232	2	2	2	3.608	2	1.494.550	2	397	2
CAN	590.037	2	1	2	1.267	2	528.361	2	227	2
CYL	2.518.528	2	4	1	7.109	1	2.056.252	1	921	2
CLM	2.094.391	2	1	2	2.456	2	1.595.714	1	549	2
CAT	7.480.921	1	7	1	17.696	1	5.923.847	1	4.159	1
VAL	4.987.017	1	5	1	12.388	1	4.116.479	1	2.043	1
EXT	1.100.968	2	1	2	2.010	2	924.781	2	208	2
GAL	2.761.970	1	3	2	5.842	2	2.246.600	1	1.092	2
MAD	6.414.709	1	6	1	19.210	1	4.768.489	1	3.153	1
MUR	1.461.987	2	2	2	3.200	2	1.302.848	2	509	2
NAV	638.949	2	1	2	926	2	571.796	2	459	2
PVA	2.177.006	2	1	2	5.296	2	2.604.013	1	2.030	1
RIO	318.639	2	1	2	448	2	246.687	2	249	2
Median	2.094.391		1		3.608		1.494.550		549	
Mean	1.868.216		2.8		3.748		1.532.067		726	
4rth quartile	**8.393.159**		**10**		**19.210**		**7.473.802**		**4.159**	
3rth quartile	**2.761.970**		**4**		**7.109**		**2.604.013**		**2.030**	

Nº Un. = number of universities in 2013; **Faculty** = number of faculty in courses in 2010–2011;
PE educat.= public expenditure on education; **Nº IF** = number of firms with innovation activities

Source: Self-elaborated

4.7.4 Endogamy as a control variable on the theoretical model relationships

The mechanism for selecting professors, which is highly influenced by the university itself, has produced a tendency for university endogamy (Mora, 2001). An endogamous culture is reflected in the ways endogamics and non-endogamics university managers react to resistance to change because, for example, one can sense that incorporating talented teachers is a threat to its survival and therefore they are reluctant to implement university policies of new contracts and promotion that exclusively assess the value and trajectory of candidates (Peña, 2010).

Spanish universities reflect a widely endogamic culture. We define **endogamy** (variable ENDOG) as the mechanism for selecting professors, which are highly influenced by the university itself (Mora, 2001). We measure endogamy by inbreeding as a dichotomous variable based on two factors, first as a career within the same university and the second as a career in the same autonomous region. In the first, we analyse whether a difference exists between the university where a professor obtained a PhD degree and the university in which he/she has made a career and is currently developing a management position (so variable ENDOG1 reflects no difference while variable ENDOG2 reflects a difference). For the second, we follow the same procedure but change the unit of analysis to autonomous community instead of university.

4.7.5 Ranking position as a control variable on the theoretical model relationships

Following Flavián and Lozano's (2006) suggestions, we propose to explore differences between the various typologies of universities concerning their ranking position. According to de Filippo et al. (2012), a ranking furnishes information on an institution's "prestige" and has a considerable impact on the global society in light of the internationalisation of HE. In addition, Asaad et al. (2013) highlight the university ranking position as an important issue in the international student decision making, noting that lower-ranked universities need to undertake marketing efforts as a formal way to communicate the qualities of their university.

In summ, recent studies found that universities into a certain ranking positions respond to international rankings in ways that are different from other ranking positions. Thus, we consider **ranking position** (variable RANK) as a control variable.

Nowadays, there are several proposals for rankings; among other ranking classifications (the Times Higher Education World University, the Performance Ranking of Scientific Papers for World Universities (formulated by the Higher Education and Accreditation

Council of Taiwan), the Leiden World Ranking (Netherlands), and the Scimago Institutions Ranking (Spain)), we selected the Academic Ranking of World Universities (ARWU) for two essential reasons: first, because nowadays it is one of the most reputed international rankings; and second, because it contains all the universities considered in the thesis. Obviously, we are aware of the limitations of this type of classification, highlighted by the European University Association (2011). This association evidences that these rankings apply the same parameters to measure the institutions' activity (basically academic training and research), so universities created to fulfil other missions (for example, those that serve local or regional needs) are at a disadvantage. Separately from this limitation, which is general for all the rankings, the ARWU uses the absolute number of papers, citations, or staff size, so there is dependence on institutions' size. The data were collected from ARWU 2013, selecting Spain as a country. From the ranking obtained, private universities and state universities were omitted since they are not part of our sample. The resulting ranking was divided into four quartiles arranged from best to worst positions (see Table 4.8).

Table 4.8 Spanish public universities' ranking classification

Ranking position	ARWU 2012	ARWU 2012 Only publics	Quartile
Universitat de Barcelona (UB)	1	1	1rst quartile
Universidad Autonoma de Madrid (UAM)	2	2	
Universidad Complutense de Madrid (UCM)	3	3	
Universitat de Valencia (UV)	4	4	
Universitat Autonoma de Barcelona (UAB)	5	5	
Universidad Politecnica de Valencia (UPV)	6	6	
Universidad del Pais Vasco (EHU)	7	7	
Universidad de Granada (UGR)	8	8	
Universitat Pompeu Fabra (UPF)	9	9	
Universidad de Zaragoza (UNIZAR)	10	10	
Universitat Politecnica de Catalunya (UPC)	11	11	
Universidade de Vigo (UVIGO)	12	12	
Universidad de Sevilla (US)	13	13	2nd quartile
Universidad de Santiago de Compostela (USC)	14	14	
Universidad de Oviedo (UNIOVI)	15	15	
Universidad Politecnica de Madrid (UPM)	16	16	
Universidad de La Laguna (ULL)	17	17	
Universitat Rovira i Virgili (URV)	18	18	
Universidad de Castilla-La Mancha (UCLM)	19	19	
Universidad de Cantabria (UNICAN)	20	20	
Universitat d'Alacant (UA)	21	21	
Universitat de les Illes Balears (UIB)	22	22	
Universidad de Valladolid (UVA)	23	23	
Universidad de Murcia (UM)	24	24	

Ranking position	ARWU 2012	ARWU 2012 Only publics	Quartile
Universidad de Salamanca (USAL)	25	25	3rth quartile
Universidad de Alcala (UAH)	26	26	
Universidad de Malaga (UMA)	27	27	
Universidad Miguel Hernandez (UMH)	28	28	
Universidad de Cordoba (UCO)	29	29	
Universidad Carlos III de Madrid (UC3M)	31	30	
Universitat de Girona (UdG)	33	31	
Universidade da Coruna (UDC)	34	32	
Universidad de Extremadura (UEXT)	35	33	
Universidad de Jaen (UJAEN)	36	34	
Universidad de Huelva (UHU)	37	35	
Universitat Jaume I (UJI)	38	36	
Universidad Rey Juan Carlos (URJC)	39	37	4rth quartile
Universidad de Cadiz (UCA)	40	38	
Universidad Pablo de Olavide (UPO)	41	39	
Universidad Publica de Navarra (UNAV)	42	40	
Universidad de Almeria (UAL)	43	41	
Universidad de las Palmas de Gran Canaria (UPGC)	44	42	
Universitat de Lleida (UDL)	45	43	
Universidad Politecnica de Cartagena (UPCT)	46	44	
Universidad de Leon (ULEON)	47	45	
Universidad de Burgos (UBU)	50	46	
Universidad de La Rioja (UNIRIOJA)	51	47	

Source: Self-elaborated

5 Research design

Having reviewed the literature and put forward the objectives and research hypotheses, the purpose of this chapter is to define the methodology used in the empirical study with the aim of testing the hypotheses established in the model.

First, we must define the population, understood as the number of Spanish public university managers who are involved in the process of strategic decision making. To carry out this work, we suggest that it will be necessary to make explicit who constitutes our universe of analysis and then start to develop a database, because to date a census of the population to work with it is not available, so we must develop it through the information mainly gathered from the universities' websites. Thus, this database will be used to provide us with the universe size of Spanish public universities' senior managers.

Second, this database will also allow us to conduct a descriptive analysis of the main demographic and academic features and their different compositions that currently make up the Spanish public university managers (for example, type of collective, professional categories, knowledge areas, university, autonomous community, and so on). This information is unpublished now and it is necessary to collect those data from the identified universities. The exploitation of the resulting database will be conducted using statistical techniques for this type of descriptive analysis.

Finally, we explain how we carried out the sample selection, the process of developing the questionnaire, and the pre-test performed. Subsequently, we define and delimit the latent variables and measurement scales used in quantifying the variables that make up the proposed theoretical model. In the last part of this chapter, we provide an overview of the techniques used to analyse our research data (frequencies, contingency tables, the chi-square goodness-of-fit test, structural equation modelling, and latent class segmentation).

5.1 The context of strategic management in Spanish public universities

The preamble to the LRU[59] is interesting for understanding the concept of universities as the legislature intended to promote the adoption of University Reform Act "La Ley de 1983"[60]. This law assigns three basic functions to universities – scientific development, training, and extension of culture – to be achieved with the autonomy granted to them by the Constitution. At the same time, we emphasise that the law is structured by the idea that universities do not belong to the current members of the university community, because they are a public service of general interest. Social presence is introduced into each university through the creation of social councils.

In Spain, there are multiple universities, public and private, but an overwhelming majority of the first and many public institutions that are responsible for important decisions in universities: the Parliament, the Legislative Assemblies of the autonomous communities, the Education and Science Ministry, the education departments of the regional governments, and the university councils of some autonomous communities (CCAA).

[59] Ley de Reforma Universitaria (LRU).
[60] Ley Orgánica 11/1983, de 25 de agosto, de Reforma Universitaria.

There are 50 Spanish public universities, 2 of which are directly dependent on the Education Ministry and the remaining 48 of which have delegated their competences to their corresponding autonomous communities, a university system existing for each CCAA (Pérez & Peiró, 1999). Of this total, 47 are learning universities and just 1 is considered a special university (Michavila, 2012). As we have already mentioned, our research is directed towards the 48 cited Spanish public universities.

The most important single member of a university is the rector, who acts as the highest representative of the institution. There are, however, other government agencies, the functions of which are very important for the proper functioning of each university. The Spanish 2001 Organic Act on Universities (*Ley Orgánica de Universidades*, LOU) (which was amended by Ley Organica 4/2007) provides a set of **individual organs of government** for public universities:

- Rector (R, *Rector/a*): the highest academic authority of the university, holding its representation. The rector's main functions are exercising the direction, governance, and management of the university, developing lines of action approved by the relevant constituent bodies, and executing their agreements.
- Vice-rectors (VRs, *Vice-rectores/as*) are part of the Governing Council. Generally, they attend to an important area of university management, for example academic planning, international relations, or faculty planning.
- Secretary-general (SG, *Secretario/a General*).
- Managing director (G, *Gerente/a*). Management is one of the basic individual organs of government for public universities, which is responsible for managing the administrative and financial services of the university.
- Deans and school directors (DEs, *Decanos/as y/o Directores/as de Escuelas*) hold the representation of their centres and exercise their ordinary management functions.

- Heads of departments (DDs, *Directores/as de Departamentos*) hold the representation of their department and exercise their ordinary functions of direction.
- Institute directors (Dis, *Directores/as de Institutos*) hold the representation of their institute and exercise their ordinary functions of direction.

In the text above, we highlight the fact that the the Spanish 2001 Organic Act on Universities (*Ley Orgánica de Universidades*, LOU) does not include those charges assigned directly by the rector, who undertakes the mission of developing and implementing decisions or strategic areas considered by the governing team. We grouped these charges under the term "deputy of the rector" (DR, *Delegados/as y/o Comisionados/as del Rector/a)*.

In the management team, we also considered vice-managers (VGs, *Vice-gerentes/as*) and area directors (DAs, *Directores/as de Áreas*).

As **collegiality organs**, we selected those who have a society relation:

- The social council, because it represents the participation of society in the university and the element of interaction between society and university. We only selected those not directly linked to the institution but related to the cultural, economic, and social life of the university environment:[61] president (PCS, *Presidente/a del Consejo Social*), vice-president (VCS, *Vice-presidente/a del Consejo Social*), secretary-general (SCS, *Sectretario/a del Consejo Social*), external counsellors (MCSs, *miembros externos del Consejo Social*), and others (i.e. alumni association chairpersons (OEXT)).
- The university ombudsman (DU, *Defensor/a universitario*), because its mission is to address complaints and grievances, intervene in seeking solutions to

[61] External actors refer to actors who normally do not work in the institution (Bjørkquist, 2008).

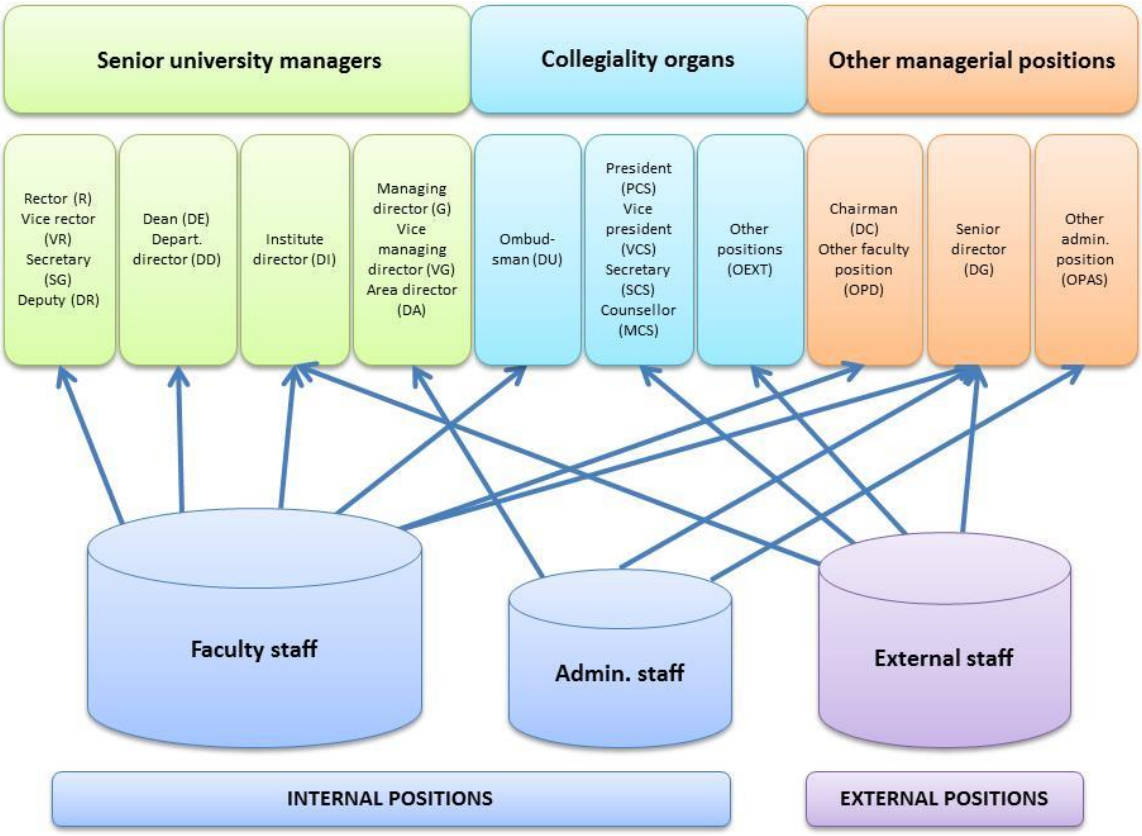
individual or collective problems, and propose improvements to the existing standards.

As other individual and collective peripheral organs, we selected the following:

- The director's chair at the university (DC, *Directores/as de cátedras*).
- Directors or presidents of peripheral foundations, associations, and science parks (DGs, *Directores/as de fundaciones, parques científicos y asociaciones*).
- University presidents' unions (OPDI, OPAS, *Presidentes/as de sindicatos*).

From this classification, we clustered the information gathered from senior university managers into three different typologies –faculty, administrative, and external staff– the first two being internal positions and the last external ones (see Figure 5.1).

Figure 5.1 Spanish university managers' map



Source: Self-elaborated

As we commented previously, currently there is no database of Spanish public universities from which to obtain information about the existence of university managers' charges. We gathered this information by building our own database through collecting the information from the university websites, obtaining a database with a total of 7,130 observations. This proces was carried on five months. In the Table 5.1 following graphs, we can see the total observations for each type of university strategic position considered in our study. For more information about university and autonomous community distributions, see Annex II; Table AII.1.

Table 5.1 Frequency distribution of the universe

University Managers	Frequency	Percentage
Department head	2,396	33.6%
Institute director	698	9.8%
Dean	686	9.6%
External counsellors	666	9.3%
Deputy of rector	567	8.0%
Chair director	538	7.5%
Area director	444	6.2%
Vice-rector	399	5.6%
Directors or presidents	186	2.6%
Vice-managing director	81	1.1%
Other faculty	80	1.1%
Other staff administration	65	0.9%
Managing director	48	0.7%
Rector	48	0.7%
Secretary-general	48	0.7%
Social council president	47	0.7%
Ombdusman	45	0.6%
Social council secretary	44	0.6%
Other external members	31	0.4%
Social council vice-president	13	0.2%
Total	**7,130**	**100.0%**

Source: Self-elaborated

From the data, we can see that the top management of the strategic decisions lies with faculties (76.4%), department directors achieving the most prominent percentage of the population considered in the study (33.6%).

Following the items considered in the Ministry of Education reports, we introduced for each observation the variables for which their information is available on the Internet: gender, faculty category, university structure formed by faculty and administration staff – both as internal human resources of the organisation, and on the other hand, people outside the university and, knowledge area.

From the data, we highlight the fact that the senior management of universities is made up of male faculty civil servants (72.5%), full professors (CU), and associate professors (TU)[62] (98.1%) from among the different knowledge areas, the greatest one being the social science area (30%) and the lowest one health science (11.7%). The profile of the universe is show in Table 5.2.

Table 5.2 Universe characteristics[63]

By respondent's gender (N=6,870)			**By respondent's faculty category (N=4,337)**		
Male	4,976	72.5%	CU (full professor)	1,753	40,4%
Female	1,894	27.5%	TU (associate professor)	2,115	48,8%
			Others	469	10,8%
By respondent's structure (N=6,870)			**By respondent's knowledge area (N=5,348)**		
Faculty	5,285	76.9%	Social science	1,608	30.1%
Administrative Staff	654	9.5%	Science	1,210	22.6%
External members	931	13,6%	Engineering & Architecture	1,064	19.9%
			Humanities	840	15.7%
			Health science	626	11.7%

Source: Self-elaborated

[62] CU-Catedrático de Universidad; TU-Titular de Universidad.

[63] N is different at the target population of the study (N=7,130) because not were achieved to gather the information for all the population.

If we analyse the distribution of the university managers' positions within each university structure (faculty, administration staff, and external people), we can observe that in the faculty group the heads of departments occupy the major faculty managerial position, while area directors and external counsellors occupy the staff managerial and external members' managerial position.

To summarise, from our collected data, the profile of the senior management of Spanish public universities is largely reflected in the male figure of a civil servant university professor. Looking at the distribution by autonomous community we denote that a 61.7% lies in only 4 of the 17 existing Spanish CCAA -Madrid, Valencia, Andalucia and Cataluña- (Group 1 of our cluster, see chapter four table 4.7).

5.2 The sample and data collection

After analysing the Spanish university management context in which the study sample is immersed, in the second part of the chapter we will proceed by exposing the way in which we carried out the study, determining the population universe, the sampling procedure used, the design and content of the questionnaire, and the pre-test performed.

5.2.1 Constructing an accurate map of Spanish public universities' stakeholders

To carry out a stakeholder classification, we conducted a thematic analysis from secondary data sources, based primarily on website information. The aim was to identify the stakeholders' importance given by each Spanish public university. Thus, the content analysis of 48 public universities' web pages consisted of searching for information to identify those stakeholder groups that are most cited on the websites.

Furthermore, the in-depth analysis of universities' websites aimed to search for the content and typology of stakeholders' information and in turn, the similitudes and differences among website information on stakeholders.

As we explained in Chapter 3 Section 3.3.3, the map of Spanish public universities'stakeholders has been developed through a critical analysis of the previous literature, and we complemented it with information from the main pages of the Spanish university sector as well as the websites of Spanish public universities. Once the variables and sub-variables had been identified and codified (see Table 5.3), we proceeded to gather information related to these observations through the information identified on the universities' websites.

Table 5.3 Spanish public university stakeholders

Stakeholders	Variable code	Categories	Sub-variable code
University based stakeholders	1	Senior managers	1
		Employees	2
		Governing bodies	3
		Advisory bodies	4
		Working committees	5
		Trade unions	6
Academic & research & knowledge transfer stakeholders	2	Faculty and research staff	7
		I+D+I agents and university's transfer agents	8
		I+D+I and transfer agents of Spanish system	9
		I+D+I agents of both european and international	10
		Agents to promote the innovation	11
		Clusters and lobbies	12
		University alliances	13
		Social networks	14
		Patrons (individuals/organisations)	15
Local stakeholders	3	Community	16
		Governing autonomies	17
		Local government regulators entities	18
		Local non-government regulators entities	19
		Local suppliers	20
		Local competitors	21
		Local clients	22

Stakeholders	Variable code	Categories	Sub-variable code
		Local media	23
National stakeholders	4	State government	24
		National government regulators entities	25
		National non-government regulators entities	26
		National suppliers	27
		National competitors	28
		National clients	29
		Financial intermediaries	30
		National media	31
International stakeholders	5	European government	32
		European government regulators entities	33
		European non-government regulators entities	34
		European and international suppliers	35
		European and international competitors	36
		European and international clients	37
		Financial intermediaries	38
		European and international media	39
Stakeholders students	6	Direct students funders	40
		Prospective students	41
		Currents students	42
		Alumni	43
		University students entities	44
		Students associations & organisations	45
		Students networks	46

Source: Self-elaborated

The data collection started by gathering the web information appearing within the website. The gathering of information was started at each university homepage and limited to two clicks from this initial page. Each item that it was identified as a stakeholder category it was recoded on value 1 and accounting into their sub-variable. This process was repeated for each of the 48 Spanish public universities.

Since all the data were introducing into database subsequently was analysed by Excel software. Through this analysis, we identified the frequencies and categorisations of the salient Spanish public university stakeholders.

5.2.2 The information collected on the population

This study chose Spanish public universities' managers as its unit of analysis because they are responsible for making university strategies related to the universities' three main missions: teaching, research, and transfer of knowledge. The criteria selected were to identify those informants who are sufficiently senior and have a grounded understanding of the organisational culture and the marketing and corporative practices towards a variety of actors (Table 5.4).

Table 5.4 Fieldwork data

Universe	Spanish public universities
Ambit	Spain
Analysis unit	Spanish public university managers (year 2013)
Information-gathering method	Questionnaire via email
Population census	7,130 individuals
Selection of universe elements	The questionnaire was sent to the entire population
Response	2,169 valid questionnaires for descriptive analysis (response rate: 30.42 %) 795 valid questionnaires for CBSEM and Latent Segmentation analysis (response rate: 11.15 %)
Fieldwork dates	Four mailings between September 2013 and January 2014

Source: Self-elaborated

The target population of this research consists of all the university managers of the 48 Spanish public universities, totalling 7,130 individuals. The sample was obtained from databases of Spanish public universities that are freely available on the main Internet

search engines. These websites provided public access to the mailing addresses of 7,130 key informants of university managers. All the potential respondents were invited to take part in the research.

From the final survey –7,130 key informants– 2,178 surveys were returned (we cleaned the data by excluding questionnaires with duplicate responses), resulting 2,169 valid cases for descriptive analysis, which means a 30.42% percent (a 1.82% of sampling error at 95.5% confidence level (Z=2, p=q=0.5)) Specifically, for covariance-based structural equation modelling (CBSEM) and latent segmentation analysis were removed all cases with missing values in the items used to measure the latent variables, leaving a total of 795 valid cases, which means a 11,15% valid response rate (a 3,28% of sampling error at 95% confidence level (Z=1,96, p=q=0,5)).

The profile of the sample is shown in Tables 5.5 and 5.6. The variables considered to shown the main sample characteristics are those considered as control variables (university size, seniority of the university, groups of autonomous communities, managers endogamy and, groups of ranking positions) and also, those considered as grouping variables in latent segmentation analysis (managers' knowledge area, managers' age, managers' gender and university structure).

Table 5.5 Sample characteristics by respondents (N=795)

By respondent's gender			**By manager's endogamy**		
Male	613	77.1%	Endogamy	552	69.4%
Female	182	22.9%	No endogamy	243	30.6%
By respondent's age			**By respondent's knowledge area**		
under 30 years	0	0.0%	Social science	278	35.0%
30 to 39 years	29	3.6%	Science	140	17.6%
40 to 49 years	281	35.3%	Engineering & Architecture	161	20.3%
50 to 59 years	361	45.4%	Humanities	110	13.8%
Over 60 years	124	15.6%	Health science	106	13.3%

Source: Self-elaborated

Table 5.6 Sample characteristics by universities (N=795)

By university's size			By university's seniority		
Large	379	47.7%	Senior	318	40.0%
Medium	184	23.1%	Modern	240	30.2%
Extra-large	169	21.3%	Young	237	29.8%
Small	63	7.9%			
By university's ranking positions			**By university's main structures**		
First quartile	314	39.5%	Faculty	658	82.8%
Second quartile	240	30.2%	Administration staff	107	13.5%
Third quartile	140	17.6%	External members	30	3.8%
Fourth quartile	96	12.1%			
No rank	5	0.6%			
By autonomous communities' cluster					
Group 1	503	63.3%			
Group 2	292	36.7%			

Source: Self-elaborated

We submit the above variable to chi-square goodness of fit test[64] to determine if it exists a deviation between the data gathered from the population and the data gathered from our sample (N=795) in relation to the control variables and also, as covariates to latent segmentation analysis (see Table 5.7). For the endogamy and age variables we can not carry out the test because we could not achieve the data for the population databases.

We can conclude, except for university structures, that the variables considered in our model fit university population. In general terms, for **university structure** we have received more answers from faculty and from administrative staff despite the lack of responses from external members. We argue that a possible cause of these results can be explained by the involvement and linkage that each group has with the university. Thus, the internal staff (faculty and administration staff) would show a stronger relationship to

64 For a chi-square goodness of fit test, the hypotheses take the following form.
H_0 (null hypothesis): The data are consistent with a specified distribution.
H_a (alternative hypothesis): The data are not consistent with a specified distribution.

topics relating to university's strategies, and therefore would also be better encouraged to respond to the present questionnaire.

Table 5.7 Chi-square goodness-of-fit test

Variable	χ^2	d.f.	Critical value	Confirmed hypotheses
University size	5.595	3	(probability ≤ 0.05) = 7.81	we do not reject the null hypothesis
Seniority of the university	0.906	2	(probability ≤ 0.05) = 5.99	we do not reject the null hypothesis
Groups of CCAAs	0.830	1	(probability ≤ 0.05) = 3.84	we do not reject the null hypothesis
Ranking positions	15.640	4	(probability ≤ 0.005) = 14.86	we do not reject the null hypothesis
Gender	8.463	1	(probability ≤ 0.002) = 9.55	we do not reject the null hypothesis
Knowledge area	18.640	4	(probability ≤ 0.001) = 18.47	we do not reject the null hypothesis
University structures	72.994	2	(probability ≤ 0.001) = 13.82	we reject the null hypothesis

Source: Self-elaborated

5.2.3 Survey instructions

A questionnaire covering the constructs shown in the conceptual model was drafted and pretested. To prepare the questionnaire, a pool of items relating to each construct was assembled and their relevance checked through discussions with different former university managers (ex-vice-rectors, ex-deans, ex-heads of departments, ex-managing directors). Thus, all the scale items were pretested before being mailed to the population of university managers. With this pre-test, we checked the smooth operation of the online survey and the respondents' understanding of all the questions, allowing us to obtain relevant information that we used to improve the definitive questionnaire.

Churchill (1979) argues that determining the form of response to individual questions is a crucial aspect of empirical data collection, so we decided to adopt the commonly used seven-point Likert-type scoring for all the items following reasons of reliability and

validity. Specifically, the questionnaire used a seven-point scale for respondents to indicate the extent (from "strongly disagree" to "totally agree") to which they agreed with the statements in the questionnaire. The respondents were required to answer all the questions according to their unbiased perception of the situation and not according to what they thought the desired answer might be. The questionnaire was in Spanish.

All the institutions and individuals remain anonymous, as required by the LOPD ("Ley Orgánica 15/1999 de 13 de diciembre de Protección de Datos de Carácter Personal"), and the respondents were assured of the anonymity of their responses. To minimise possible respondent bias, we did not use the term PSO or RSO, referring simply to *orientation to....* The survey was carried out in September 2013, with a follow-up mailing during the autumn.

Annex III contains the questionnaire used in this research in the Spanish language. The survey was divided into the following parts according to the chapter 4:

- **Socio-demographic and personality characteristics**. Personal information from the respondents (e.g. gender, age, type of university collective, professional categories, knowledge areas, university degree, country of degree, and development time in the managerial position) and some information about social networks concerning their use and frequencies.
- **External institutional antecedents**. This part included questions related to the external institutional factors, including a multi-item scale to measure the level of mimetic factors.
- **Internal organisational antecedents**. This part included questions related to the emphasis of the university management and the cohesion among different universities' basic structure, as well as the traditional culture of Spanish universities and their complexity.

- **Aspects relating to the responsive stakeholder orientation**. This part included scales to measure the level of RSO in Spanish universities.
- **Aspects relating to the proactive stakeholder orientation**. This section included scales to measure the level of PSO in Spanish universities.
- **Aspects relating to university performance measures**. This part included multi-item scales to measure the level of performance relating to stakeholders' satisfaction, resource acquisition, and reputation.

5.3 The method of elaboration of the construct scales

The nature of the theoretical proposed model combines several interrelationships among latent variables, because they cannot be observed directly and may only be approximated through the measurement of other variables that are likely to be observed.

As Hair et al. (2006) highlight, a good measurement theory is a necessary condition to obtain useful results. Hypothesis tests involving structural relationships among constructs will be no more valid than the measurement model explaining how these constructs are built. In this sense, it is necessary to invest significant effort in making sure that the measurement quality will enable us to draw valid conclusions.

As we discussed in the theoretical analysis, the concepts that explain the antecedents, RSO, PSO, and consequences of Spanish public universities are complex and cannot be measured directly. Therefore, we must proceed to the instrumentalisation of constructs or latent variables, which are measured by various indicators.

More specifically, a construct should be modelled as having reflective indicators if the following conditions prevail: (a) the indicators are manifestations of the construct, (b) changes in the indicators are not expected to cause changes in the construct, (c) changes in the construct are expected to cause changes in the indicators, (d) the indicators necessarily share a common theme, (e) eliminating an indicator does not alter the

conceptual domain of the construct, (f) a change in the value of one of the indicators is necessarily expected to be associated with a change in all of the other indicators, and (g) the indicators are expected to have the same antecedents and consequences (Burke, Mackenzie & Podsakoff, 2003).

For the elaboration of the construct scales, we followed the methods of Churchill (1979), Clark and Watson (1995), and Netemeyer et al. (2004)[65]. In turn, we also used content analysis tools to be consistent with the validity and reliability of the methods most commonly used in the literature [66] (Short, Broberg, Cogliser & Brigham, 2010).

In more detail, in the first stage, according to the literature review, we determined and defined a preliminary proposal for dimensions that conform to the proposed constructs. Afterwards, we made the item generation, reduction, and verification, through the pilot study, to different management positions. The purpose was to obtain valid constructs, with the accuracy level required for the factors and items that make them up, representing these theoretical concepts. In the second phase, we developed a questionnaire for collecting data.

5.3.1 The procedure for scale development

A construct is operationalised by selecting its measurement scale items and scale type. In survey research, operationalising a construct often involves a series of scale items in a common format, such as a Likert scale (Hair et al., 2006).

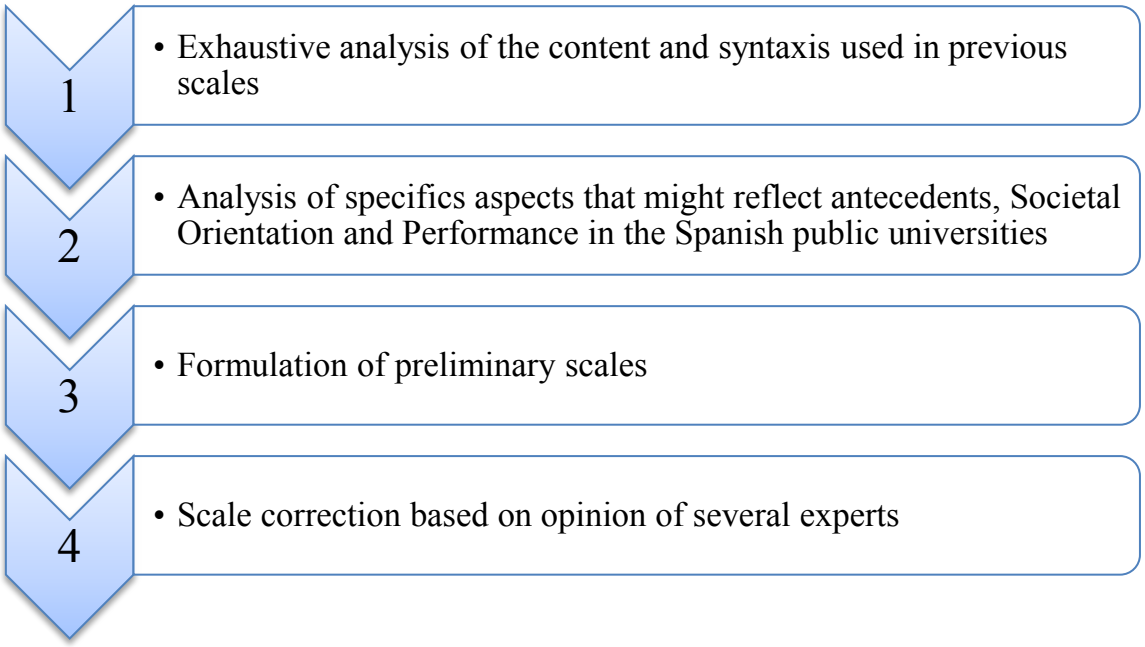
To develop the construct scales in the Spanish public university context, we followed the process shown in Figure 5.2. In a sequential form, the following stages were covered:

[65] Applied in previous studies, in which similar constructs are identified, such as Kang and James (2007), Modi and Mishra (2010), Narver and Slater (1990), Narver et al. (2004), and Rivera-Camino and Ayala (2009).

[66] Reliability refers to the internal consistency of the measure. If found to be free of random errors, it provides stable and consistent results. Validity refers to the degree to which a measurement instrument measures what it actually purports to measure. It is the criterion used to assess whether the result achieved in the research is appropriate.

- Stage 1. Exhaustive analysis of the content and syntax used in SO scales, performance, and antecedents in previous published works. Following Clark and Watson (1995), to articulate the basic constructs as clearly and thoroughly as possible, it is necessary to review the relevant literature to see how others have approached the same problem.
- Stage 2. Analysis of specific aspects that might reflect the level of RSO, PSO, performance, and antecedent factors in the university context, the analytical unit being the university managers of the various organisational university structures.
- Stage 3. The formulation of preliminary scales, taking into account the previous considerations.
- Stage 4. Presenting the original proposals for consideration by various ex-university managers, adjusting the scales to their comments and opinions.

Figure 5.2 The process established to develop scales



Source. Adapted from, Flavián and Lozano (2006)

As Clark and Watson (1995) highlight, a literature review will serve to clarify the nature and range of the content of the target construct and may also help to identify problems with the existing measures that can then be avoided in the scale. Finally, we also searched through the review to determine whether the proposed scales were actually needed. This contribution was important in developing the scales used in our study because of the variety of measures employed to define the constructs in the context of NPOs in general and universities in particular.

In general, to define almost all the constructs for our study, we relied on existing scales. For some variables for which measurement scales are not available in the literature, we had to build them.

5.3.2 Instrument development and refinement of question items

According to the previous study by Flavián and Lozano (2006), the particular characteristics of our analytical context made necessary an *ad hoc* re-adaptation of the concept: specifically, the design of the scale and its contents, taking into account the plurality of beneficiaries of HE (students, companies, the administration, society) as much as the threefold objectives of teaching staff (teaching, research, and knowledge transfer).

To prepare the questionnaire, a pool of items relating to each construct was assembled and their relevance checked through discussions with senior academic university ex-managers who had developed different academic positions and also with other former university external charges.

Following Jaworski and Kohli (1993), we adopted four phases to develop the scales:

- First, we generated a large pool of items for each of the constructs included in the thesis. From this pool, a subset was selected using the criteria of uniqueness and the ability to convey the informants' responses.

- Second, the items were tested for clarity and appropriateness with former university managers. The informants were asked to complete a questionnaire that included the items and to indicate any ambiguity or other difficulty they experienced in responding to the items, as well as offering any suggestion that they deemed appropriate. Based on the feedback received from the managers, we eliminated, modified, and, if necessary, developed additional items.
- Third, we presented the scales resulting from the previous step to marketing experts and asked them to evaluate critically the items from the standpoint of domain representativeness, item specificity, and clarity of construction. Based on the detailed critique received, we eliminated or revised items to improve their specificities and precision.
- Fourth, and finally, we subjected the pre-test to 10 other former university managers. At this stage, we expected few concerns to be raised and minor refinements to be made.

To capture the model constructs, we generated a list of items based on the literature (see Stage 1, Figure 5.2). As we explained in Chapter 4, we gathered strategic orientation information items from various sources: (1) components of the MO's non-profit and university contexts, (2) components of the SO's non-profit context, and (3) the proactive and responsive market orientations.

This resulted in 89 items reflecting various facets and meanings of the constructs (see Table 5.8). In agreement with Modi and Mishra (2010), our intention in generating a large sample of items was to ensure sufficient breadth of content and an adequate pool of items within each of the theoretical components. The items were worded as much as possible to be understandable to the respondents (Short et al., 2010).

We conducted several rounds of rigorous editing to reduce the large poll of items to a manageable number (see Stage 2, Figure 5.2). We deleted items following Podsakoff,

MacKenzie, Lee and Podsakoff's (2003) procedure (see Section 5.3.3). This left us with 59 items (see Table 5.8).

In drawing up the constructs, we followed the recommendations of Rossiter (2002) as regards the fact that the conceptual definition of the construct should specify the object, the attribute, and the trait entity, because the constructs are not the same from different trait entities' perspectives. Consequently, we settled on the conceptual definition of a stakeholder orientation: the Spanish public university as the object, the stakeholder orientations as the attributes, and the senior university managers as the trait entity.

The questionnaire was subject to two pre-tests for the purposes of content validation. Content validity refers to the extent to which the items of a scale represent some theoretical contents of the domain of interest (Modi & Mishra, 2010). The content validity is reflected in the quality of the procedures followed in developing the scale by strictly following the literature's scale development (Churchill, 1979; Netemeyer et al., 2004). We also requested senior university managers to review our final list of scales. They found them to quite relevant to and adequate for the constructs.

To assess how each of the items selected would be understood in a field setting, first we undertook a pre-test with three former senior university managers. Further we submit the resulting questionnaire to marketing experts. Finally, a second pretest, with the questionnaire already in an online format, was completed by ten former university managers belonging to the target population, who carried out the final content validation of the instrument.

We personally administrated the questionnaires and interviewed the participants to understand which items were confusing, ambiguous, irrelevant, or otherwise difficult to answer (see Stage 4, Figure 5.2). Based on the feedback we deleted 3 items, and added 1 item. Finally, we had 57 items capturing the different constructs reflected in the theoretical model (see Table 5.8).

Finally, the questionnaire was mailed according to the database by institutional/personal university manager email to all the members of the selected universe with a letter explaining the thesis's objective (Annex IV).

Table 5.8 Process and treatment of construct items

CONSTRUCTS	Stage 1 Total items identified from the literature	Stage 2 Survey items Initial proposal	Stage 3 Survey items Definitive proposal
MIMETIC FACTORS	5	4	4
TRADITIONAL CULTURE	9	9	7
COMPLEXITY	4	4	4
EMPHASIS	4	4	4
COHESION	5	5	5
RMO	10	10	10
PMO	8	8	8
BENEFICIARY	24	4	4
RESOURCE ACQUISITION	10	6	6
REPUTATION	10	5	5
TOTAL	**89**	**59**	**57**

Source: Self-elaborated

More precisely, the questionnaire was sent out to the 48 selected universities and distributed by email in July 2013 to all university management staff with the instrument due to be completed online. The 2,180 questionnaires were received between July 2013 and January 2014. On the deadline expiring, we analysed the data collected and verified that there was no undue bias, shortcoming, or problem in the data completion process.

5.3.3 Techniques for controlling common method biases

It is acknowledged that different method biases influence the response process in behavioural and organisational research, existing two primary ways to attempt to control these potential influences: the design of the study's procedures and/or statistical controls. Thus, the key to controlling method variance through procedural remedies is to identify what the measures of the predictor and criterion variables have in common and eliminate or minimise it through the design of the study (Podsakoff et al., 2003).

Since, in our research, it was not possible to obtain data from different sources, we needed to follow another potential procedural remedy proposed by Podsakoff et al. (2003). One method is to allow the respondents' answers to be anonymous. Another consists of reducing the method biases through the careful construction of the items themselves. In that sense, we first avoided defining items by means of ambiguous or unfamiliar terms and vague concepts; second, we kept the questions simple, specific, and concise; third, we avoided double-barrelled questions; fourth, we decomposed questions relating to more than one possibility into simple, more focused questions; and finally, we avoided complicated syntax. Specifically, in our study, the major difficulties in the process of obtaining the items were, on the one hand, excessively overlapping items that needed to be combined and, on the other hand, items that were deemed to lack relevance, which were removed altogether.

Despite the use of procedural techniques, such as the design of the study's procedures being able to reduce or completely eliminate the method biases' influence on the response process, an additional statistical control was also employed. Following Podsakoff et al. (2003) and given that the predictor and criterion variables could not be obtained from different sources or contexts, but the source of the method bias could be identified and a valid scale to measure it existed, we tried to control statistically for the effect of these biases using the single-specific-method-factor approach or the multiple-specific-method-factor approach.

5.3.4 The measurement of the latent variable: The scales used

The objectives of our study brought us to the instrumentalisation of all the latent variables involved in our theoretical model, based on the relationships and hypotheses proposed in the previous chapter.

Table 5.9 lists the different items used to measure the antecedent constructs through mimetics of the Spanish public universities. Tables 5.10, 5.11, 5.12 and, 5.13 collects

items to measure the internal barriers as the culture, the complexity, and the internal inhibitors through the role of managers, as well as the cohesion between organisational structures. Table 5.14 measures the RSO and Table 5.15 the PSO. Finally, Tables 5.16, 5.17 and, 5.18 contains the various items used to measure the performance constructs: stakeholder satisfaction, acquisition of resources, and reputation.

The scales used to measure the antecedents to stakeholder orientation

To measure the antecedent effects, we requested university managers to assess the impact that certain factors have on the implementation and development of stakeholder orientations. In our study, we highlight mimetic factors, the culture of the university, the complexity of the university, the managers' emphasis, and the organisational cohesion.

Mimetic pressures involve the perception of the need to copy the successful actions of other universities. DiMaggio and Powell (1983) find that managers tend to adopt the ideas and practices of similar organisations, especially when their organisations are embedded in uncertain environments. Mimetic pressure is also adapted by Bennett and Kottasz (2011).

Table 5.9 Hypothetical scale of mimetic factors

	Item	Measure	Source
MF1	It is important that our university engages in the same orientations towards society activities/services as other similar universities	Seven-point Likert scale (from "strongly disagree" to "totally agree")	Bennett & Kottasz (2011)
MF2	It is necessary that the different stakeholders perceive that we orient our activities/services similarly to other universities		Bennett & Kottasz (2011)
MF3	The likelihood of failure of a strategy decreases if we apply similar strategies to those in other universities		Bennett & Kottasz (2011)
MF4	Implementing similar strategies in relation to stakeholder orientation is likely to ensure that they are valid and appropriate		Bennett & Kottasz (2011)

The construct *traditional culture of the university* is a new proposal because it does not exist explicitly in the previous literature. The legacy of traditions and organisational cultures restricts the university autonomy necessary to be able to adopt the concepts of

RSO and PSO. The proposed items were extracted from the work of Mora and Vidal (2000). These authors identify those aspects relating to the tradition and culture of the Spanish public university, which hinder their adaptation to the new European HE scenario.

Table 5.10 Hypothetical scale of traditional culture of the university

	Item	Measure	Source
CULT1	The complexity of the university is solved with the application of bureaucratic methods, to restrict university autonomy	Seven-point Likert scale (from "strongly disagree" to "totally agree")	Mora & Vidal (2000)
CULT2	The faculty expresses reluctance to introduce interference from external agents into the present system of university organisation		Mora & Vidal (2000)
CULT3	The civil servant faculty perceive themselves as belonging more to a part of public administration than to an institution that serves the community		Mora & Vidal (2000)
CULT4	Faculty see themselves as professionals who work AT a university, instead of FOR a university		Mora & Vidal (2000)
CULT5	The faculty must have the freedom to guide their teaching and research activities		Mora & Vidal (2000)
CULT6	The faculty tend to feel more strongly linked to their discipline than their university		Mora & Vidal (2000)
CULT7	The existence of multiple interests (teaching, research, knowledge transfer) makes it harder to organise and coordinate tasks		Mora & Vidal (2000)

As Mainardes et al. (2011) identify in their research, the construct *complexity of the university* is a common characteristic of the organisations with dispersed power. However this fact, we do not identify in the previous literature an existing scale for measuring this concept, so we propose to build it. The complexity inherent in institutions of HE makes it difficult to implement and follow up the RSO and PSO concepts. Patterson (2001) suggests that attempting to derive a clear and meaningful statement of institutional university goals is invariably complicated by a number of factors. In this regard, he identifies several problems and consequences relating to the election of universities' strategic objectives.

Table 5.11 Hypothetical scale of university complexity

	Item	Measure	Source
COMP1	There is a difficulty in goal alignment caused by the existence of "covert" as well as "overt" university goals	Seven-point Likert scale (from "strongly disagree" to "totally agree")	Patterson (2001)
COMP2	There is a difficulty in the alignment of objectives between "outcome" goals concerning how the college serves the needs of society and "process" goals relating to the internal functioning		Patterson (2001)
COMP3	Given the disparity of needs that have to be satisfied, the university is involved in multiple activities for multiple stakeholders		Patterson (2001)
COMP4	The problem of prioritising the requirements of multiple stakeholders is resolved through political decisions that meet a strategy of the university		Patterson (2001)

The role of managers appears as one of the influential factors for deploying and pursuing an MO in NPOs (Cervera et al., 2001; Flavián & Lozano, 2006; Jaworski & Kohli, 1993). The construct *top management emphasis* was adapted from Cervera et al. (2001), which is a scale that was previously adapted from Jaworski and Kohli (1993).

Table 5.12 Hypothetical scale of top management emphasis

	Item	Measure	Source
EMPH1	I often tell people in my influence sphere that the success of their activities/services depends on their ability to adapt them to the students, employers, and education institutions, present and future	Seven-point Likert scale (from "strongly disagree" to "totally agree")	Cervera et al. (2001) adapted by Jaworsky & Kohli (1993)
EMPH2	I regularly encourage people around me to be sensitive to the activities/services offered by other public universities		Cervera et al. (2001) adapted by Jaworsky & Kohli (1993)
EMPH3	I keep telling people around here that they must gear up now to meet the future needs of our students, employers, and education institutions		Cervera et al. (2001) adapted by Jaworsky & Kohli (1993)
EMPH4	I believe that serving the needs of our students, employers, and educational institutions is a priority for our university		Cervera et al. (2001) adapted by Jaworsky & Kohli (1993)

Cohesion between the basic structures encourages communication within the organisation, reducing the levels of conflict that could arise in the implementation and

monitoring of an MO (Cervera et al,. 2001; Flavián & Lozano, 2006; Jaworski & Kohli 1993). The construct *cohesion* was adapted from Flavián and Lozano (2006).

Table 5.13 Hypothetical scale of university cohesion

	Item	Measure	Source
COH1	It is easy to talk to different members of the institution, regardless of their level or position within the institution	Seven-point Likert scale (from "strongly disagree" to "totally agree")	Flavián & Lozano (2006)
COH2	There are ample opportunities to find channels and places to exchange opinions in an INFORMAL way		Own proposal
COH3	There are ample opportunities to find channels and places to exchange opinions in a FORMAL way		Flavián & Lozano (2006)
COH4	In general, there is good communication between the different structures (departments, institutes, faculties, management areas, etc.)		Flavián & Lozano (2006)
COH5	There is a good working relationship between the organisational structures that are part of the institution		Flavián & Lozano (2006)

The responsive stakeholder orientation and proactive stakeholder orientation scales

As we have discussed in previous chapters, in the previous literature, proposals do not exist to measure the reactive and proactive SOs in the university context separately. Accordingly, to develop the scales, we used Voola and O'Cass (2010) scale, which relies on the original Narver et al. (2004) scale.

An organisation with a RSO is focused on understanding the explicit needs of those university stakeholders associated with their activities and/or services (academic, research, and knowledge transfer), designing services that allow them to find those needs and identify them regularly.

Table 5.14 Hypothetical scale of university responsive stakeholder orientation

	Item	Measure	Source
RSO1	Our main objective is to understand the stakeholders' explicit needs of our services and activities	Seven-point Likert scale (from "strongly disagree" to "totally agree")	Voola & O'Cass (2010)
RSO2	We constantly monitor our level of commitment to serving the explicit needs of our stakeholders		Narver et al. (2004); Voola & O'Cass (2010)
RSO3	We freely communicate information about our successful and unsuccessful experiences with stakeholders across all structures' functions		Narver et al. (2004); Voola & O'Cass (2010)

	Item	Measure	Source
RSO4	To achieve competitive advantages, we design strategies based on information obtained from the explicit needs of our stakeholders		Narver et al. (2004); Voola & O'Cass (2010)
RSO5	To evaluate the services performed for our stakeholders, we measure them systematically and frequently		Narver et al. (2004); Voola & O'Cass (2010)
RSO6	We are more focused on regulatory agencies, local community, and media than other public universities		Narver et al. (2004); Voola & O'Cass (2010)
RSO7	We report regularly at all levels the degree of satisfaction among different stakeholders		Voola & O'Cass (2010)
RSO8	We regularly analyse the viability/utility of our activities through the satisfaction of our stakeholders		Voola & O'Cass (2010)

However, a PSO is one in which latent needs are those additional expectations of stakeholders who may not be aware of them.

Table 5.15 Hypothetical scale of university proactive stakeholder orientation

	Item	Measure	Source
PSO1	To generate competitive advantages, we continuously try to discover the additional needs (expectations) of stakeholders	Seven-point Likert scale (from "strongly disagree" to "totally agree")	Narver et al. (2004); Voola & O'Cass (2010)
PSO2	We help our stakeholders to anticipate developments in their social environment		Narver et al. (2004); Voola & O'Cass (2010)
PSO3	We brainstorm on how our activities/services are being sensed and used by different stakeholders		Narver et al. (2004); Voola & O'Cass (2010)
PSO4	We develop new formulas of activities and services even at the risk of making our own activities/services obsolete		Narver et al. (2004); Voola & O'Cass (2010)
PSO5	We search for opportunities in areas where stakeholders have greater difficulty in expressing their expectations		Narver et al. (2004); Voola & O'Cass (2010)
PSO6	We work very closely with lead users who try to recognise stakeholders' expectations months or even years before the majority of society recognises them		Narver et al. (2004); Voola & O'Cass (2010)
PSO7	We extrapolate key expectations to increase the visibility of what current users will need in the future		Narver et al. (2004); Voola & O'Cass (2010)

The scales used to measure organisational performance

To measure construct performance and following Jaworski and Kohli (1993), we employed the judgemental measure. In that sense, we asked informants for their assessment in relation to the satisfaction of the university beneficiaries, the ability of the university to obtain resources, and the reputation of the university.

To develop a measurement scale of beneficiary satisfaction, we relied on the constructs used by Duque-Zuluaga and Schneider (2008) and Modi and Mishra (2010). The last item is our own proposal.

Table 5.16 Hypothetical scale of beneficiary satisfaction

	Item	Measure	Source
SAT1	The level of beneficiary satisfaction with the types of activities/services our university provides	Seven-point Likert scale (from "very unsatisfactory" to "very satisfactory")	Modi & Mishra (2010); Duque-Zuluaga & Schneider (2008)
SAT2	The level of beneficiary satisfaction with the quality of the activities/services that our university provides		Modi & Mishra (2010); Duque-Zuluaga & Schneider (2008)
SAT3	The degree to which our university activities/services have achieved beneficiary satisfaction		Modi & Mishra (2010)
SAT4	Indicate your assessment regarding the level of university involvement with local, regional, and business communities		Own proposal

To develop a measurement scale for the acquisition of financial resources, we relied on the construct used by Duque-Zuluaga and Schneider's (2008) efficiency items. The last item is from Modi and Mishra (2010) and assesses the effectiveness.

Modi and Mishra (2010) asked respondents to indicate how their *organisations* had performed over the two years, but we decided to use five years (Padanyi & Gainer, 2004) because in the context of Spanish public universities two years is a short time period to appreciate some important changes in performance.

Table 5.17 Hypothetical scale of the acquisition of financial resources

	Item	Measure	Source
ACR1	Ability to manage the financial resources at its disposal effectively	Seven-point Likert scale (from "very unsatisfactory" to "very satisfactory")	Duque-Zuluaga & Schneider (2008)
ACR2	Ability to manage and further develop its usual activities/services in the ordinary case of a reduction in regular funding		Duque-Zuluaga & Schneider (2008)
ACR3	Possession of assets that can be sold in the case of scenarios of strong shocks		Duque-Zuluaga & Schneider (2008)
ACR4	Stability of acquisition budget revenues		Duque-Zuluaga & Schneider (2008)
ACR5	Positive changes in revenue related to financing specific projects/programmes with regard to the situation 5 years ago	Seven-point Likert scale (from "very poor" to "really good")	Duque-Zuluaga & Schneider (2008)
ACR6	Increase in the number of public and/or private actions of funders with regard to the situation 5 years ago		Modi & Mishra (2010)

To develop a measurement scale for reputation, we relied on the construct used by Modi and Mishra (2010). The last item is from Aaker and Shansby (1982).

Table 5.18 Hypothetical scale of university reputation

	Item	Measure	Source
REP1	Our university's reputation amongst other Spanish public universities for attracting financial resources	Seven-point Likert scale (from "worse" to "better")	Modi & Mishra (2010)
REP2	Our university's reputation amongst other Spanish public universities for activities/services' delivery		Modi & Mishra (2010)
REP3	Our university's reputation amongst other Spanish public universities for attracting skilled staff		Modi & Mishra (2010)
REP4	Our university's reputation amongst other Spanish public universities for achieving its main objectives		Modi & Mishra (2010)
REP5	Our university's image amongst other Spanish public universities for associating a particular characteristic attribute		Aaker & Shansby (1982)

5.4 Techniques for analysis in data processing

To achieve the objectives of the empirical research, the quantitative design and the research approach adopted the use of the following techniques, which are divided into three categories:

- **Descriptive analyses**. The use of descriptive univariate analysis (percentages) to characterise the universe and sample of HEIs' senior management and bivariate analyses (contingency tables) to analyse possible trends.
- **Structural equation modelling**. This technique was used to test the hypotheses of our theoretical model and the analysis of control variables in the relationships proposed by employing multi-group structural equations.
- **Latent class segmentation analysis**. This was carried out to determine the existence or otherwise of heterogeneity among management positions.

Below we describe each technique and its adequacy in relation to the goals that we wanted to achieve.

5.4.1 Univariate and bivariate analysis

In the first chapter, we explained the empirical research objectives by proposing to achieve the following:

- To identify the main features of the Spanish public university managers' population as well as the main features from the responses gathered from the survey distributed.
- To analyse the differences or similarities among diverse demographic and personal characteristics among observations gathered from the survey.

To achieve these objectives, we employed **univariate descriptive analysis** (percentages) of the variables used to characterise the university managers from the survey respondents. In order to verify whether the observed frequencies differ significantly from the expected frequencies, we conducted a chi-square goodness-of-fit test. A chi-square is used to analyse categorical data and compares observed frequencies with expected or predicted frequencies. For a chi-square goodness-of-fit test, the hypotheses take the following form:

H_0 *(null hypothesis): The data are consistent with a specified distribution.*

H_a *(alternative hypothesis): The data are not consistent with a specified distribution.*

Moreover, to add value to this investigation, we carried out a simultaneous analysis of two variables by comparing several explanatory variables to obtain more conclusive results. The goal was to verify whether a relationship exists between two specific variables. This may be motivated by a simple relationship between them, so that when one changes the other does too, in a certain sense. Specifically, the **bivariate technique** most commonly used for the type of scales in which the data (nominal and ordinal) are measured is the **contingency table**.

Thus, the analysis of two non-metric variables was carried out using contingency tables presenting the distribution of cases together in a limited number of categories. The aim was to check whether the behaviour results in the category of a variable are related to changes in another variable category: in other words, to test whether there are any relationships or associations between two variables. To verify whether the differences between the frequencies are statistically significant, we employed the test of independence or chi-square (χ^2).

The **test of independence or chi-square** determines whether there is a relationship or association between two categorical variables, but it does not indicate the extent or type of the relationship. This test is subject to contrasting the null hypothesis of independence (H_0) denoting the absence of a relationship between the variables. The alternative hypothesis is therefore that they are not independent, that is, that there is a relationship between them.

Given a contingency table with “f” rows and “c” columns, the frequency “nij” of the chi-square statistic is calculated. If the value of the statistic is greater than the value in the table chi-square distribution with (f-1) (c-1) degrees of freedom, the significance

level α, the null hypothesis is rejected and it is accepted that there are significant differences (alternative hypothesis H_1) (Grande & Abascal, 2009). That is, the behaviour of one variable is altered according to the categories of the other and, therefore, there is a relationship between them.

The uncertainty associated with the interpretation of any value obtained from the sample statistics after applying a particular statistical technique involves fixing in some cases and the assumption of certain levels of type error in others. To corroborate our findings, we chose the level of significance $\alpha = 0.05$. When conducting the hypothesis test, we tried to determine the probability of being wrong if we rejected the H_0 (error type I). Thus, in testing the hypotheses, we may make two types of errors:

Error type I: when we think that H_0 is not true and it is.

Error type II: when we think that H_0 is true and it is not.

Thus, the determination and fixing of the type I error, along with other considerations of sample size and effect size, determine the type II error (β) that is committed. To summarise, the relationship between these types of errors can be appreciated in Table 5.19.

Table 5.19 Choice of significance level

		Reality	
		True H_0	**True H_a**
Statistical Decision	**Accept H_0**	Correct Decision Confidence level Probability p=1- α	Type II Error Probability p= β
	Not accept H_a	Type I Error Confidence level Probability p=α	Correct Decision Contrast Potency Probability p=1- β

Source: Iacobucci (1994).

We carried out all of those analyses by employing the **SPSS (version 21)** statistical software.

5.4.2 Structural equation modelling

As we discussed in relation to the empirical objectives outlined in the introductory chapter, we aimed to develop a conceptual framework of Spanish public universities' stakeholder orientations – both the responsive and the proactive concept – by analysing and examining the empirical relationships between the antecedents and both the RSO and the PSO and to examine the empirical relationship between RSO, PSO, and university performance. Therefore, the first step was to choose the most appropriate statistical technique to achieve these objectives.

Structural equation modelling (SEM) is the only multivariate technique that allows the simultaneous estimation of multiple equations that represent the way in which constructs relate to measured indicator items as well as the way in which constructs are related to one other. The SEM techniques are used to test structural theories (Hair et al., 2006).

The adequacy of using structural equation modelling based on covariance

Recently, structural equation modelling (SEM) has arisen amongst the methodological tools as the dominant research paradigm in the management community today (Davcik, 2014). Such models have as a fundamental feature the ability to perform multiple regressions between variables and latent variables.

SEM is a multivariate technique that combines aspects of multiple regression and factor analysis to estimate a set of simultaneous dependency relationships among multiple variables. SEM constitutes an appropriate methodology for this approach as they allow the simultaneous estimation of influences between different variables (Flavián & Lozano, 2005).

Hence, SEM is a statistical methodology that enables the researcher to assess and interpret complex interrelated dependence relationships as well as to include the

measurement error in the structural coefficients (Hair, Anderson, Tatham & Black, 1998; MacKenzie, Podsakoff, & Jarvis, 2005).

Among the SEM, there are two possible methods:

- **Covariance-based structural equation modelling (CBSEM)**. These models estimate the parameters by minimising the discrepancies between the initial empirical data covariance matrix and the covariance matrix derived from the model and the estimated parameters. This approach also provides measures of overall goodness of fit that inform about the degree to which the hypothesised model fits the available data. When the need for theoretical justification is stressed, it can be emphasised that SEM is a **confirmatory analysis** guided more by theory than by empirical results (Hair et al., 2006).
- **Partial least squares (PLS**). This technique aims to predict the latent variables, and is not based on the covariance but supported by the estimation of ordinary least squares and principal component analysis (Cepeda & Roldan, 2004). The aim pursued by the PLS modelling is the prediction of the dependent variables, which results in an attempt to maximise the explained variance (R^2) of the dependent variables. This method is more appropriate for predictive applications and theory development (**exploratory analysis**) (Chin, Marcolin & Newsted, 2003).

The theoretical models establish relationships between constructs that can only be proven through observable estimate relationships between variables (Castro, Carrión & Salgueiro, 2007). However, according to some recent contributions (Diamantopoulos & Winklhofer, 2001; Edwards & Bagozzi, 2000; Mackenzie et al., 2005; Podsakoff, Shen & Podsakoff, 2006), in general, studies in the field of management are based on classical approaches, which are those that assume the direction of causality from a construct to its measures (reflective indicators). Even though this type of measurement

model is appropriate in many circumstances, it makes no sense for other situations (Bollen & Lennox, 1991). Hence, Castro et al. (2007) advise that failing the specification of the measurement model may have important implications for the validity of the conclusions reached in an empirical study.

Indicators reflect the unobserved theoretical construct to which they are linked. According to the relationships between variables, two types of indicators are distinguished: reflective and formative (Bollen & Lennox, 1991; Diamantopoulos & Winklhofer, 2001; Jarvis, MacKenzie & Podsakoff, 2003; MacKenzie et al., 2005).

- **Reflective indicators** (effects). A latent construct is assumed to cause the observed variation in the measures. Therefore, the indicators reflect the latent construct that they represent. Reflective models, called primary factor or common latent constructs, rely on the classical test theory and each measure is reflective, as a manifestation of the construct being assessed (Podsakoff, Podsakoff & Shen, 2006). Thus, the covariance amongst measures is explained by the variation in a common latent factor (MacKenzie et al., 2005). The causality of the reflective construct is directed from the latent construct to the indicators, with the underlying hypothesis that the construct causes changes in the indicators (Fornell & Bookstein, 1982; Edwards & Bagozzi, 2000; Jarvis et al., 2003).

- **Formative indicators** (causal). It is determined that the indicators or measures cause the construct. The second type of measurement model is the model of latent construct aggregate. Although the first references to it are found in Blalock (1964), this type of measurement model has only very recently begun to spread and be used (Bollen, 1989; Chin, 1998). In this case, indicators are seen as determinants or causes of the construct (MacCallum & Browne, 1993). The measures of this type of model are called formative (Chin, 1998; Fornell & Bookstein, 1982) or causal (Bollen & Lennox, 1991) indicators. Therefore,

> formatives measures commonly influence the latent construct. Thus, the meaning and content of the construct come from the formative indicators that comprise it (MacKenzie et al., 2005). Formative measures indicate that a latent variable is measured using one or several of its causes (indicators), which determine the meaning of that construct (i.e., Blalock, 1964; Edwards & Bagozzi, 2000; Jarvis et al., 2003).

A reflective measurement theory is based on the idea that latent constructs cause the measured variables and the error results' inability to explain these measures fully. A formative measurement theory is modelled based on the assumption that the measured variables cause the construct, not considered to be latent but rather viewed as indices whereby each indicator is a cause of the construct (Hair et al., 2006).

Between the reflective and the formative constructs exists an important theoretical and empirical difference, but many researchers do not pay appropriate attention to this issue and mistakenly specify the wrong measurement model (Castro et al., 2007; Davcik, 2014). It should be emphasised that CBSEM was originally designed to work with reflective indicators, while PLS allows the operation with types of indicators (reflective and formative).

CBSEM is considered a confirmatory method that is guided by theory, rather than by empirical results, because it tends to replicate the existing covariation among measures (Anderson & Gerbing, 1988; Diamantopoulos & Siguaw, 2006; Fornell & Bookstein, 1982; Hair et al., 2006; Reinartz et al., 2009; Wetzels, Odekerken-Schroder & Van Oppen, 2009), analysing how theory fits with observations and reality.

Therefore, due to the **confirmatory nature** of our research (we intended to analyse whether our theoretical model can be used to explain the improved performance in Spanish public universities) and the **reflective character** of our indicators, we used **CBSEM**.

Covariance-based structural equation modelling

The aim of the analysis performed by structural models is to find a model that fits the empirical data well enough to serve as a useful representation of reality. Thus, the behaviour of the observed variables could be explained by the cause–effect estimated in the model.

CBSEM focuses on the covariation among the variables measured or the **observed sample covariance matrix** (Hair et al., 2006), and is based on factors that tend to explain the covariance in the model (Davcik, 2014). CBSEM offers results regarding the causal relationships among variables that constitute the theoretical model proposal. The structural analysis was conducted using **EQS v.6.1** as the software package.

According to Hair et al. (2006), CBSEM is used to evaluate goodness of fit, which focuses on the minimisation of the discrepancy (differences) between the observed covariance matrix and the estimated covariance matrix. Its application is suggested to be appropriate for testing and confirmation when the prior theory is strong or when a good reason exists to do so.

Constructs themselves are not real (or tangible) in an objective manner, even though they refer to real-life phenomena (Nunnally & Bernstein, 1994). In other words, the relationship between a measure and a construct represents the relationship between a measure and the phenomenon, in which the construct is a proxy for the phenomenon that describes reality (Edwards & Bagozzi, 2000). To measure each of the latent variables, we developed scales for the constructs included in the proposed theoretical model (see Figure 4.3), which, as mentioned, are reflective. The scales are presented in Table 5.9 to Table 5.18.

The analysis proceeded in two stages, as recommended by Anderson and Gerbing (1988). In the first step, we carried out an **exploratory factor analysis** (EFA) to test the reliability and dimensionality of the scales and a **confirmatory factor analysis** (CFA)

to develop a measurement model that evidences an acceptable fit to the data. It is a depuration process of the measurement scales, to make them valid and reliable. Therefore, the main objective of the measurement model is to verify the suitability of the selected indicators in measuring the constructs of interest. In the second step, we modified the measurement model, so that it represents the (causal) theoretical model of interest (SEM). This theoretical model was tested and revised until we found a significant model that was theoretically and statistically acceptable.

Finally, since one of our goals was to examine whether there is a effect of certain control variables (e.g., size, age, ranking, and so on), SEM multi-group analysis was employed to compare the standardised coefficients of the structural model. A multi-group analysis is very useful for determining whether a grouping variable affects a model method, when the same elements are applicable to several groups (Carlson, Kacmar, & Williams, 2000).

The validity and reliability of the measurement scales

After adapting the scales to the specific research context and obtaining information from the survey, the next step involved a refinement process of the scales proposed. Specifically, this process was divided into several stages. First, different exploratory tests were carried out in order to verify the reliability, initially of each scale, and their dimensionality. Second, the exploration results were confirmed through confirmatory analysis, which allows for the purification of scales and assesses the dimensionality of the constructs ultimately obtained. In the last stage, the validity degrees of the measuring instruments finally proposed will be contrasted to quantify the concepts.

Exploratory factor analysis (EFA) of the scales' reliability and dimensions

Exploratory factor analysis (EFA) explores the data and provides information about the number of factors that are needed to represent the data best. The distinctive feature of

EFA is that the factors are derived from the statistical results, not from theory, so it can be conducted without knowing how many factors really exist or which variables belong to each construct (Hair et al., 2006).

Through an exploratory analysis, the first evaluation was to check the reliability and unidimensionality of the scales proposed in the conceptual model (i.e. Anderson & Gerbing, 1988). The scale validation procedure was accomplished by following the next steps:

First, for each dimension, a **Cronbach's alpha** analysis was carried out. To test the scales' internal consistency, we computed the coefficient alphas for all the scales' constructs of the theoretical model. Tests to measure the reliability of the constructs provide evidence with Cronbach scores above 0.7 (Churchill, 1979; Cronbach, 1951; Nunnally & Bernstein, 1978), as the generally agreed threshold; therefore, it may decrease to 0.6 in exploratory research.

Second, we analysed the **item-to-total correlation sub-scale and the inter-item correlation**. The rules of thumb suggest that the item-to-total correlations (the correlation of the item with the summated scale score) exceed 0.5 and the inter-item correlations (the correlation among items) exceed 0.3.

Third, we assessed the **unidimensionality** degree of the scales under consideration. That is, we tried to analyse the degree to which the items loaded on the proposed factors. The analysis of the dimensionality was carried out using **principal component analysis** (PCA) with varimax rotation. Factors were only retained if they possessed an eigenvalue greater than one, accounted for over 5 percent of the variance, and were conceptually clear and interpretable (Churchill, 1979; Hair et al., 1998; Kaiser, 1958).

Before performing the EFA, we analysed the Kaiser–Meyer–Olkin (KMO) statistic, which achieved values above 0.7 for all the scales, indicating high correlation and therefore adequacy for factor analysis. We also conducted Bartlett's sphericity test

($p < .05$ or $p < .01$), which supported the validity of the implementation of the factorial analysis and allowed us to check whether there were significant correlations between variables.

Thus, if the KMO and Bartlett's sphericity tests were found to be in the recommended range, they would indicate the suitability of factor analysis; therefore, we will proceed to its interpretation.

Confirmatory factor analysis (CFA) of the scales' reliability and dimensions

Confirmatory factor analysis (CFA) enables researchers to test how well the measured variables represent the constructs (Hair et al., 2006). CFA does not assign variables to factors. Unlike EFA, with CFA we can specify a priori the number of factors as well as which variables load on those factors. Thus, CFA is a tool that enables us either to confirm or to reject our preconceived theory.

In order to advance in the process of the scale depuration, we carried out diverse confirmatory analyses.

Initial measurement of the model

In an analysis with latent or unobservable variables, a measurement model describes the nature of the relationship between (a) the number of latent variables and (b) the observed or manifest variables or indicators that measure these latent variables, which we measured by the questionnaire. It is noteworthy that the latent or unobservable variables are of two types: the common factors, which are common in that their effects are shared by more than one observed variable, and specific factors or errors. Specific factors affect only an observed variable and are random errors that may have been caused in the measurement of the observed variable (Hair et al., 2006).

In the initial measurement model, a covariance is estimated to connect each latent variable with each of the other latent variables. It is equivalent to a CFA, in which each latent construct covaries with any other latent construct.

Once we had estimated and identified the model, the next step was to assess how well our data have been adjusted to the proposed model. We performed this assessment at three levels: (1) assessment of the global model fit, (2) assessment of the measurement model fit, and (3) assessment of the structural model fit. If only the global fit index is analysed, it may be possible to obtain a measure of global fit with an acceptable range, but with some estimated parameters that are not significant. The adjustment measurement model and structural model should be reviewed separately.

CBSEM calculated three types of fitness indexes to achieve the global model fit before conducting the structural models. The three categories of fitness are absolute, incremental, and parsimonious fit, besides ensuring that the reliability and validity can be achieved. Hair et al. (1998, 2006), and Holmes-Smith, Coote and Cunningham (2006) recommend the use of at least three fit indexes by including one index from each category of model fit.

Absolute fit measures are a direct measure of how well the model specified by the researcher reproduces the observed data (Hair et al., 2006). Absolute fit presents three types of index, which are the chi-square (verify significance test > .05 or .01), root mean square error of approximation (RMSEA, values below 0.08), and the goodness-of-fit index (GFI, values above 0.9).

Incremental fit indices differ from absolute fit indices in that they assess how well a specified model fits relative to an alternative baseline model. The most common baseline model is referred to as a null model, one that assumes that all the observed variables are uncorrelated. It implies that no data reduction could possibly improve the model because it contains no multi-item factors, which would make any multi-item

constructs or relationships between them impossible. This class of fit indices represents the improvement in fit by the specification of related multi-item constructs (Hair et al., 2006). Incremental fit proposes four types of index, which are the adjusted goodness of fit (AGFI, values above 0.9), the comparative fit index (CFI, values near 1), the normed fit index (NFI, values above 0.9), and the non-normed fit index (NNFI, values above 0.9).

Parsimony fit indices are designed specifically to provide information about which model among a set of competing models is best. These measures relate to the accuracy of the model and the number of estimated coefficients required to achieve the level of adjustment. The aim is to obtain a measure of the adjustment level for each estimated coefficient, avoiding the over-adjustment of the model with unnecessary coefficients. The parsimonious fit indicates only one index, namely chi-square over degrees of freedom (normed chi-square, values between 1 and 2 or 3).

The assessment of measurement model fit can be achieved by following three steps:

- Step 1: Examine the statistical significance of each load obtained between the indicator and the latent variable. A non-significant load ($t < 1.96$ for $\alpha = 0.05$, if the researcher did not specify the sign of the relationship, or $t < 1.645$ if the researcher imposed a concrete sign, one-tailed test) indicates that the value is statistically equal to 0, which means that the indicator does not explain anything about the latent variable.
- Step 2: Having verified the significance of the loads, test the reliability of each of the indicators and the composite reliability of the construct. The total variance of an indicator can be decomposed into two parts: the common latent variable that measures and the error. The indicator reliability is the proportion of variance. An indicator should be at least 50% of the common variance with the latent variable (Sharma & Patterson, 2000).

- Step 3: All the indicators must have a high level of internal consistency and must be a valid measure of the concept under study. Internal consistency is measured by the composite reliability construct. The limit that is considered acceptable is 0.7.

For the assessment of the structural model fit, we analysed the significance achieved by the estimated coefficients in a structural model (any parameter must be estimated as statistically different from 0). A non-significant parameter would suggest that the proposed relationship has no substantial effect and should be eliminated and the model reformulated. At a higher level of requirement, the structural model will not be accepted as valid unless all the parameters are significant and in the expected sense.

Once we had removed the items that do not comply with the values recommended and added or removed the causal relationships that would improve the fit, we evaluated the "revised measurement model"; specifically, we verified the reliability and validity of the measurement scales and the goodness of fit.

Measurement of the revised model. Scales' reliability and validity

As discussed above, first we analysed the goodness-of-fit indices of the revised measurement model. Second, we analysed the **constructs' reliability** or internal consistency. The reliability of a measure is its ability to yield consistent results. If a scale's items are measuring the same latent variable, their scores will be strongly correlated with each other, namely, they will be internally consistent. Because no single item is a perfect measure of a concept, we must rely on a series of diagnostic measures to assess internal consistency: Cronbach's alpha, the composite reliability index, and the average variance explained test. If these three indicators are above the minimum recommended levels, we can say that our scales possess reliability.

- **Cronbach's alpha** analyses were conducted to evaluate the extent of reliability through the coefficient scores. Cronbach's alpha can vary between 0 and 1,

although the existence of negative values is possible, indicating that there are some items that are measured inversely. The closer the value to 1, the greater the internal consistency; otherwise, there is no general agreement on the value above which a scale is reliable. Nunnally and Bernstein (1994) recommend values above 0.7. In addition, we highlight that the Cronbach's alpha values resulted in values above 0.6, which is usually considered as the minimal reliability level threshold in exploratory studies (Flavián & Lozano, 2006).

- The **composite reliability index** (CRI) allows all the constructs involved in the scale to be taken into account. In contrast to Cronbach's alpha, which implicitly assumes that each element has the same weight (Kim, Ferrin & Rao, 2008), the CRI includes loads to create the value of the factor. It is calculated as the sum of standardised square loadings divided by the sum of charges' squares and measuring error indicators (Fornell & Larcker, 1981). Generally, composite reliability greater than 0.6 is deemed reasonable (Bagozzi & Yi, 1988). Since the EQS software does not offer this index, we calculate it by the following formula, in which:
  - ✓ Lij = the standardised load factor of each of the indicators j charging on the factor i.
  - ✓ Var (Eij) = the error term variance associated with each indicator j of factor i.
- The **average variance explained (AVE)**. This is calculated for each construct and measures the relationship between the variance that is caught by a factor *i* (unobserved variable) and the total variance due to the measurement error factor. Fornell and Larcker (1981) argue that convergent validity is achieved if the items' AVE by their respective constructs is greater than the variance unexplained (AVE values ≥ 0.5). This minimum is very conservative, so it is

easy to find in the literature research that accepts scales with a lower AVE. The squared multiple correlations from the factor analysis were used to calculated the AVE. Because the EQS software does not offer its calculation, to obtain it we used the formula below, in which:

- ✓ L*ij* = the standardised load factor of each of the indicators *j* charging on the factor *i*.
- ✓ Var (E*ij*) = the error term variance associated with each indicator *j* of factor *i*.

Validity cannot be measured directly but can be inferred from the behaviour of a measure's scores in some theoretically meaningful way (Modi & Mishra, 2010). Validity refers to the ability of a scale to measure the intended concept. According to Sekaran (2000), there are three main categories of validity test: content validity, construct validity (exhibiting discriminant validity and convergent validity), and nomological validity.

The items that are indicators of a specific construct should converge or share a high proportion of variance, known as **convergent validity**. Thus, convergent validity refers to the degree of agreement between two or more measures of the same construct. Several ways are available to estimate the relative amount of convergent validity: factor loadings and variance extracted. In the case of high convergent validity, high loadings on a factor would indicate that they converge on some common point. Furthermore, an average squared factor loading of less than 0.5 indicates that on average more error remains in the items than variance explained by the latent factor structure imposed on the measure (Hair et al., 2006).

The EQS *software* provides standardised factor loadings and approximate coefficients' standard errors, which allow the statistical *t* test with a null hypothesis; the coefficients are zero in the population. The items must meet two conditions: they must be

significantly related to their factors ($p < 0.01$), the size's standardised factor loadings must be greater than 0.6 individually (Bagozzi & Yi, 1988; Vila, Küster & Aldás, 2000), and the average of the factor loads must be greater than 0.7 (Hair et al., 1998). If these conditions are met, the results provide evidence supporting the convergent validity of the indicators (Anderson & Gerbing, 1988), so the items used are strongly correlated.

Discriminant validity is the extent to which a construct is truly distinct from other constructs. Discriminant validity is established when two theoretically different variables are empirically found to be uncorrelated (Sekaran, 2000). Thus, a high level of discriminant validity provides evidence that a construct is unique and captures some phenomena that other measures do not. Therefore, a scale has discriminant validity when not measuring a construct for which it was not designed. Two common ways of assessing discriminant validity exist. First, the correlation between any two constructs can be specified as equal to one; in the confidence interval test, none of the confidence intervals at 95% of the individual elements of the latent factors should contain the value 1 (Anderson & Gerbing, 1988). Second, the variance-extracted percentages of any two constructs with the square of the correlation estimated between these two constructs are compared. The variance-extracted estimates should be greater than the square correlation estimate (Fornell & Larcker, 1981).

Content validity refers to the extent to which the items of a scale represent some theoretical content in the domain of interest (Modi & Mishra, 2010). At every stage of development, we systematically tried to build content validity by strictly adhering to the procedures prescribed in the literature on scale development (Churchill, 1979; Netemeyer et al., 2004).

If all the above requirements are fulfilled, we can conclude that the validation of the measuring instrument shows that it is reliable and valid. Therefore, the revised measurement model will become the "final theoretical model".

Causal analysis and hypothesis testing. The structural equation model

SEM simultaneously integrates various multiple regression equations because at the same time variables that are dependent in one relationship may be independent in another relationship. Once a model has been specified, it must calculate the parameter values that represent the relations raised by the model, taking into account that these values should fit the data. There are several methods that yield indicators for a SEM. In our case, we used the maximum likelihood method (Bentler, 1995). However, if our data did not comply with the case of multivariate normality, we used the robust maximum likelihood method (Bentler, 1995; Chou, Bentler & Satorra, 1991; Hu, Bentler & Kano, 1992). This method initially assumes a normal distribution; when the normality assumptions are not fulfilled, it introduces corrections to adjust the indicators. Specifically, the chi-squared corrected statistic is replaced by the Satorra and Bentler statistic, which is more reliable in adverse conditions of normality and sample size.

Finally, having identified and estimated the model, the next step is to assess whether the data have been adjusted to the model (with the goodness-of-fit index discussed above). Additionally, this stage involves the overall interpretation of the model and tests the hypotheses on the Spanish public universities' model individually.

Multi-group analysis of control variables

According to Hair et al. (2006), numerous CFA applications involve analysing groups of respondents, sometimes formed from an overall sample by dividing it according to a logically meaningful characteristic. In this sense, multiple-group models can be accommodated within a CFA framework and tested using SEM. The procedure to verify the hypothesis that the structural relationships are also invariant between different groups analysed consist in estimating the different parameters of a same model in the different samples and evaluate whether the different model, with those parameters, significantly reproduces the different covariances matrices for each one of the samples.

Therefore, we applied the **model of multi-group SEM**, considered as one of the dominant approaches to the analysis of multi-group data (Hair et al., 2006). This technique allowed us to identify significant differences in those cases in which the relationships are significant for the categorical variables considered.

In our multi-group analysis, the **cross-validation** was considered (Hair et al., 2006). Cross-validation is an attempt to reproduce the results found in one sample using data from a different sample. Generally, cross-validation uses two samples drawn from the same population. A multiple-group approach enables us to understand thoroughly the extent to which the results are the same in both groups.

CFA provides a way of performing the various tests required and the chi-square is a useful statistic for testing invariance and drawing conclusions about the differences between groups.

Invariance of the measurement instrument

According to Hair et al. (2006), several tests exist that indicate the degree to which one sample produces the same results as another sample. Cross-validation does not provide a yes-or-no response to how well the results are reproduced in an independent sample; therefore, it is more a matter of degree that can be determined by applying a series of progressively more rigorous tests across the sample. The procedures overlap, but can be separated into five steps, with each step becoming more constrained. The following list includes typical tests ranging from less rigorous to more rigorous.

- **Loose cross-validation** estimates the CFA individually in each of the samples. No comparison is made between the groups of samples. Rather, the fit must be acceptable in the groups separately to proceed with confidence.
- **Factor structure equivalence**. This tests the same CFA on the groups simultaneously. Sometimes it is referred to as the totally free multiple group model (TF). It is sometimes useful to check the errors in specifying the multi-

group model. If the resulting fit indices for the multi-group CFA are adequate, then at least minimal evidence of cross-validation is present.

- **Factor loading equivalence**. This test constrains the loading estimates to be equal in each group. The purpose of this test is to ensure that various groups respond to the items in the same way so that we can compare the scores of different groups in a significant way.
- **Inter-factor covariance equivalence**. This test adds the constraint that the inter-factor covariance terms depicted by two-headed arced paths are equal between the samples.
- **Error variance equivalence** or **tight cross-validation**. This adds the constraint that the error variance associated with each residual is equal between the groups.

If after this test we find that there is invariance of the measurement instrument, we should proceed to analyse the control variables. Otherwise, we should consider whether there is partial invariance.

If there is partial invariance, we could follow and assess the control of the proposed relations (Hair et al., 2006; Muthén & Christoffersson, 1981). This partial invariance was analysed with the multipliers of Lagrange for each of the proposed restrictions.

If the significance associated with a constraint is less than 1%, it means that removing it would significantly improve the fit. In contrast, if it is over 1%, it means that there is disappearing not improved fit. Therefore, if we find two load factors with significance of > 1%, we will have found the partial invariance.

Control variables

Having guaranteed full or partial invariance of the measurement instrument, we could proceed to verify the hypothesis that structural relationships are also invariant between

different groups analysed. Accordingly, we estimated the multi-group model but now added the structural part.

Once estimated, we analysed the fit of this multi-group in which we added the structural part of the model. This model is taken as a reference to compare the fit with models that have added the constraint that interests us, relating to an equal relationship between factors to analyse whether this difference is not significant and thus we can conclude that the model statistically represents the relationships between the variables hypothesized of this population (all groups).

Then we compared the chi-square unrestricted multi-group model and the multi-group model with each of the constraints, to test whether the difference was significant. If the difference is significant we can conclude that the parameters are significantly different, confirming differences between groups. In contrast, if the difference is not significant, differences does not exist.

5.4.3 Latent class segmentation analysis

Another empirical objective of this research is to analyse the existence of heterogeneity among Spanish public university managers and, if found, to group them into different segments that are as homogeneous as possible and more heterogeneous regarding the remaining groups. To achieve this aim, we used the technique of latent class segmentation, which is a technique for analysing case-level data with the goal of finding and introducing to the model "latent classes" or segments that characterise similar groups of cases (i.e. types of survey respondents).

This methodology assigns individuals to different segments under the assumption that the data stem from a mixture of distribution probabilities or, in other words, from various groups or homogeneous segments that are mixed in unknown proportions (McLachlan & Basford, 1988). The advantage of latent class models is that they allow

the incorporation of variables with different measurement scales (continual, ordinal, or nominal) (Vermunt & Magidson, 2005). Furthermore, the models can usually incorporate independent variables that may be used to describe (rather than to define or measure) the latent classes. These exogenous variables are known as covariates or grouping variables (Hagenaars, 1993; McCutcheon, 1987; Vermunt & Magidson, 2005).

The latent class segmentation (LCS), like the cluster analysis, classifies similar objects into groups of which the number and size are a priori unknown. According to Picon-Prado, Lévy-Mangin and Voces-Lopez (2006), a relationship exists between latent segmentation and traditional cluster techniques such as K-means clustering. However, the interest in LCS models is increasing rapidly because they provide better solutions than the more traditional approaches to cluster, factor, and regression analysis when the population is not homogeneous. In particular, LCS modelling has now become the gold standard for cluster analysis (Vermunt & Magidson, 2002) by including variables of mixed scale types (nominal, ordinal, (censored/truncated) continuous, and/or (truncated) count variables) in the same analysis.

Latent classes are unobservable (latent) subgroups or segments. Cases within the same latent class are homogeneous on certain criteria, while cases in different latent classes are dissimilar from each other in certain important ways. Formally, latent classes are represented by K distinct categories of a nominal latent variable X. Summarising, the LCS model is used to predict a dependent variable as a function of predictors, includes an R-category latent variable, each category representing a homogeneous population (class, segment), estimates different regressions for each population (for each latent segment), and simultaneously classifies cases into segments and develops regression models (Magidson & Vermunt, 2004).

Hence, the LCS allows the assignment of membership to segments according to probabilities of property (Dillon & Kumar, 1994). This methodology assigns membership to different segments, based on which the data come from a mixture of

probability distributions, meaning several homogeneous groups or segments that are mixed in unknown proportions (McLachlan & Basford, 1988).

Latent class modelling, also known as finite mixture modelling, provides a powerful way of identifying latent segments (types) for which the parameters in a specified model differ. Whereas previously it was not known to which segment each membership belongs, nor the number of segments, the objective focuses on "undoing the mixture" or recognising heterogeneity in the sample, identifying different groups through the estimation of parameters for each density function underlying each segment (Wedel & Kamakura, 1999). Thus, it is expected that the estimation of finite mixture modelling will rank managers according to their probability of belonging to one group (Fuentes-Blasco & Gil-Saura, 2010). The LCS will attempt to detect the presence of latent classes (the disease entities), creating patterns of association in the symptoms. As in factor analysis, the LCS can also be used to classify cases according to their maximum likelihood class membership.

We carried out the LCS by employing the **Latent GOLD 4.5** statistical software, which is a powerful latent class and finite mixture program. In this software, the maximum likelihood parameter estimation is performed using the E-M algorithm (maximum-expectation algorithm).

To carry out the segmentation, we followed the four steps listed below: 1) identify the variables to use; 2) determine the ideal model; 3) check the fit of the latent model cluster; and 4) define the profile of the gathered segments.

- Identify the variables to use. In this section, we identify the indicators and co-variables. The variables used as indicators for the cluster analysis were items that measure the frequency; the indicators for the latent segmentation were *mimetic factors* (MF), *traditional culture of the university* (CULT), *complexity of the university* (COMP), *top management emphasis* (EMPH), *cohesion* (COH),

responsive societal orientation (RSO), *proactive societal orientation* (PSO), *beneficiary satisfaction* (SAT), *resource acquisition* (ACR), and *reputation* (REP). Moreover, as co-variables, we considered different socio-demographic characteristics (age, gender, autonomous communities), university characteristics (university size, seniority of the university, ranking positions, university structure), and university managers' characteristics (endogamy, knowledge area), with the aim of outlining the resulting segments. Depending on the positions of different members in relation to these variables, we tried to obtain some groups that fulfilled the principles of maximum internal coherence and external maximum differentiation.

- Determine the ideal model. The criterion used to select the model that has a better fit, based on comparing the stability of one model with respect to another, is an increased class number (Magidson & Vermunt, 2001). The most common indicators are AIC, BIC, or CAIC (Fraley & Raftery, 1998). We evaluated the goodness of fit of the model using the Bayesian Information Criterion (BIC), which identifies the model with the smallest number of classes that best fits the data. Therefore, the lowest value of BIC is considered as the best indicator model (Vermunt & Magidson, 2002). Additionally, the model was chosen to have both the value of class error and the number of parameters reduced.

- Check the fit of the latent model cluster. To ensure the quality of the classification, we employed the entropy statistic and R^2. The entropy statistic (Es) measures the purity of the class, taking values between 0 and 1. A value of this statistic close to 1 indicates a precise classification (Ramaswamy et al., 1993). The R^2 explains the variance of each indicator in the model, which varies between 0 and 1. The higher the R^2, the better the associated explained variance and therefore the better the fit.

- Define the profile of the gathered segments. First, we analysed the probabilities of each variable used as an indicator of belonging to different classes or segments. Additionally, using Wald's statistic, we evaluated the statistical significance of each indicator used to carry out the segmentation. Secondly, we analysed the composition of each segment based on the co-variables included in the analysis. Furthermore, using the chi-square statistic, we determined whether there were significant differences among the segments based on the aforementioned co-variables.

6 Research results

Having established the conditions under which the investigation was carried out, we proceed to the verification of the results obtained in our fieldwork through the observations gathered from the questionnaire, which allowed us to perform statistical analyses to test the hypotheses raised as well as to establish the final conclusions.

First, we performed a descriptive analysis of the percentages and contingency tables, graphics. The SPSS and Excel software were employed to achieve this goal. Secondly, we identified and verified the variables of the model through a principal component analysis (PCA) and subsequently, to obtain validated scales, we carried out validity and reliability analyses by employing the EQS package. Thirdly, we tested the hypotheses, proceeding to the study of the causal model through a CBSEM by using the EQS package. Thus, we observed the existence of significant relationships between the latent variables of the proposed model and tested the overall model's assessment of fit. This contributes to the validation, or otherwise, of the overall hypotheses of the proposed model. Fourth, we test the control identified in the previous literature, which could exert an influence on certain established relationships of the theoretical model. For such testing, we carried out a multi-group structural equation analysis using the EQS package. Finally, we perform a latent class segmentation analysis of Spanish public university managers by employing the Latent GOLD 4.5 statistical software.

6.1 Descriptive analysis of Spanish public universities' managers

Prior to the presentation of the data gathered, some background information is warranted to provide a profile of the respondents. Then we proceeded to conduct a descriptive analysis of the main characteristics of Spanish public universities' managers by carrying out a frequency analysis through variables that reflect the aforementioned characteristics, such as gender, age, type of collective, professional categories, knowledge areas, university, autonomous community, use of social networks, and so on. As already discussed in the previous chapter, a chi-square goodness-of-fit test is employed to determine whether sample data are consistent with the hypothesised distribution in an attempt to analyse how well the model actually reflects the data (see Annex V). To obtain more conclusive results and to provide added value to this research, we undertook as far as possible a simultaneous analysis of two categorical variables using a chi-square for contingency tables.

First, from the data gathered (2,169 observations), we analyse the frequencies from our sample related to the variable **management position**, which means belonging to a particular strategic position (Table 6.1).

Table 6.1 Distribution of observations of the management position

Management position	Frequency	Percentage
Head of department	855	40.5%
Dean	262	12.4%
Area director	203	9.6%
Deputy of rector	174	8.3%
Vice-rector	135	6.4%
Chair director	117	5.5%
Institute director	96	4.6%
Director or presidents	59	2.8%
Vice-managing director	41	1.9%
External counsellors	38	1.8%
Managing director	27	1.3%

Management position	Frequency	Percentage
Other faculty	20	0.9%
Social council secretary	20	0.9%
Ombdusman	17	0.8%
Other staff administration	14	0.7%
Secretary-general	11	0.5%
Rector	7	0.3%
Social council president	5	0.2%
Other external members	4	0.2%
Social council vice-president	4	0.2%
Valid responses	2,109	100.0%
No responses	60	
Total	**2,169**	

Secondly, we gathered the frequencies from the variable **university structure** (Table 6.2), which means belonging to a particular group of the university structure (faculty and administrative staff, both as internal human resources of the organisation and, on the other hand, people outside the university as external members).

Table 6.2 Distribution of observations of the university structure

University structure	Frequency	Percentage
Faculty	1,738	80.9%
Administration staff	318	14.8%
External members	92	4.3%
Valid responses	2,148	100.0%
No responses	21	
Total	**2,169**	

We also gathered the frequencies from the variable **university**, which means belonging to 1 of the 48 Spanish public universities and, the frequencies from the variable **autonomous community**, which means belonging to 1 of the 17 Spanish autonomous communities (Table 6.3, see also Annex VIII for detail of abbreviations).

Table 6.3 Distribution of universities and autonomous communities

University	Frequency	Percent
UCM	78	3.6%
UPM	63	2.9%
US	73	3.5%
UGR	82	3.8%
UB	105	4.8%
UV	73	3.4%
EHU	81	3.7%
UPV	62	2.9%
USC	67	3.1%
UNIZAR	69	3.2%
UAM	56	2.6%
UAB	78	3.6%
UVA	56	2.6%
ULL	45	2.1%
UMA	49	2.3%
UA	65	3.0%
UPC	75	3.5%
USAL	34	1.6%
UM	56	2.6%
UCLM	48	2.2%
UDC	39	1.8%
UVIGO	52	2.4%
UCA	27	1.2%
UJAE	44	2.0%
UCO	29	1.3%
ULPG	37	1.7%
ULEON	25	1.2%
URV	52	2.4%
UNIC	32	1.5%
UNIOVI	38	1.8%
URJC	31	1.4%
UC3M	36	1.7%
UHU	30	1.4%
UMH	28	1.3%
UdG	32	1.5%
UEXT	22	1.0%
UAH	33	1.5%
UBU	24	1.1%
UPF	43	2.0%
UJI	24	1.1%
UDL	35	1.6%
UIB	30	1.4%
UPO	23	1.1%
UPCT	26	1.2%
UNAV	17	081%
UAL	13	0.6%
UNIRIOJA	20	0.9%
UNIA	9	0.4%
Total	**2,169**	**100.0%**

CCAA	Frequency	Percent
AND	381	17.7%
MAD	290	13.5%
CAT	417	19.4%
VAL	247	11.5%
CYL	138	6.4%
GAL	155	7.2%
ISC	82	3.8%
MUR	79	3.7%
PVA	81	3.8%
ARA	70	3.3%
CLM	49	2.3%
AST	38	1.8%
CAN	30	1.4%
EXT	23	1.1%
ISB	30	1.4%
NAV	18	0.8%
RIO	20	0.9%
Valid responses	2,148	100.0%
No responses	21	
Total	**2,169**	

Summarising the obtained information, our sample is composed firstly of faculty (80.9%); secondly, by 39.4% of heads of departments; thirdly, by 62.2% of universities from 4 communities amongst the 17 in existence; and, finally, by 50% of responses from 15 of the 48 universities.

In general terms, for **management positions**, we received more answers from heads of departments and area directors, despite the lack of responses from both external counsellors and institute directors. Likewise, for the **university structure,** from 1,641 expected faculty observations, we received 96 more, and from the **administrative staff** observations, we received 318 answers instead of the 210 expected, making a total of 107 more (see Annex V, Table AV.4). However, the responses from the **external members** show the opposite case, which means that we obtained only 92 of 296 expected answers (see Annex V, Table AV.4).

We argue that a possible cause of these results is the involvement and linkage that each university structure's group has with the university. Thus, the internal staff (faculty and administrative staff) would show a stronger relationship with topics relating to the university's strategies, and therefore would also be best able to respond to the present questionnaire. Specifically, the **administrative staff** achieved a higher level of response than expected; for example, in a particular case, we obtained 27 responses from managers (see Annex V, Table AV.11) versus only 7 from rectors (over 48) (see Annex V, Table AV.9) or 5 from presidents of social councils (over 47) (see Annex V, Table AV.12).

For the **universities' distribution**, the main differences came from the responses from the major universities, as we received more answers than expected in the case of the "Universitat de Barcelona" (UB) and the "Universitat Politècnica de Catalunya" (UPC) and fewer than expected in the case of the "Universidad Complutense de Madrid" (UCM) and the "Universidad Politécnica de Madrid" UPM (see Annex V, Table AV.8). Finally, such deviations also affect the distribution of responses from autonomous

communities, causing more answers than expected from the Catalan community (CAT) and fewer answers than expected from the Madrid community (MAD) (see Annex V, Table AV.7).

Furthermore, related to the **autonomous communities'** distribution, we observed similar distribution percentages between, on the one hand, the observations gathered and the universe of university managers and, on the other hand, those regarding the distribution of overall human resources in Spanish public universities (Michavila, 2012) (see Table 6.4).

Table 6.4 Autonomous community distribution. Percentage of managers' observations and percentage of managers' universe

	Percentage managers' observations	Percentage managers' universe		Percentage managers' universe	Percentage CRUE (2012)
Andalucía	17.74%	19.60%	Andalucía	19.60%	17.80%
Aragón	3.26%	2.70%	Aragón	2.70%	3.60%
Castilla - La Mancha	2.28%	2.10%	Castilla - La Mancha	2.10%	2.40%
Castilla y León	6.42%	7.90%	Castilla y León	7.90%	6.50%
Cataluña	19.41%	14.30%	Cataluña	14.30%	16.80%
Comunidad Valenciana	11.50%	11.20%	Comunidad Valenciana	11.20%	11.30%
Madrid	13.50%	16.50%	Madrid	16.50%	17.80%
Extremadura	1.07%	1.50%	Extremadura	1.50%	2.10%
Galicia	7.22%	7.00%	Galicia	7.00%	5.30%
Murcia	3.68%	3.30%	Murcia	3.30%	3.10%
Asturias	1.77%	1.70%	Asturias	1.70%	2.10%
Navarra	0.84%	1.10%	Navarra	1.10%	0.90%
Canarias	3.82%	4.20%	Canarias	4.20%	3.30%
País Vasco	3.77%	3.10%	País Vasco	3.10%	4.10%
Cantabria	1.40%	1.70%	Cantabria	1.70%	1.20%
La Rioja	0.93%	0.90%	La Rioja	0.90%	0.50%
Islas Baleares	1.40%	1.20%	Islas Baleares	1.20%	1.20%
Nº Observations	**2,148**	**7,130**	**Nº Observations**	**7,130**	**152,057**

To explore in greater detail the characteristics of the three groups that are involved in the universities' strategic management (faculty, administrative staff, and external members), we proceeded to analyse the distributions of the responses gathered by each group, as well as the distributions related to working time in the aforementioned management position.

Thus, if we consider only the distribution of responses compiled by the faculty group (1,717 observations), **faculty management position** we observe that the percentage of heads of departments increases, up to 49.8%, while for the total observations it is 39.4%. When we asked about the time elapsed since the beginning of the development of respondents' current position, the results revealed that mainly (at 61.7%) the time interval is between 0 and 4 years. The frequencies and the valid responses gathered are shown in Table 6.5.

However, if we relate the variable period with the management position, we observe that for certain charges the tendency is opposed, namely due to the policy regarding the regulatory permanency about the length of a mandate. Therefore, for the positions of chair director, institute director, and managing director, the dominant duration is longer than 6 years. However, for the main positions (heads of departments, deans, and deputy rectors, as well as ombudsmen), the dominant period is between 0 and 2 years. Finally, for the remaining positions (vice-rectors, rectors, and others), the dominant period is between 2 and 4 years (see Annex VI Figure AVI.1).

Furthermore, if we consider only the distribution of responses compiled by the **administrative staff management position** (a total of 300 responses comprise this sub-sample), we can observe that the replies mostly correspond to area directors (68%). We asked about the time elapsed since the beginning of the development of respondents' current position, and the results reveal that mainly (at 64%) the time interval is between 0 and 10 years, the major frequency being the period between 0 and 5 years. The frequencies and the valid responses gathered are shown in Table 6.5.

Moreover, relating the variable period with the management position, we observe different distributions amongst the diverse positions: for managing directors, the dominant period is over 25 years, while for area directors, it is between 20 and 25 years. Otherwise, for senior positions (managing directors and vice-managing directors), the period decreases to 0 to 5 years (see Annex VI Figure AVI.2).

Finally, if we consider only the distribution of responses compiled by the **external members** variable, we observe in Table 6.5 that 65.6% are responses gathered from external members of social councils (presidents, vice-presidents, secretaries, and counsellors); meanwhile, 27.4% of the responses are from several managing director positions (foundations/associations' CEOs, foundations /associations' presidents, and chairmen of research institutes). Regarding the time elapsed since the beginning of the development of the respondents' current position, the results reveal that mainly (at 53.4%) the time interval is between 0 and 4 years.

Finally, relating the variable period with the management position, we observe that unlike the other two groups analysed, a clearly defined trend does not exist, which can be partly explained by the shortage of responses from this group (see Annex VI Figure AVI.3).

Table 6.5 Sample characteristics by managing position

By faculty position			**By period of faculty position**		
Other faculty	20	1.2%	Between 0 and 2 years	568	33.0%
Rector	8	0.5%	Between 2 and 4 years	493	28.7%
Vice-rector	135	7.9%	Between 4 and 6 years	328	19.1%
Secretary-general	11	0.6%	More than 6 years	330	19.2%
Deputy of rector	175	10.2%			
Ombdusman	17	1.0%			
Dean	262	15.3%			
Institute director	96	5.6%			
Head of department	855	49.8%			
Managing director	21	1.2%			
Chair director	117	6.8%			
Valid responses	1,717	100.0%	Valid responses	1,719	100.0%
By administrative position			**By period of administrative position**		
Managing director	7	9.0%	0 to 5 years	119	37.9%
Vice-managing director	92	13.7%	5 to 10 years	82	26.1%
Area director	741	68.0%	10 to 15 years	55	17.5%
Director or presidents	914	3.7%	15 to 20 years	33	10.5%
Other staff	346	5.7%	20 to 25 years	14	4.5%
			Over 25 years	11	3.5%
Valid responses	300	100.0%	Valid responses	314	100.0%
By external position			**By period of external position**		
Other external members	7	7.1%	0 to 2 years	21	23.9%
Social council president	4	4.0%	2 to 4 years	26	29.5%
Social council vice-president	4	4.0%	4 to 6 years	15	17.0%
Social council secretary	20	20.2%	6 to 8 years	12	13.6%
External counsellors	37	37.4%	Over 8 years	14	15.9%
Directors or presidents	27	27.3%			
Valid responses	99	100.0%	Valid responses	88	100.0%
No responses	53		No responses	48	
Total	**2,169**		**Total**	**2,169**	

Another group of variables from the database consists of those related to the characteristics of university managers in focus in our research: **gender**, **area of knowledge**, and **age**. Age is an important variable that we were unable to consider in the database given that we cannot obtain such information from many of the universities' websites or from their own personal information available on the Web. Therefore, for the variables age and employment status, we only have information from the survey data. The profile of the characteristics is shown in Table 6.6.

Table 6.6 Sample characteristics by respondents

By respondent's gender					
Male	1,499	69.8%			
Female	649	30.2%			
Valid responses	2,148	100.0%			
No responses	21				
Total	**2,169**				
By respondent's age			**By respondent's knowledge area**		
under 30 years	7	0.3%	Social science	721	33.6%
30 to 39 years	92	4.4%	Science	417	19.4%
40 to 49 years	741	35.3%	Engineering & Architecture	387	18.0%
50 to 59 years	914	43.6%	Humanities	369	17.2%
Over 60 years	346	16.5%	Health science	254	11.8%
Valid responses	2,100	100.0%	Valid responses	2,148	100.0%
No responses	69		No responses	21	
Total	**2,169**		**Total**	**2,169**	

Source: Self-elaborated

To summarise, the demographical variables reveal that Spanish public university managers are dominated by males (69.8%) between 50 and 59 years old (43.5%) and most of them are from the social science knowledge area (33.6%). Furthermore, considering the information obtained, we can suggest that the answers largely correspond to male faculty of a mature age, especially heads of departments, who

mainly exercise their position in one of the four largest Spanish autonomous communities, while also being part of one of the largest Spanish public universities.

Moreover, we also contemplate the distributions of observations gathered by taking into account the following variables: university size, seniority of the university, and ranking quartiles. The profile of the sample is shown in Table 6.7.

Table 6.7 Sample characteristics by universities

By university's size			**By university's seniority**		
Large	973	44.9%	Senior	893	41.2%
Medium	520	24.0%	Modern	659	30.4%
Extra-large	496	22.9%	Young	617	28.4%
Small	180	8.3%			
Total	**2,169**	**100.0%**	**Total**	**2,169**	**100.0%**
By university's ranking positions					
First quartile	853	0.3%			
Second quartile	629	4.4%			
Third quartile	400	35.3%			
Fourth quartile	278	16.5%			
No rankes	9	0.4%			
Total	**2,169**	**100.0%**			

From the observations gathered, we can observe that a large extent correspond to answers from large and senior universities as well as universities located in the first quartile's ranking position.

Extending the analysis, we introduce the **endogamy** variable, which we have not considered previously in our research due to the difficulty in obtaining such information through websites. In this research, we consider that inbreeding (**university endogamy**) exists in management positions if the respondents have achieved their highest university degree in the university in which they are currently developing their managerial role. In the same way, we also consider inbreeding (**autonomous community endogamy**) to

exist in management positions if the respondents have achieved their highest university degree in the autonomous community in which they are currently developing their managerial position. Moreover, we analyse the frequency of the information gathered concerning the country where the holder of the managerial position has completed his or her maximum university degree.

The results show that 97.9% (of a total of 2,067 observations) have completed their university degree at a Spanish university, and only 2.1% externally. These results are very similar to those highlighted by the report of the Ministry of Education ("Datos Básicos del Sistema Universitario Español", 2013), which shows that 98% of faculty at public universities are Spanish. For the university endogamy variable, our results reflect that 69.7% (over 2,104 observations) have a higher university education degree from the same university in which they are currently developing their managerial position; when inbreeding is analysed by regions, the level increases to 86.9% (see Table 6.8).

Table 6.8 Sample characteristics by endogamy

By university endogamy			By autonomous community endogamy		
Endogamy	2,024	97.9%	Endogamy	1,466	69.7%
Non endogamy	43	2.1%	Non endogamy	638	30.3%
Valid responses	2,067	100.0%	Valid responses	2,104	100.0%
No responses	102		No responses	65	
Total	**2,169**		**Total**	**2,169**	**100.0%**

Finally, given that university faculty represent 80.9% of the observations, we consider it useful to introduce two addition variables, which provide further features of the group in particular: labour categories and employment status.

Thus, to introduce the **employment status** variable, as we explained in Chapter 3, we consider the fact that the academic staff of Spanish public universities is divided into two main groups: civil servants (tenured positions) and staff with administrative

contracts (non-tenured positions). In addition, to enter the **labour categories** variable, we consider that within the tenured position the following labour categories exist: CU ("Catedrático de Universidad", equivalent to full professor), TU ("Titular de Universidad", equivalent to associate professor), CEU ("Catedrático de Escuela Universitária" equivalent to associate professor), TEU ("Titulares de Escuelas Universitárias", equivalent to academics with tenured positions), and professor emeritus.

Moreover, within the non-tenured positions, we can find the following categories: "Catedrático", equivalent to full professor with an administrative contract, "Contratado Doctor", equivalent to associate doctor, "Profesor Colaborador", equivalent to an academic with a non-tenured position, assistant, and associate.

The results highlight that 93.2% of management positions are held by university civil servants, and this percentage drops to 49.7% considering the whole university faculty of Spanish public universities (Michavila, 2012).

Additionally, for the sub-sample that only considers faculty managers, with 1,718 valid observations gathered, Table 6.9 highlights that 86.1% of management positions are occupied by the two main categories of academic public universities (50.1% TU and 36% CU). Furthermore, if we consider the whole university faculty of the Spanish public universities, the percentage of CUs drops to 10.4% and for TUs it drops to 30.3%, while the percentage of associates increases to 29.8% (Michavila, 2012).

Having realised the frequency analysis of the main explicative variables regarded in our research, we analysed whether there is a relationship or not between them by using contingency tables and the chi-square test of independence. After analysing all the relationships between the variables and subjecting them all to the chi-square test of independence, those relationships that are independent and do not provide any relevant information were ignored.

Table 6.9 Labour categories of the faculty managers' distribution

Labour categories	Frequency	Percentage
Others	26	1.6%
CU	619	36.1%
TU	860	50.1%
CEU	43	2.5%
TEU	48	2.8%
Professor emeritus	5	0.3%
Catédratico	6	0.3%
Associate doctor	75	4.4%
Assistant	8	0.5%
Professor colaborador	20	1.2%
Associate	7	0.4%
Faculty members	**1,717**	**100.0%**
Non faculty members	399	
No responses	53	
Total	**2,169**	

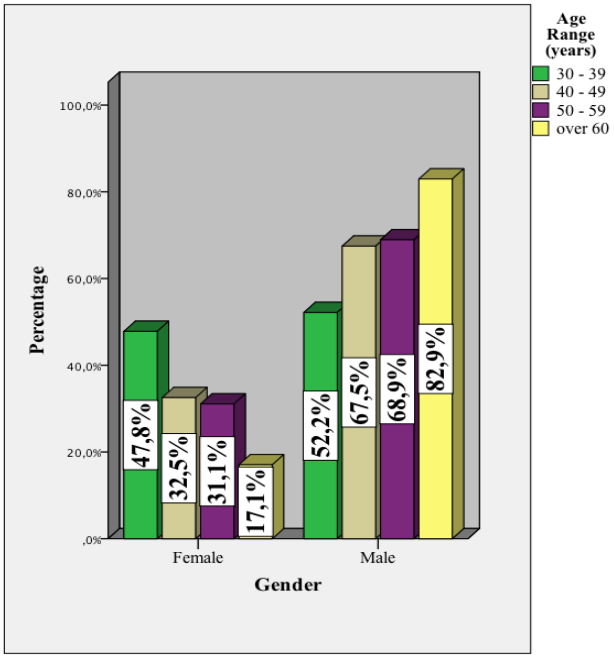
Associating the **gender** variable with the variable **structure** of the university, we observe that the proportions of faculty and external members do not differ significantly among themselves (72.3% for male faculty and 78.3% for male external members). Contrary to the previous dominant male position, the group administrative staff shows gender percentages that tend to be equal, so that these fall to 53.8%. Likewise, for the administrative staff, we obtain similar results, so the percentage for the overall female Spanish state is 59.8%, while it decreases to 46.2% for management positions. For more information see Annex VII, Table AVII.1.

On the other hand, if we associate the **gender** variable with the **knowledge area** variable, we observe that the gender proportions of social science, humanities, and health science do not differ significantly (around 60% are male), while for science and engineering and architecture the percentages increase to 77.2% and 87.6%, respectively (see Annex VII, Table AVII.2).

A chi-square confirms the dependence relationship between the **gender** variable and the variable that clusters the main university **governance structures**. The parity ratio remains only for the administrative staff who occupy managerial positions (46.9% are female), while the ratio decreases to 35% for those positions related to university governance teams. Regarding the management positions of deans and department heads, the female percentages are even lower, namely 29% and 26.2%, respectively (see Annex VII, Table AVII.3).

Furthermore, relating the variable **gender** to the variable **age** of managers, the results confirm that the largest number of Spanish public university managers, both male (42.9%) and female (44.9%), are concentrated in the interval ranging from 50 to 59 years (see Annex VII, Table AVII.4). In addition, the results of the contingency table show an opposing trend in terms of age and gender; therefore, for younger age groups, the proportion of female managers and male managers is almost egalitarian, whereas if we climb through the age group a higher percentage of males is shown increasingly at the expense of females (see Figure 6.1).

Figure 6.1 Distribution by age and gender



Relating the variable managers' **age** to the variable **structure of the university**, we note that the age of managers is mainly between 40 and 59 years (78.6% in the faculty case, 83.9% in the case of administrative staff, and 65.5% in the case of external members). Moreover, we found some discrepancy in the percentage range over 60 years (17.3% for faculty, 9.2% for administrative staff, and 25.3% for external members) (see Annex VII Table AVII.5). Except for external members (we do not have information about this group), the percentages obtained more or less follow the trend included in the report drawn up by the Ministry of Education ("Datos Básicos del Sistema Universitario Español", 2013), which highlights that 13.9% of faculty are older than 60 years while the administrative ratio stands at 4.6%. Moreover, if we look at the **size** information for universities, this percentage increases to 20.9% in the case of large universities and decreases to 9.1% in the case of small universities (see Annex VII, Table AVII.6). These percentages are very similar if we look at the same classification from the perspective of the **seniority** of the university becoming 19.9% for the senior universities and 10.4% for the younger universities (see Annex VII, Table AVII .7).

In our research, we considered two variables of inbreeding, one of which relates the previous university to the host university and the other relates these to the autonomous community. For the analysis of contingency, we chose the variable inbreeding in the university, because we believe that it suits the aim of our research better: the unit of analysis of public universities' managers.

First, we started by analysing the relationship between the **endogamy** variable and the variable **university structure**. The results highlight that there is a higher index of inbreeding in the case of faculty, namely 73.9%, who obtained their highest university degree in the same university where they are currently developing their managerial roles. In contrast, the percentages of the groups administrative staff (51.9%) and external members (49.4%) are more similar between the two situations (see Annex VII, Table AVII.8).

Relating the variables university **endogamy** and **knowledge area**, we identified greater percentages of endogamy (for all the observations as well as for only faculty) in the areas of health sciences (77.8% and 81.1%), engineering and architecture (73.8% and 78.2%), and social sciences (68.8% and 75.7%), being lower for the fields of humanities (66.3% and 69.7%) and science (65.4% and 66.2%) (see Annex VII, Table AVII.9 and Table AVII.10).

Looking at the distribution of the variable inbreeding in **autonomous communities** and **universities**, we highlight that the percentages of some of them are quite different from each other (see Annex VII, Table AVII.11, Figure AVII.1, Table AVII.12, Figure AVII.2). We suggest that the differences between universities can be explained largely by the characteristics of the universities themselves, which we are reflected in the variables size and seniority of the university. However, the differences between autonomous communities will also be explained by the typology of universities that comprise them.

Hence, in accordance with the above arguments, we proceed to analyse the relationships between the **endogamy** and the **seniority** variable and also between the **endogamy** and the **size** variable. The results reflect higher rates of inbreeding in the universities that are old (86.8%) and very large (88.1%). On the other hand, lower percentages are found in universities that are young and small (17.5% and 26.9%, respectively). The following graphs (Figure 6.2 and Figure 6.3) reflect the distributions for each variable (for more information see Annex VII, Table AVII.13 and Table AVII.14).

Mindful that 97.9% of faculty completed their university degree at a Spanish university and the percentage of inbreeding in autonomous communities increased to 86.9%, we suggest, according to the arguments stated in Chapter 3, that universities created after the Spanish constitution of 1978 have been provided primarily with human resources originating from the next oldest university in their region. Hence, in accordance with the stated arguments, we assert that in relation to strategic management, the aforementioned

results could be the cause of the emergence of universities' clones of their predecessors; therefore, in our opinion, this may have led to the fact that nowadays Spanish universities have become a mirror of very similar cultures and traditions.

Figure 6.2 Endogamy and size

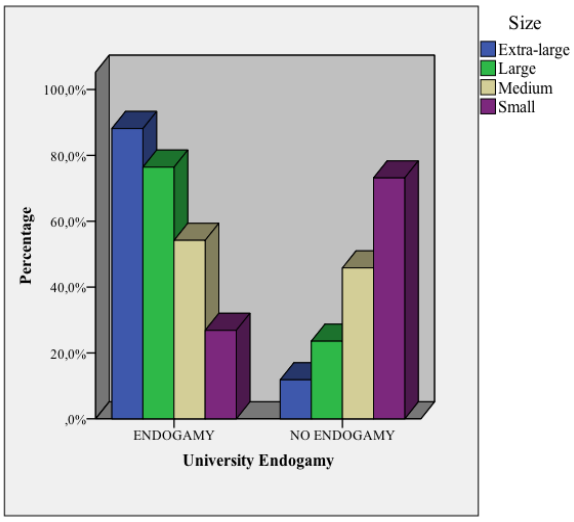
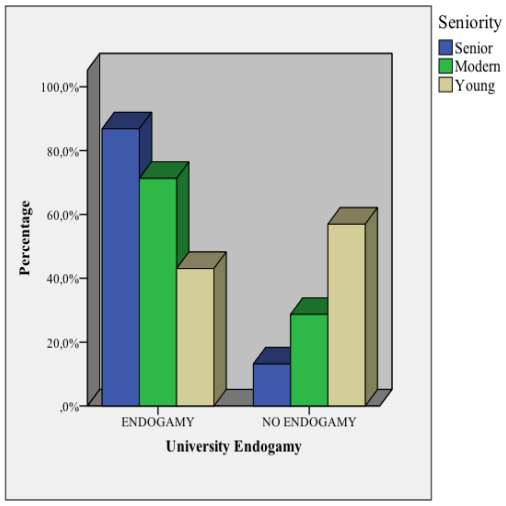


Figure 6.3 Endogamy and seniority



6.2 The presence of Spanish public universities' stakeholders on their websites

As mentioned, according to Alves et al. (2010), identifying the stakeholders involved in HEIs is a fundamental step, not only towards establishing competitive advantages for this type of organisation, but also towards identifying the stakeholders' needs and setting up the means to meet them. In agreement with them, we think this task is not easy to carry out; besides, it is not the aim of our thesis. In any case, as we have already justified in the previous chapters, we considered it necessary to follow the directions of these authors to identify a stakeholder map that helps us to understand better the environment in which Spanish public universities are developing their research, teaching, and knowledge transfer activities. Thus, the aim of this section is to analyse

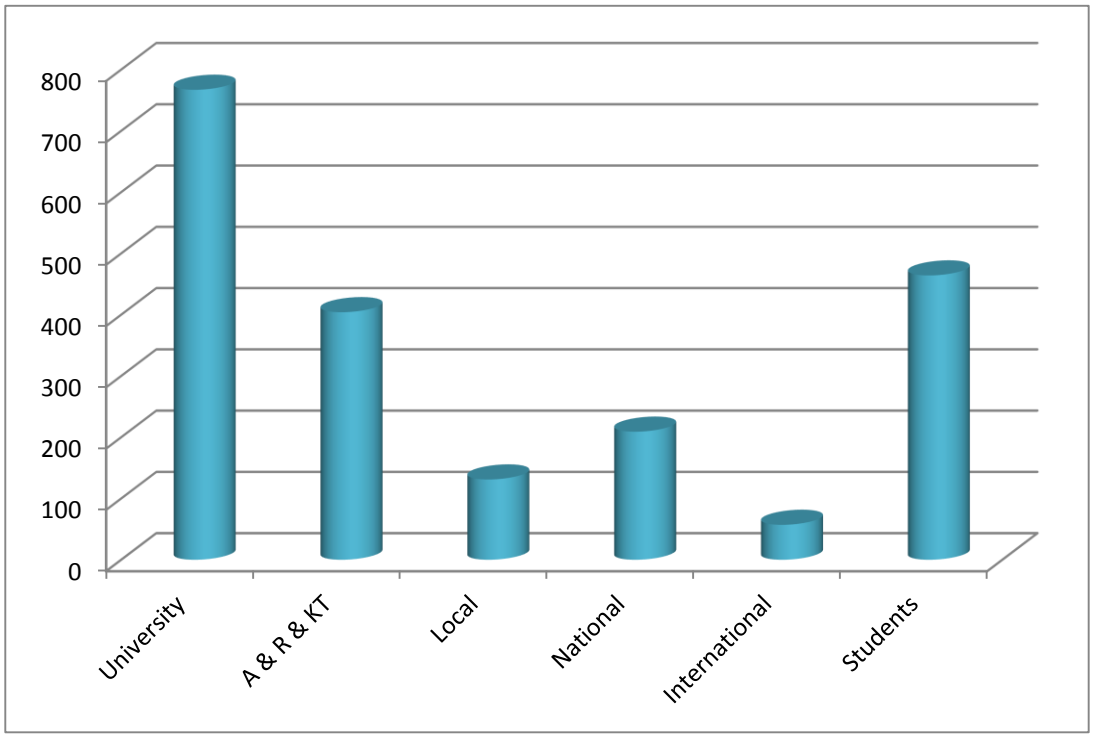
the information displayed on the universities' websites concerning the main stakeholder groups to identify the importance that Spanish public universities grant to each of them.

The results show a map of the importance that is given, at the present time, to the different Spanish public universities' stakeholders. In line with Harrison et al. (2010), to determine the stakeholders' map for Spanish public universities, we included those stakeholders who are most closely associated with them. Therefore, in Table 5.3, we identified the six major groups of stakeholders, and their respective subgroups, that make up the map of stakeholders in Spanish public universities.

We collected 184 records related to the various groups of stakeholders identified on the total Spanish university websites, representing a total of 2,032 observations gathered. The results of the analysis show that the variable with the largest frequency is basic or internal stakeholders, while the variables relating to the stakeholder environment (local, national, and international) are those that make less frequent appearances on the websites. Students and academic–research–knowledge transfer stakeholders (A & R & KT) have similar frequencies above and below 400, respectively (see Figure 6.4).

If we analyse the results in terms of percentages, we can conclude that more than a third of the registers (37.8%) displayed on the websites of the Spanish public universities refer to key interest groups in universities, which are internal, such as we can observe in the description of the variable.

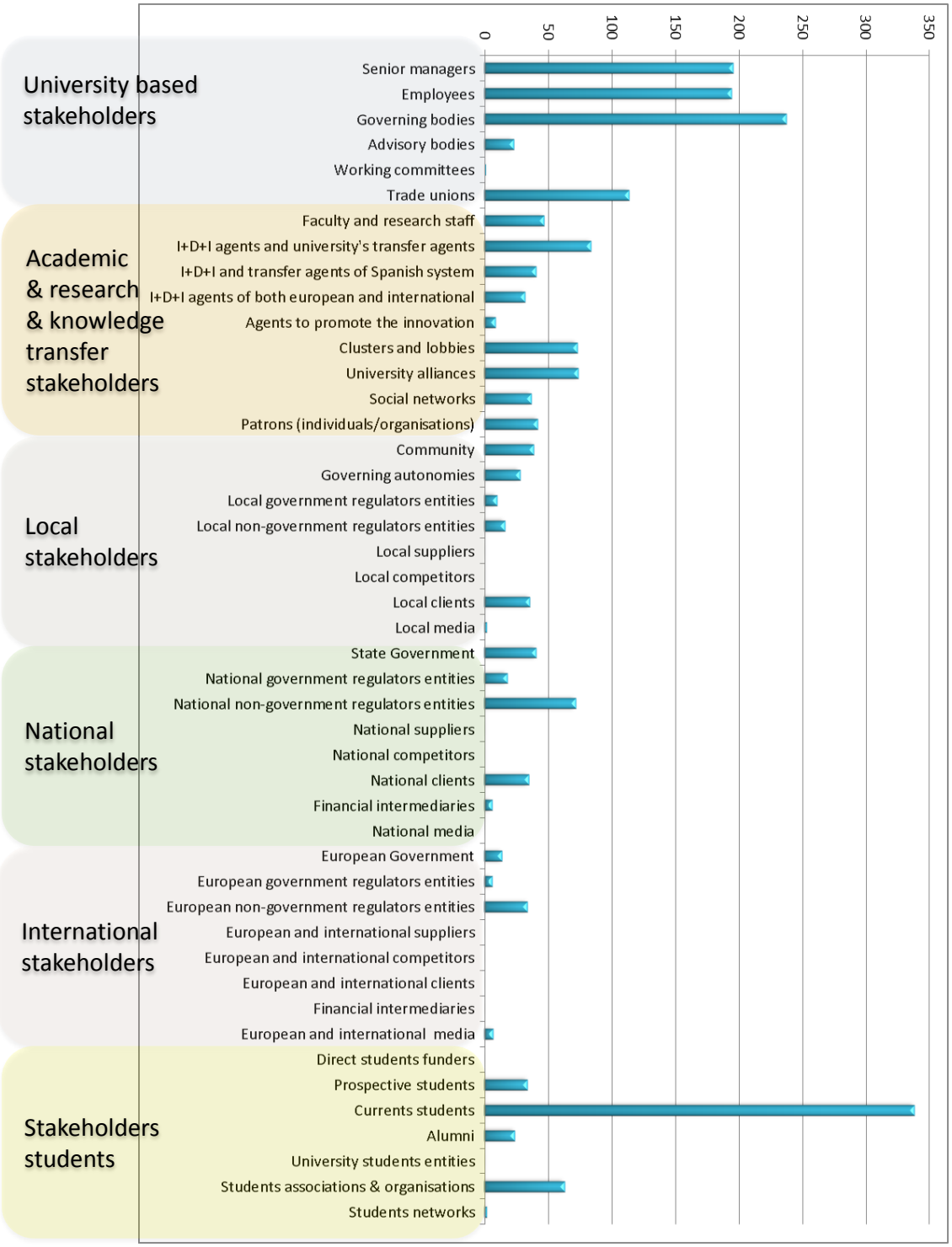
Figure 6.4 Website frequencies of Spanish public university stakeholders



Students and academic–research–knowledge transfer stakeholders (A & R & KT)

The remaining two-thirds of registers are aimed to provide information to students (22.8%) on the one hand and stakeholders in teaching, research, and knowledge transfer (19.9%) on the other hand. The minority of references to stakeholders are on the local (6.4%), national (10.3%), and European and international levels (2.8%) (see Figure 6.5).

Figure 6.5 Website frequencies of Spanish public university stakeholders



Likewise, looking at the sub-variables' distribution it can be concluded that only 26% (12 of a total of 46) of the variables that identify the current stakeholders of Spanish public universities appear significantly on the centre pages of the website.

Following Parmar et al. (2010), our results try to reflect the influence that stakeholders have on the university by showing the degree to which universities give priority to stakeholders' claims by observing the degree of attention given to stakeholders across the analysed websites.

The results show a clear orientation of Spanish public universities' websites towards displaying more information about the basic stakeholders than other groups of university stakeholders. This result supports Ma and Todorovic's (2011) arguments, which reflect that university departments only consider their internal stakeholders instead of dealing with a different set of external customers or stakeholders. In addition, the results support Jorge et al.'s (2014) conclusions, which suggest that the most implemented practices by Spanish universities are related to students, their commitment to society, and staff dimensions.

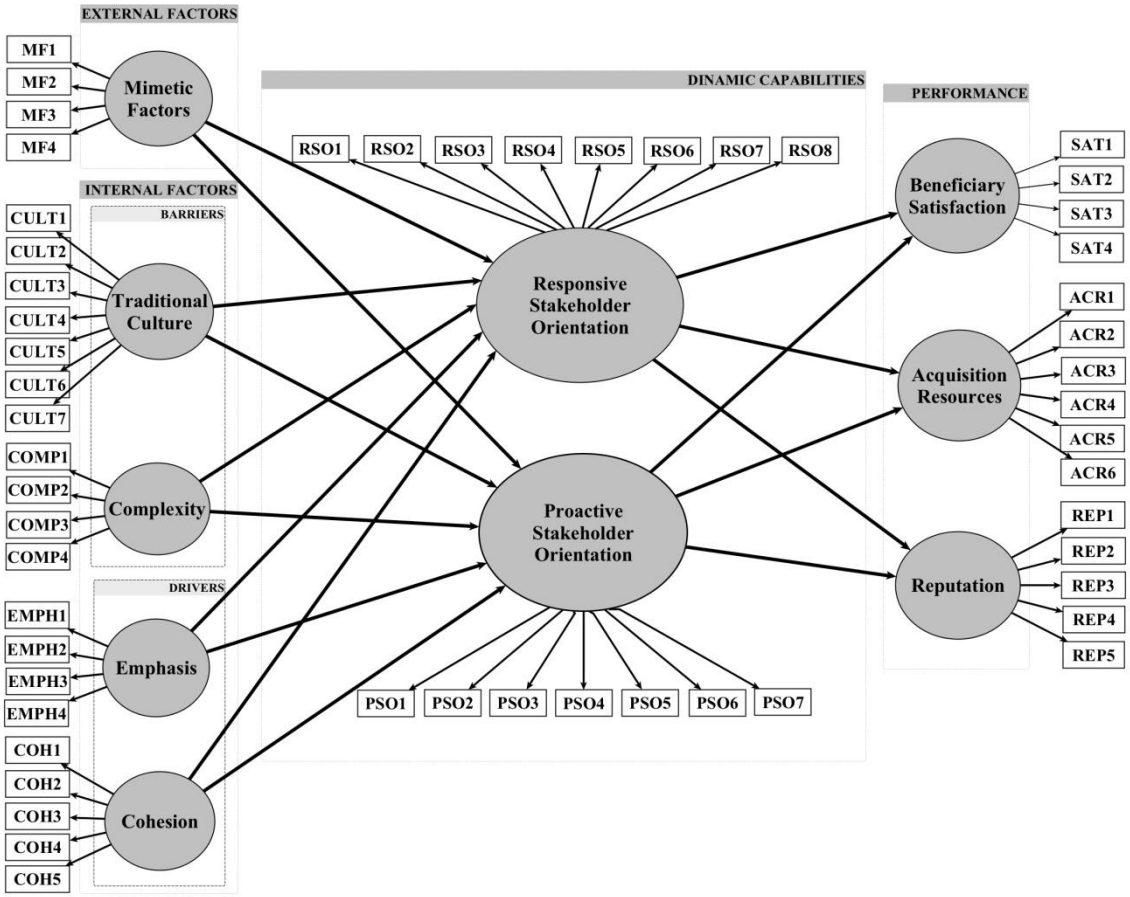
Conversely, the results are not consistent with the reality identified by Russo et al. (2007), who state that universities are increasingly embedded in specialised regional networks and innovation systems. In this respect, our results highlight that only 2.8% of the information provided on the universities' websites relates to local stakeholders.

6.3 Testing the proposed model

One of the key propositions of this thesis is to test whether the stakeholder orientation consists of two essential sets of behaviours, proactive and responsive, so the goal is assess whether the RSO and the PSO are statistically related but distinct constructs and to study their antecedents and consequences.

To measure each of the latent variables, we developed scales for those constructs considered in our theoretical model. To carry out this empirical analysis, as we commented in Chapter 5, we used the CBSEM model. Our initial structural model proposal is shown in Figure 6.6.

Figure 6.6 Structural model



6.3.1 Measure validation of the constructs

The first measure validation step consisted of an exploratory analysis of reliability and dimensionality. The Cronbach's alpha indicator (minimum value 0.7; Nunnally & Bernstein, 1978), item-to-total correlation (minimum value 0.3; Nurosis, 1993), and principal component analysis (PCA) provided the assessments of the initial reliability and dimensionality of the scales and they were estimated with SPSS. The criterion used

to eliminate individual indicators was the item-to-total correlation sub-scale (Bagozzi, 1982). The accepted minimum was the threshold of 0.3. Churchill (1979) recommends > 0.7 for alpha values and > 0.5 for item–total correlations. The unidimensionality was initially evaluated using a number of underlying factors in each sub-scale that demonstrated the PCA (Hair et al., 1998).

Therefore, twelve items (CULT1, CULT5, CULT7, COMP3, COMP4, RSO3, RSO6, RSO7, SAT1, ACR5, REP2, and REP4) were eliminated to improve the scales. Subsequently, all the items were adjusted to the required levels and a single factor was extracted from each scale.

To assess the measurement reliability and validity, a confirmatory factor analysis (CFA) containing all the multi-item constructs in our framework was estimated with EQS 6.1 (Bentler, 1995) through the use of the robust maximum likelihood method. Raw data screening showed evidence of non-normal distribution (Mardia's coefficient normalized estimate = 85.12) and although other estimation methods have been developed for use when the normality assumption does not hold, the recommendation of Hu et al. (1992) to correct the statistics rather than using a different estimation model were followed. Therefore, robust statistics can be provided (Satorra & Bentler, 1988).

Different confirmation analyses were then carried out to refine the scales and assess their validity and reliability levels. The definitive refinement was based on the methodology of the "Development of Structural Models" (Hair et al., 2006). This technique consists of eliminating items that do not match any of the three criteria proposed by Jöreskog and Sörbom (1993): the weak convergence criterion (Steenkamp & Van Trijp, 1991) means removing indicators that do not have significant factorial regression coefficients; the strong convergence criterion (Steenkamp & Van Trijp, 1991) means removing insubstantial indicators, that is, those with standardised coefficients of less than 0.5 (Hildebrant, 1987); finally, Jöreskog and Sörbom (1993) propose the removal of the indicators that contribute least to the explanation of the

model. Therefore, two items (CULT2 and ACR3) were eliminated for failing to meet some of the proposed criteria.

A further CFA was performed to demonstrate that the PSO and the RSO were separate, but correlated, constructs. The results of the final CFA are reported in Table 6.10 and suggest that our respecified measurement model provides a good fit to the data on the basis of a number of fit statistics. Although the chi-square value is statistically significant, the statistic is very sensitive to sample size and departures from multivariate normality and will very often result in the rejection of a well-fitting model (James, Mulaik & Brett, 1982). However, Marsh, Balla and McDonald (1988) recommend that this statistic should be considered acceptable if the ratio between the value of the chi-square and the number of degrees of freedom is less than 3, as in our case, and Teo, Luan and Sing (2008) if this ratio is less than 0.5. In addition, although the normed-fit index (NFI) value is a little lower than the commonly accepted value of over 0.90, the other indicators show values greater than the recommended 0.9 on the non-normed-fit index (NNFI) and the comparative fit index (CFI), and the root mean square of error approximation (RMSEA) takes values less than 0.05, indicative of an acceptable fit (Bentler, 1995; Bentler & Bonett, 1980; Hair et al., 2006). Therefore, the respecified measurement model was tentatively accepted as the study's "final" measurement model, and a number of tests were conducted to assess its reliability and validity.

Table 6.10 Internal consistency and convergent validity of the theoretical construct measures

variable	indicator	factor loading	robust *t*-value*	cronbach's alpha	composite reliability (CR)	average variance extracted (AVE)
MIMETIC FACTORS (MF)	MF1=V4	0.823	22.571	0.83	0.83	0.56
	MF2=V5	0.841	25.872			
	MF3=V6	0.614	16.651			
	MF4=V7	0.689	22.672			
TRADITIONAL CULTURE (CULT)	CULT3=V14	0.702	20.239	0.72	0.73	0.50
	CULT4=V15	0.793	21.520			
	CULT6=V17	0.552	13.211			

variable	indicator	factor loading	robust *t*-value*	cronbach's alpha	composite reliability (CR)	average variance extracted (AVE)
COMPLEXITY (COMPL)	COMP1=V19	0.741	18.814	0.80	0.80	0.66
	COMP2=V20	0.881	20.665			
EMPHASIS (EMPH)	EMPH1=V23	0.723	15.713	0.78	0.80	0.50
	EMPH2=V24	0.727	19.127			
	EMPH3=V25	0.794	20.062			
	EMPH4=V26	0.578	12.000			
COHESION (COH)	COH1=V27	0.774	24.581	0.89	0.89	0.63
	COH2=V28	0.700	19.944			
	COH3=V29	0.795	27.369			
	COH4=V30	0.874	35.914			
	COH5=V31	0.809	26.842			
RSO	RSO1=V32	0.686	18.720	0.91	0.91	0.66
	RSO4=V33	0.839	28.646			
	RSO2=V34	0.894	37.001			
	RSO8=V35	0.844	31.348			
	RSO5=V36	0.799	30.815			
PSO	PSO1=V58	0.85	33.159	0.92	0.93	0.65
	PSO2=V59	0.872	35.476			
	PSO3=V60	0.813	35.531			
	PSO4=V61	0.628	18.731			
	PSO5=V62	0.837	34.339			
	PSO6=V63	0.806	32.041			
	PSO7=V64	0.816	31.860			
BENEFICIARY SATISFACTION (SAT)	SAT2=V66	0.878	23.140	0.84	0.86	0.67
	SAT3=V67	0.84	22.619			
	SAT4=V68	0.734	20.310			
RESOURCE ACQUISITION (ACR)	ACR1=V69	0.865	26.832	0.80	0.81	0.59
	ACR2=V70	0.831	29.146			
	ACR4=V72	0.582	17.685			
REPUTATION (REP)	REP1=V75	0.646	17.718	0.76	0.76	0.51
	REP3=V77	0.747	21.791			
	REP5=V79	0.746	20.336			
Robust goodness of fit index: Satorra-Bentler χ^2 (657 degree of freedom, df) = 1793.71; χ^2/df=2.73; NFI= 0.881; NNFI= 0.910; CFI=0.921; RMSEA=0.047.						
*p< 0.01						

Having achieved our adjusted model, we verified its reliability and validity. The *reliability of the constructs* is presented in Table 6.11 and demonstrates high internal

consistency of the constructs. In each case, Cronbach's alpha exceeds the 0.7 recommendation of Nunnally and Bernstein (1994). *Composite reliability* (CR) represents the shared variance among a set of observed variables measuring an underlying construct (Fornell & Larcker, 1981). Generally, a CR of at least 0.6 is considered desirable (Bagozzi, 1994). This requirement is met for every factor. The average variance extracted (AVE) was also calculated for each construct, resulting in AVEs greater than 0.5 (Fornell & Larcker, 1981). Therefore, the ten scales demonstrate acceptable levels of reliability.

Convergent validity indicates whether the items that compose a determined scale converge on only one construct. It was tested by checking whether the factor loadings of the confirmatory model are statistically significant (level of 0.01) and higher than 0.5 points (Sanzo, Santos, Vázquez & Álvarez, 2003; Steenkamp & Geyskens, 2006). Moreover, the averages of the item-to-factor loadings are higher than 0.70 (Hair et al., 2006). In addition, we used the average variance extracted (AVE) to contrast the convergent validity. Fornell and Larcker (1981) suggest that adequate convergent validity measures should contain less than 50% error variance (the AVE should be 0.5 or above). The results are satisfactory, as shown in Table 6.11.

Discriminant validity verifies whether a determined construct is significantly distinct from other constructs that are not theoretically related to it. Evidence of this validity was provided in two ways (Table 6.11). First, none of the 95% confidence intervals of the individual elements of the latent factor correlation matrix contain a value of 1.0 (Anderson & Gerbing, 1988). Second, the shared variance between pairs of constructs is always less than the corresponding AVE (Fornell & Larcker, 1981).

Therefore, the *construct validity* was verified by assessing the convergent validity and discriminant validity of the scale (Vila et al., 2000).

On the basis of these criteria, we concluded that the measures in the study provide sufficient evidence of reliability and convergent and discriminant validity. Thus, the revised measurement model was retained as the study's final measurement model.

Table 6.11 Discriminant validity of the theoretical construct measures

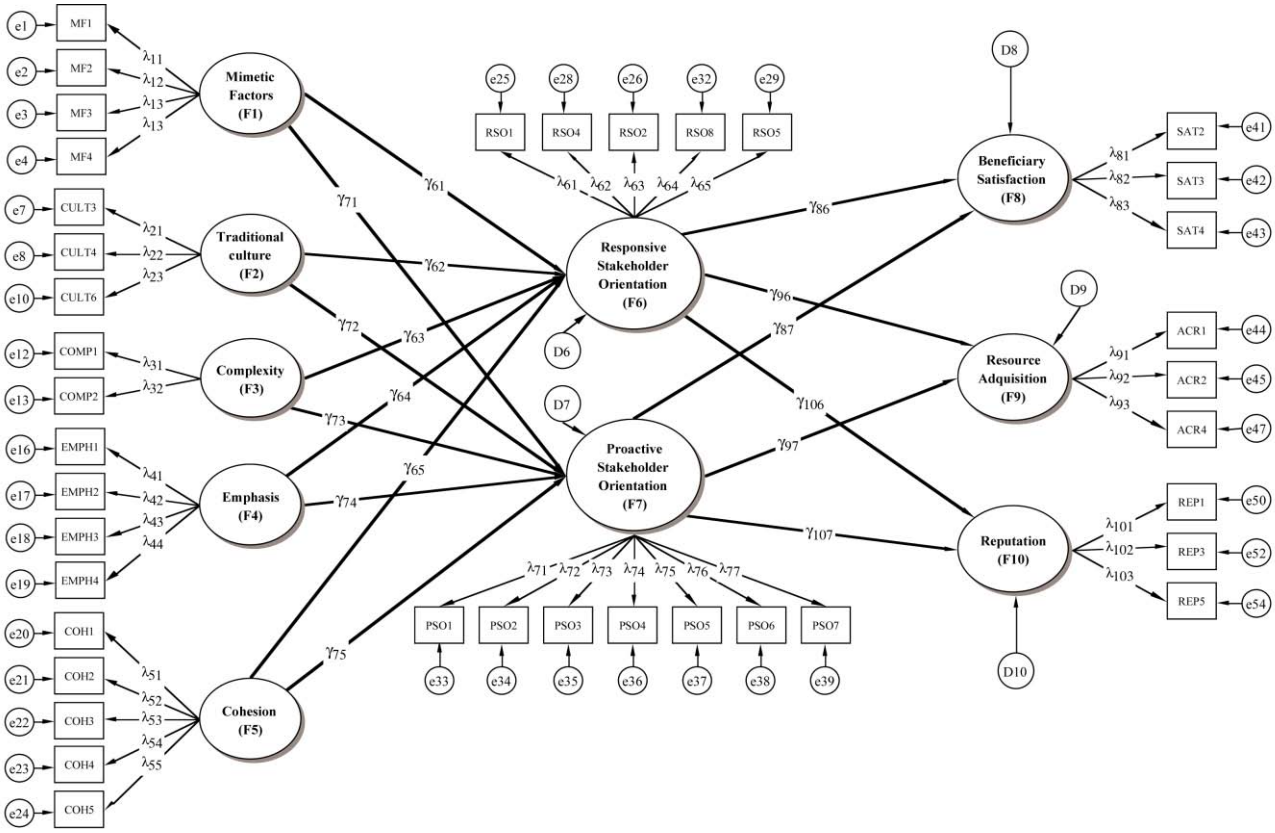
	MF	CULT	COMP	EMPH	COH	RSO	PSO	SAT	ACR	REP
MF	**0.56**	[0.02.0.20]	[0.05.0.22]	[0.31.0.48]	[0.07.0.24]	[0.21.0.38]	[0.17.0.34]	[0.06.0.24]	[0.04.0.22]	[-0.05.0.14]
CULT	0.013	**0.50**	[0.41.0.58]	[0.05.0.25]	[-0.26,-0.07]	[-0.10.0.09]	[-0.10.0.08]	[-0.31,-0.11]	[-0.17.0.02]	[-0.17.0.03]
COMP	0.018	0.241	**0.66**	[0.17.0.35]	[-0.35,-0.18]	[-0.12.0.07]	[-0.16.0.01]	[-0.23,-0.05]	[-0.23,-0.06]	[-0.19.0.00]
EMPH	0.155	0.024	0.068	**0.50**	[0.06.0.23]	[0.38.0.53]	[0.34.0.49]	[0.12.0.29]	[0.13.0.31]	[0.07.0.25]
COH	0.023	0.028	0.071	0.020	**0.63**	[0.31.0.46]	[0.29.0.44]	[0.42.0.58]	[0.41.0.56]	[0.32.0.48]
RSO	0.088	0.001	0.001	0.204	0.148	**0.66**	[0.68.0.78]	[0.40.0.54]	[0.33.0.49]	[0.28.0.44]
PSO	0.066	0.001	0.006	0.171	0.133	0.536	**0.65**	[0.33.0.50]	[0.31.0.47]	[0.34.0.50]
SAT	0.022	0.044	0.019	0.042	0.247	0.216	0.174	**0.67**	[0.55.0.69]	[0.58.0.72]
ACR	0.017	0.005	0.020	0.047	0.233	0.166	0.150	0.387	**0.59**	[0.51.0.66]
REP	0.002	0.005	0.010	0.025	0.161	0.131	0.177	0.420	0.340	**0.51**

The diagonal represents the AVE, while above the diagonal de 95 per cent confidence interval for the estimated factors correlations is provided, below the diagonal, the shared variance (squared correlations) is represented.

6.3.2 Structural equation model analysis

With the objective of testing the proposed hypotheses, we developed a structural equation model, shown in Figure 6.7.

Figure 6.7 Structural equation model to estimate



The results are reported and depicted in Table 6.12 and Figure 6.8, respectively. The overall fit of the model is acceptable because the goodness-of-fit statistic is satisfactory, with the χ^2/df ratio lower than 3.0.

Table 6.12 Structural model results

Hypothesis	Path	Standardised path coefficients		Robust *t*-value
H1	Mimetic factors based on copy successful actions of other public universities have a positive effect on the adoption of a RSO.	0.107	**	2.412
H2	Mimetic factors based on copy successful actions of other public universities have a positive effect on the adoption of a PSO.	0.080	*	1744
H3	Traditional culture of public universities has a negative effect on the adoption of a RSO.	-0.001	n.s.	-0.018
H4	Traditional culture of public universities has a negative effect on the adoption of a PSO.	0.035	n.s.	0.743
H5	Complexity of public universities has a negative effect on the adoption of a RSO.	-0.059	n.s.	-1.164
H6	Complexity of public universities has a negative effect on the adoption of a PSO.	-0.132	***	-2.758
H7	Emphasis shown by university managers on university's stakeholders has a positive effect on the adoption of a RSO.	0.386	***	7.392
H8	Emphasis shown by university managers on university's stakeholders has a positive effect on the adoption of a PSO.	0.371	***	7.344
H9	Cohesion amongst public university structures has a positive effect on the adoption of a RSO.	0.311	***	7.106
H10	Cohesion amongst public university structures has a positive effect on the adoption of a PSO.	0.278	***	6.558
H11	RSO of public universities has a positive effect on the beneficiary satisfaction of their stakeholders.	0.354	***	4.826
H12	PSO of public universities has a positive effect on the beneficiary satisfaction of their stakeholders.	0.161	**	2.223
H13	RSO of public universities has a positive effect on their resource acquisition.	0.278	***	4.151
H14	PSO of public universities has a positive effect on their resource acquisition.	0.188	***	2.958
H15	RSO of public universities has a positive effect on their reputation.	0.122	*	1.899
H16	PSO of public universities has a positive effect on their reputation.	0.332	***	5.006

*=p<0.1; **=p<0.05; ***=p<0.01; n.s.=non-significance

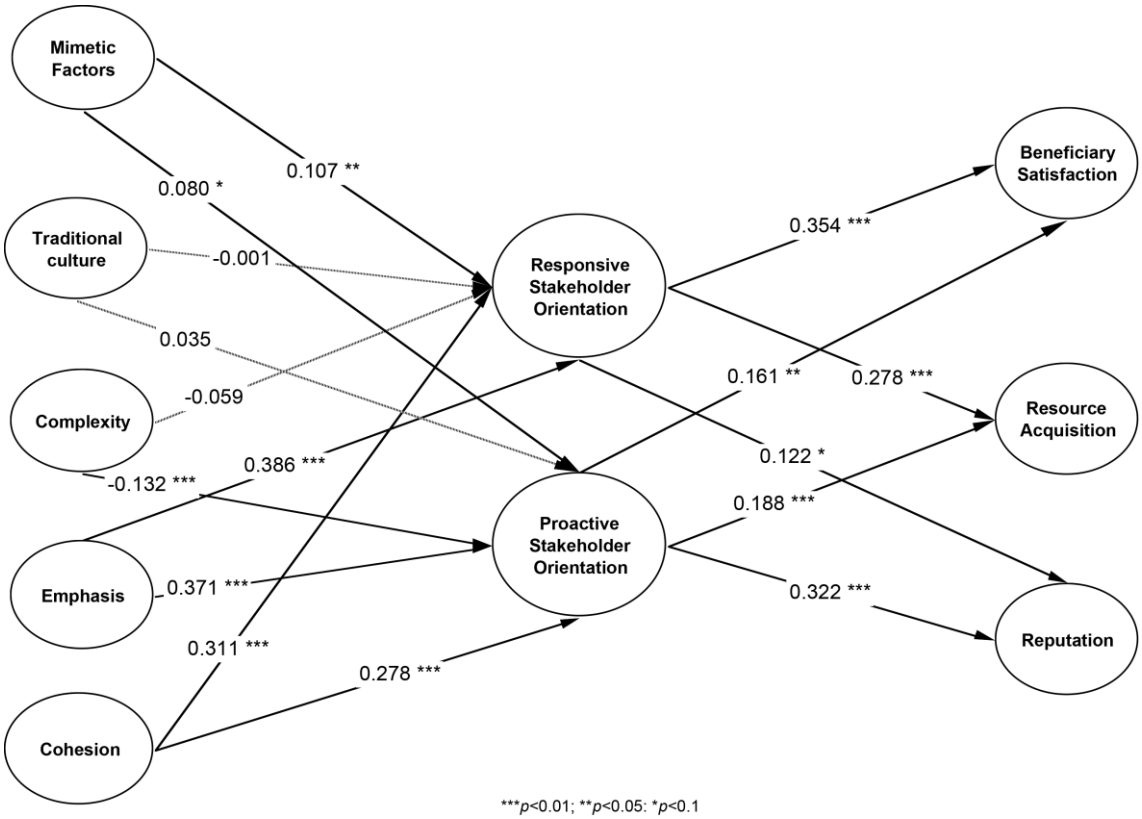
Robust goodness of fit indices: χ^2 (672 df) = 1920.15; χ^2/df=2.85; NFI= 0.881; NNFI= 0.910; CFI=0.921; RMSEA=0.047

The results make it possible to put forward various suggestions. First, focusing on the antecedents of the stakeholder orientations – RSO and PSO – the results suggest that

several factors drive the RSO and PSO of Spanish public universities. With regard to external antecedents, H1 and H2, it was hypothesised that the major *mimetic effects* on the RSO and PSO would cause a higher level of them; the results confirm both hypotheses, respectively ((β = 0.107; p<0.05) and (β = 0.080; p<0.1)).

Regarding internal antecedents as barriers, contrary to the hypothesis, *traditional culture* does not appear to be related to the RSO and PSO. H3 appears to have a negative (β = -0.001) but non-significant relationship with RSO, and H4, on the contrary, appears to have a positive effect on the PSO (β = 0.035), but it is also non-significant.

Figure 6.8 Hypotheses formulated – Synthesis of the results



As expected, *complexity* appears to inhibit the RSO and PSO, although for the RSO the relationship is non-significant; in H5 and H6 for both factors –RSO and PSO– complexity has negative and significant effects, but in H5 the relationship appears non-

significant (β = -0.059; n.s.), while in H6 the relationship appears significant β = (-0.132; p<0.01). In addition, the results call for additional research to examine the relationship between the complexity and the RSO.

Finally, for internal antecedents as drivers, *emphasis* (H7 and H8) and *cohesion* (H9 and H10), all the hypotheses have positive and significant effects. Given β = 0.386 and β = 0.371 emphasis coefficient values for RSO and PSO, respectively, and β = 0.311 and β = 0.278 cohesion coefficient values for RSO and PSO, respectively, these antecedents emerge as the ones with a higher number of positive influences over the capabilities constructs – RSO and PSO. Thus, the amount of *emphasis* of top managers appears to be very strongly related to the RSO and PSO within Spanish public universities.

The results reveal that both the RSO and the PSO appear to be significantly related to the proposed measures of university performance. With regard to the consequences of the RSO, H11, H13, and H15 posited a positive relationship between RSO and beneficiary satisfaction (β = 0.354; p<0.01), resource acquisition (β = 0.278; p<0.05), and reputation (β = 0.122; p<0.1). Moreover, with regard to the consequences of the PSO, H12, H14, and H16 posited a positive relationship between RSO and beneficiary satisfaction (β = 0.161; p<0.01), resource acquisition (β = 0.188; p<0.1), and reputation (β = 0.332; p<0.01).

6.3.3 Multigroup analysis and the control variables

With the aim of analysing the proposed control variables, we used the model of multi-group structural equations, considered one of the dominant approaches to multi-group data analysis (Hair et al., 2006). To compare the different groups identified for each control variable, we must first test the measurement invariance (Hair et al., 2006).

Since our model does not have a normal distribution to test the metric invariance, we employed the **Satorra–Bentler scaled chi-square** (S-Bχ^2) through the SBDIFF *software* by Crawford and Henry (2003).

University size

As mentioned in previous chapters, our goal is to verify the hypothesis that the coefficients between constructs proposed in our model are invariant for different groups considered simultaneously for the university size.

As we showed in Chapter 4, considering the institutional size as a variable (SZE), we clustered the Spanish public universities as follows: extra-large (EXL, more than 50,000 students), large (LRG, between 25,000 and 50,000 students), and medium and small (M&S, fewer than 25,000 students).

Through the metric invariance test (Table 6.13), we can affirm the existence of metric invariance (dif. S-Bχ^2 = 93.175); therefore, we can proceed to assess the invariance of the control variable of size.

Table 6.13 Measurement invariance test

Model	S-Bχ^2	χ^2†	d.f.	Dif. S-Bχ^2‡	Δd.f.	p	RMSEA	SRMR†	CFI	NNFI
Single group solution										
EXL (n=166)	885.1740	1037.473	657				0.046	0.061	0.931	0.922
LRG (n=377)	7254.722	1589.060	657				0.049	0.049	0.910	0.899
M&S (n=252)	1102.48	1270.56	657				0.052	0.055	0.900	0.887
Measurement invariance (n=795)										
Equal form	3255.918	3897.318	1971				0.050	0.055	0.911	0.900
Equal factor loadings	3349.674	4006.817	2049	93.175	78	0.1157	0.049	0.071	0.910	0.902

*p<0.01
†No robust
‡Calculate with the SBDIFF software

Thus, we compared the multi-group model without restriction with each of the models with each of the constraints, which means sixteen different models (see Table 6.14). The

results of the multi-group analysis are shown in Table 6.15. In summary, we can conclude that the estimated coefficients between constructs proposed in our model are invariant among all groups considered, except for the restriction related to hypothesis H12 ($p<0.05$).

Table 6.14 Chi-square test for each of the multi-group restrictions among the subsamples of the university size

Model	S-Bχ^2	χ^2†	d.f.	Dif. S-Bχ^2‡	Δd.f.	p
Multi-sample model	3499.91	4190.02	2074			
Multi-sample model with restriction:						
H1: (1,F6,F1)=(2,F6,F1)	3501.48	4192.50	2076	1.8242	2	0.402
H3: (1,F6,F2)=(2,F6,F2)	3500.81	4190.43	2076	0.4015	2	0.818
H5: (1,F6,F3)=(2,F6,F3)	3501.16	4191.09	2076	1.0359	2	0.596
H7: (1,F6,F4)=(2,F6,F4)	3501.14	4191.99	2076	1.4237	2	0.491
H9: (1,F6,F5)=(2,F6,F5)	3501.65	4191.52	2076	1.4955	2	0.473
H2: (1,F7,F1)=(2,F7,F1)	3500.22	4190.50	2076	0.4036	2	0.817
H4: (1,F7,F2)=(2,F7,F2)	3500.59	4190.66	2076	1.1702	2	0.557
H6: (1,F7,F3)=(2,F7,F3)	3503.15	4192.57	2076	3.1234	2	0.209
H8: (1,F7,F4)=(2,F7,F4)	3501.12	4191.54	2076	1.2336	2	0.539
H10: (1,F7,F5)=(2,F7,F5)	3501.63	4191.08	2076	1.1957	2	0.549
H11:(1,F8,F6)=(2,F8,F6)	3502.44	4193.56	2076	2.6142	2	0.271
H12:(1,F8,F7)=(2,F8,F7)	3506.78	4198.43	2076	6.7826	2	0.033**
H13:(1,F9,F6)=(2,F9,F6)	3500.90	4191.16	2076	1.0017	2	0.606
H14:(1,F9,F7)=(2,F9,F7)	3500.72	4191.07	2076	0.8876	2	0.641
H15:(1,F10,F6)=(2,F10,F6)	3500.79	4190.10	2076	0.1102	2	0.946
H16:(1,F10,F7)=(2,F10,F7)	3501.94	4192.14	2076	1.8920	2	0.388

F1=Mimetic factors; F2=Traditional culture; F3=Complexity; F4=Emphasis; F5=Cohesion; F6=RSO; F7=PSO; F8=Beneficiary satisfaction; F9=Acquisition of resources; F10=Reputation

Hence, from the results obtained we propose that the significant coefficient obtained from the H12 highlights the existence of the university size's effect on the relationship between PSO and beneficiary satisfaction. Specifically, we suggest that size moderates the PSO and beneficiary satisfaction performance relationship, being greater in extra-

large universities (β_{EXL}= 0.455, p<0.01) and lower in the other cases (β_{LRG}= 0.009, n.s.; $\beta_{M\&S}$= 0.241, p<0.50). Since the relationship between RSO and beneficiary satisfaction is not significant, we can observe that in this case the relationship is stronger in the smallest universities ($\beta_{M\&S}$= 0.455, p<0.01) than in the other cases (β_{EXL}= 0.147, n.s.; β_{LRG}= 0.381,p<0.01).

In summary, from the results highlighted above, we suggest it has been possible to establish the following proposition:

P1 *The greater the university size, the stronger the relationship between the PSO and beneficiary satisfaction.*

Table 6.15 Comparison of path between the subsamples of university size

H	Path	Total sample†			Multi-sample Model ‡										
					EXL			LRG			M&S			SZE control variable	
		Standardised path coefficients		Robust *t* value	Standardised path coefficients		Robust *t* value	Standardised path coefficients		Robust *t* value	Standardised path coefficients		Robust *t* value	Δ ΔS-Bχ^2 (Δd.f.=2)	*p*
H1	F1 → F6	0.107	**	2.412	-0.005	n.s.	-0.054	0.171	***	2.568	0.090	n.s.	1.191	1.8242	0.402
H3	F2 → F6	-0.001	n.s.	-0.018	-0.000	n.s.	-0.003	-0.034	n.s.	-0.486	0.032	n.s.	0.428	0.4015	0.818
H5	F3 → F6	-0.059	n.s.	-1.164	0.015	n.s.	0.175	-0.047	n.s.	-0.612	-0.114	n.s.	-1.139	1.0359	0.596
H7	F4 → F6	0.386	***	7.392	0.423	***	4.274	0.348	***	4.684	0.424	***	5.410	1.4237	0.491
H9	F5 → F6	0.311	***	7.106	0.390	***	4.708	0.264	***	4.120	0.299	***	4.373	1.4955	0.473
H2	F1 → F7	0.080	*	1.744	0.144	n.s.	1.339	0.068	n.s.	0.986	0.097	n.s.	1.277	0.4036	0.817
H4	F2 → F7	0.035	n.s.	0.743	-0.030	n.s.	-0.256	0.042	n.s.	0.610	0.073	n.s.	0.827	1.1702	0.557
H6	F3 → F7	-0.132	***	-2.758	-0.004	n.s.	-0.042	-0.175	***	-2.601	-0.167	n.s.	-0.728	3.1234	0.209
H8	F4 → F7	0.371	***	7.344	0.268	***	2.611	0.381	***	5.256	0.427	***	5.067	1.2336	0.539
H10	F5 → F7	0.278	***	6.558	0.354	***	4.234	0.236	***	3.672	0.226	***	3.144	1.1957	0.549
H11	F6 → F8	0.354	***	4.826	0.147	n.s.	1.167	0.381	***	3.698	0.426	***	3.760	2.6142	0.271
H12	F7 → F8	0.161	**	2.223	0.455	***	3.515	0.009	n.s.	0.092	0.241	**	2.187	6.7826	0.033**
H13	F6 → F9	0.278	***	4.151	0.237	**	2.039	0.237	**	2.477	0.407	***	3.454	1.0017	0.606
H14	F7 → F9	0.188	***	2.958	0.271	**	2.310	0.123	n.s.	1.353	0.195	*	1.733	0.8876	0.641
H15	F6 → F10	0.122	*	1.899	0.151	n.s.	1.180	0.114	n.s.	1.282	0.134	n.s.	1.220	0.1102	0.946
H16	F7 → F10	0.332	***	5.006	0.305	**	2.221	0.234	***	2.579	0.493	***	4.302	1.8920	0.388

† S-Bχ^2 (df=672)=1920.15; RMSEA=0.047; SRMR; CFI=0.921; NNFI=910.
‡ S-Bχ^2 (df=2074)=3499.9088; χ^2=4190.017; RMSEA=0.051; SRMR=0.076; CFI=0.901; NNFI=0.894.

***p<0.01; **=p<0.05; *p<0.1; ns=non-significance

F1=Mimetic factors; F2=Traditional culture; F3=Complexity; F4=Emphasis; F5=Cohesion; F6=RSO; F7=PSO; F8=Beneficiary satisfaction; F9=Acquisition of resources; F10=Reputation

Seniority of the university

As mentioned in previous chapters, our goal is to verify the hypothesis that the coefficients between constructs proposed in our model are invariant for different groups considered simultaneously for the university size. As we showed in Chapter 4, we consider seniority as a variable (ANT) clustered into three groups: senior universities (SEN), modern universities (MDR), and young universities (YNG).

As in the section above, we first applied the metric invariance test (Table 6.16). The results revealed the existence of metric invariance (dif. S-Bχ^2 = 105.24); therefore, we could proceed to assess the invariance of the control variable of seniority. Thus, we compared the multi-group model without restriction with each of the models with each of the constraints, which means sixteen different models (see Table 6.17). The results of the multi-group analysis are shown in Table 6.18.

Table 6.16 Measurement invariance test

Model	S-Bχ^2	χ^2†	d.f	Dif. S-Bχ^2‡	Δd.f.	p	RMSEA	SRMR†	CFI	NNFI
Single group solution										
SEN (n=316)	1037.62	1300.60	657				0.043	0.048	0.933	0.925
MDR (n=241)	1125.55	1407.11	657				0.055	0.059	0.892	0.878
YNG (n=238)	1165.89	1281.05	657				0.057	0.057	0.885	0.870
Measurement invariance (n= 795)										
Equal form	3321.73	3988.81	1971				0.051	0.055	0.907	0.895
Equal factor loadings	3428.98	4112.63	2094	105.24	123	0.87	0.051	0.069	0.905	0.897

*p<0.01
†No robust
‡Calculate with the SBDIFF software

Table 6.17 Chi-square test for each of the multi-group restrictions among the subsamples of the seniority of the university

Model	S-Bχ^2	χ^2†	d.f.	Dif. S-Bχ^2‡	Δd.f.	p
Multi-sample model	3547.73	4263.26	2074			
Multi-sample model with restriction:						
H1: (1,F6,F1)=(2,F6,F1)=(3,F6,F1)	3549.58	4266.56	2076	2.2014	2	0.332
H3:(1,F6,F2)=(2,F6,F2)=(3,F6,F2)	3548.68	4264.64	2076	1.1114	2	0.573
H5: (1,F6,F3)=(2,F6,F3)=(3,F6,F3)	3548.11	4264.01	2076	0.5530	2	0.758
H7: (1,F6,F4)=(2,F6,F4)=(3,F6,F4)	3548.44	4264.07	2076	0.6725	2	0.714
H9: (1,F6,F5)=(2,F6,F5)=(3,F6,F5)	3548.62	4264.32	2076	0.8490	2	0.654
H2: (1,F7,F1)=(2,F7,F1)=(3,F7,F1)	3547.95	4265.25	2076	1.1261	2	0.569
H4: (1,F7,F2)=(2,F7,F2)=(3,F7,F2)	3548.25	4263.78	2076	0.4266	2	0.807
H6: (1,F7,F3)=(2,F7,F3)=(3,F7,F3)	3548.47	4264.09	2076	0.6929	2	0.707
H8: (1,F7,F4)=(2,F7,F4)=(3,F7,F4)	3549.20	4266.02	2076	1.8440	2	0.398
H10: (1,F7,F5)=(2,F7,F5=(3,F7,F5)	3549.44	4264.98	2076	1.5435	2	0.462
H11:(1,F8,F6)=(2,F8,F6)=(3,F8,F6)	3549.96	4266.71	2076	2.4501	2	0.294
H12:(1,F8,F7)=(2,F8,F7)=(3,F8,F7)	3551.40	4269.33	2076	3.6236	2	0.163
H13:(1,F9,F6)=(2,F9,F6)=(3,F9,F6)	3548.15	4263.96	2076	0.5530	2	0.758
H14:(1,F9,F7)=(2,F9,F7)=(3,F9,F7)	3548.70	4264.21	2076	0.8083	2	0.667
H15:(1,F10,F6)=(2,F10,F6)=(3,F10,F6)	3548.32	4263.37	2076	0.0980	2	0.952
H16:(1,F10,F7)=(2,F10,F7)=(3,F10,F7)	3549.25	4264.79	2076	1.3474	2	0.510

F1=Mimetic factors; F2=Traditional culture; F3=Complexity; F4=Emphasis; F5=Cohesion; F6=RSO; F7=PSO; F8=Beneficiary satisfaction; F9=Acquisition of resources; F10=Reputation

In summary, the estimated coefficients between constructs proposed in our model are invariant among all groups considered. Thus, we can conclude that the hypotheses established in our model are the same for both the oldest universities that for those more recently established universities.

Table 6.18 Comparison of path between the subsamples of seniority of the university

H	Path	Total sample†			Multi sample Model‡											
					SEN			MDR			YNG			ANT control variable		
		Standardized path coefficients		Robust *t* value	Standardized path coefficients		Robust *t* value	Standardized path coefficients		Robust *t* value	Standardized path coefficients		Robust *t* value	$\Delta\,\Delta$S-Bχ^2 (Δd.f.=2)	*p*	
H1	F1 → F6	0.107	**	2.412	0.086	n.s.	1.277	0.210	***	2.570	0.046	n.s.	0.587	2.2014	0.332	
H3	F2 → F6	-0.001	n.s.	-0.018	-0.008	n.s.	-0.112	-0.068	n.s.	-0.796	0.064	n.s.	0.778	1.1114	0.573	
H5	F3 → F6	-0.059	n.s.	-1.164	-0.056	n.s.	-0.794	-0.006	n.s.	-0.063	-0.124	n.s.	-1.228	0.5530	0.758	
H7	F4 → F6	0.386	***	7.392	0.365	***	5.013	0.357	***	4.141	0.437	***	4.902	0.6725	0.714	
H9	F5 → F6	0.311	***	7.106	0.339	***	5.237	0.230	***	3.272	0.324	***	3.888	0.8490	0.654	
H2	F1 → F7	0.080	*	1.744	0.078	n.s.	1.053	0.165	**	2.033	0.033	n.s.	0.424	1.1261	0.569	
H4	F2 → F7	0.035	n.s.	0.743	0.065	n.s.	0.757	0.014	n.s.	0.188	0.035	n.s.	0.458	0.4266	0.807	
H6	F3 → F7	-0.132	***	-2.758	-0.117	*	-1.649	-0.190	**	-2.273	-0.114	n.s.	-1.153	0.6929	0.707	
H8	F4 → F7	0.371	***	7.344	0.272	***	3.234	0.427	***	5.006	0.441	***	5.224	1.8440	0.398	
H10	F5 → F7	0.278	***	6.558	0.312	***	4.809	0.181	**	2.484	0.297	***	4.099	1.5435	0.462	
H11	F6 → F8	0.354	***	4.826	0.279	**	2.301	0.505	***	4.355	0.305	**	2.609	2.4501	0.294	
H12	F7 → F8	0.161	**	2.223	0.234	**	2.033	-0.046	n.s.	-0.377	0.272	**	2.220	3.6236	0.163	
H13	F6 → F9	0.278	***	4.151	0.317	***	3.315	0.294	**	2.393	0.213	n.s.	1.709	0.5530	0.758	
H14	F7 → F9	0.188	***	2.958	0.212	**	2.258	0.096	n.s.	0.828	0.247	**	1.972	0.8083	0.667	
H15	F6 → F10	0.122	*	1.899	0.134	n.s.	1.350	0.078	n.s.	0.721	0.084	n.s.	0.646	0.0980	0.952	
H16	F7 → F10	0.332	***	5.006	0.318	***	3.136	0.305	***	2.662	0.454	***	3.476	1.3474	0.510	

† S-Bχ^2 (df=672)=1920.15; RMSEA=0.047; SRMR; CFI=0.921; NNFI=910.
‡ S-Bχ^2 (df=2074)=3547.73; χ^2 = 4263.26; RMSEA=0.052; SRMR=0.075; CFI=0.898; NNFI=0.891.

***p<0.01; **=p<0.05; *p<0.1; ns=non-significance

F1=Mimetic factors; F2=Traditional culture; F3=Complexity; F4=Emphasis; F5=Cohesion; F6=RSO; F7=PSO; F8=Beneficiary satisfaction; F9=Acquisition of resources; F10=Reputation

Autonomous communities

As mentioned in previous chapters, our goal is to verify the hypothesis that the coefficients between constructs proposed in our model are invariant for different groups considered simultaneously for the autonomous coomunities. As we showed in Chapter 4, we consider the *autonomous communities* variable (CCAA) as being clustered into two groups: CCAA1 (Andalucia, Cataluña, Valencia and Madrid) and CCAA2 (the rest of autonomous communities).

As in the section above, we first perform the metric invariance test (Table 6.19). The results show that the difference in the Satorra–Bentler chi-square is significant (dif. S-Bχ^2 = 55.81; p<0.01). Thus, we can conclude that imposing equal restrictions equal to factorial loads significantly impairs the fit, so they are not acceptable, implying that we cannot affirm the factorial invariance of the measurement instrument.

Table 6.19 Measurement invariance test

Model	S-Bχ2	χ2†	d.f.	Dif. S-Bχ2‡	Δd.f	p	RMSEA	SRMR†	CFI	NNFI
	Single group solution									
CCAA1 (n=497)	1427.65	1770.72	657				0.049	0.045	0.916	0.906
CCAA2 (n=298)	1113.47	1349.59	657				0.048	0.050	0.913	0.902
	Measurement invariance (n=795)									
Equal form	2544.80	3120.34	1314				0.049	0.048	0.915	0.904
Equal factor loading	2602.10	3183.08	1353	55.81	39	0.04	0.048	0.058	0.913	0.905

*p<0.01
†No robust
‡Calculate with the SBDIFF software

However, if we had partial invariance, which means that there are at least two invariant factorial loads for each factor, we could follow and evaluate the control variable of CCAA on the relationships proposed (Byrne, 2008; Byrne, Shavelson & Muthén, 1989; Muth & Christoffersson, 1981; Hair et al., 2006). In our case, because our model is not distributed normally, we cannot analyse the Lagrange multipliers (which are constructed

with the normal chi-square and which the program EQS offers). Therefore, we must use the Satorra–Bentler chi-square and employ the corrections proposed by Satorra and Bentler (2001). The results are reflected in Table 6.20.

If the significance associated with a constraint is less than 1%, it means that removing it significantly improves the fit. Contrarily, if it exceeds 1%, it implies that removing it does not improve the fit; in order to keep it, it is acceptable. Consequently, if there are two factors that load on it, its significance is > 1%, and partial invariance will have been confirmed.

Table 6.20 Satorra–Bentler chi-square differences with the equal form model by introducing each restriction

Model	S-Bχ^2	χ^2†	d.f	Dif. S-Bχ^2‡	Δd.f	p
Equal form	2544.80	3120.34	1314			
Equal factor loadings						
(1,V4,F1)=(2,V4,F1)	2548.57	3124.21	1315	4.6743	1	0.037
(1,V5,F1)=(2,V5,F1)	2545.12	3120.37	1315	0.0919	1	0.762
(1,V6,F1)=(2,V6,F1)	2545.39	3122.89	1315	1.1876	1	0.276
(1,V7,F1)=(2,V7,F1)	2546.11	3122.92	1315	1.4894	1	0.222
(1,V14,F2)=(2,V14,F2)	2545.05	3120.54	1315	0.2519	1	0.616
(1,V15,F2)=(2,V15,F2)	2545.98	3120.88	1315	0.7731	1	0.379
(1,V17,F2)=(2,V17,F2)	2546.02	3122.11	1315	1.2895	1	0.256
(1,V19,F3)=(2,V19,F3)	2545.26	3120.36	1315	0.1041	1	0.747
(1,V20,F3)=(2,V20,F3)	2546.72	3121.76	1315	1.8803	1	0.170
(1,V23,F4)=(2,V23,F4)	2544.85	3122.10	1315	0.8601	1	0.354
(1,V24,F4)=(2,V24,F4)	2544.93	3120.35	1315	0.0823	1	0.774
(1,V25,F4)=(2,V25,F4)	2544.91	3122.88	1315	1.0374	1	0.308
(1,V26,F4)=(2,V26,F4)	2547.48	3127.21	1315	2.2410	1	0.134
(1,V27,F5)=(2,V27,F5)	2545.50	3120.54	1315	0.2257	1	0.635
(1,V28,F5)=(2,V28,F5)	2546.72	3121.56	1315	1.8719	1	0.171
(1,V29,F5)=(2,V29,F5)	2545.31	3120.34	1315	0.1041	1	0.747
(1,V30,F5)=(2,V30,F5)	2545.99	3120.54	1315	0.3512	1	0.553
(1,V31,F5)=(2,V31,F5)	2544.92	3121.01	1315	0.4592	1	0.498
(1,V32,F6)=(2,V32,F6)	2544.92	3120.42	1315	0.0823	1	0.774
(1,V33,F6)=(2,V33,F6)	2545.25	3120.35	1315	0.7138	1	0.398
(1,V34,F6)=(2,V34,F6)	2551.44	3126.40	1315	30.6273	1	0.000

Model	S-Bχ^2	χ^2†	d.f	Dif. S-Bχ^2‡	Δd.f	p
(1,V35,F6)=(2,V35,F6)	2549.70	3123.70	1315	103.545	1	0.000
(1,V36,F6)=(2,V36,F6)	2549.50	3123.98	1315	22.8207	1	0.000
(1,V58,F7)=(2,V58,F7)	2545.37	3120.37	1315	0.1114	1	0.739
(1,V59,F7)=(2,V59,F7)	2547.35	3121.57	1315	5.1680	1	0.023
(1,V60,F7)=(2,V60,F7)	2546.21	3120.54	1315	0.4516	1	0.502
(1,V61,F7)=(2,V61,F7)	2545.03	3120.36	1315	0.0869	1	0.768
(1,V62,F7)=(2,V62,F7)	2546.21	3120.72	1315	0.7324	1	0.392
(1,V63,F7)=(2,V63,F7)	2546.85	3121.41	1315	2.0837	1	0.149
(1,V64,F7)=(2,V64,F7)	2547.45	3121.76	1315	5.1453	1	0.023
(1,V66,F8)=(2,V66,F8)	2545.07	3120.90	1315	0.4457	1	0.504
(1,V67,F8)=(2,V67,F8)	2548.86	3123.70	1315	8.7933	1	0.003
(1,V68,F8)=(2,V68,F8)	2545.01	3120.41	1315	0.0869	1	0.768
(1,V69,F9)=(2,V69,F9)	2556.05	3131.25	1315	36.1147	1	0.000
(1,V70,F9)=(2,V70,F9)	2546.83	3121.45	1315	2.0706	1	0.150
(1,V72,F9)=(2,V72,F9)	2545.38	3120.38	1315	0.1114	1	0.739
(1,V75,F10)=(2,V75,F10)	2546.82	3122.03	1315	2.0293	1	0.154
(1,V77,F10)=(2,V77,F10)	2547.60	3122.35	1315	3.9035	1	0.048
(1,V79,F10)=(2,V79,F10)	2544.83	3120.42	1315	0.0823	1	0.774

In the last column of Table 6.20, it can be observed that only the constraints corresponding to 5 loads factorial would give a better fit if they were eliminated. The remaining 34 have significance greater than 1% ($p > 0.01$), meaning that eliminating the restriction of equality of parameters does not improve the fit. Moreover, we note that these 5 give at least 2 loads for the factor. In summary, we affirm the partial invariance; therefore, we can proceed to assess the significance of the control variables of CCAA.

We compared the multi-group model without restriction with each of the models with each of the constraints, which means sixteen different models (see Table 6.21). The results of the multi-group analysis are shown in Table 6.22. From our results we can conclude that the estimated coefficients between constructs proposed in our model are invariant among all groups considered, except for the restriction related to hypothesis H14 ($p<0.1$). This restriction is located at the limit so we could consider that this effect does not exist. On the contrary, if we would consider it we propose that the significant

coefficient obtained from the H14 highlights the existence of the autonomous communities effect on the relationship between PSO and resource adquisition.

Table 6.21 Chi-square test for each of the multi-group restrictions among the subsamples of the autonomous communities

Model	S-Bχ^2	χ^2†	d.f.	Dif. S-Bχ^2‡	Δd.f.	p
Multi-sample model	2718.06	3337.41	1373			
Multi-sample model with restriction:						
H1: (1,F6,F1)=(2,F6,F1)	2718.00	3337.41	1374	0.0822	1	0.774
H3: (1,F6,F2)=(2,F6,F2)	2718.35	3337.57	1374	0.1750	1	0.675
H5: (1,F6,F3)=(2,F6,F3)	2718.14	3337.51	1374	0.0822	1	0.774
H7: (1,F6,F4)=(2,F6,F4)	2718.51	3338.17	1374	0.5781	1	0.447
H9: (1,F6,F5)=(2,F6,F5)	2718.70	3338.27	1374	0.6868	1	0.407
H2: (1,F7,F1)=(2,F7,F1)	2718.24	3337.60	1374	0.1579	1	0.691
H4: (1,F7,F2)=(2,F7,F2)	2718.65	3337.67	1374	0.2979	1	0.585
H6: (1,F7,F3)=(2,F7,F3)	2718.59	3337.72	1374	0.2806	1	0.596
H8: (1,F7,F4)=(2,F7,F4)	2718.10	3337.42	1374	0.0822	1	0.774
H10: (1,F7,F5)=(2,F7,F5)	2718.95	3338.58	1374	0.9406	1	0.332
H11:(1,F8,F6)=(2,F8,F6)	2718.26	3339.17	1374	0.8939	1	0.344
H12:(1,F8,F7)=(2,F8,F7)	2719.75	3341.19	1374	1.8155	1	0.177
H13:(1,F9,F6)=(2,F9,F6)	2720.32	3341.68	1374	2.1127	1	0.146
H14:(1,F9,F7)=(2,F9,F7)	2721.98	3343.56	1374	3.1954	1	0.073*
H15:(1,F10,F6)=(2,F10,F6)	2720.80	3340.67	1374	2.7045	1	0.100
H16:(1,F10,F7)=(2,F10,F7)	2719.93	3339.11	1374	1.7523	1	0.185

F1=Mimetic factors; F2=Traditional culture; F3=Complexity; F4=Emphasis; F5=Cohesion; F6=RSO; F7=PSO; F8=Beneficiary satisfaction; F9=Acquisition of resources; F10=Reputation

Hence, from our results we can suggest that the CCAA moderates the PSO and resource acquisition performance relationship, being significant in large autonomous communities (β_{CCAA1}= 0.277, p<0.01) and non-significant in the other cases. These results are consistent with Berbegal-Mirabent et al.'s (2013) assertion through which they highlight the fact that Spanish universities that operate in territories with a greater technological intensity and a higher new business formation rate (grouped as the

CCAA1 variable in our research) are more efficient in transferring knowledge. From our literature review, we noted that the transfer of knowledge is an alternative way to perform the resource acquisition given the current budgetary cuts. Thus, our findings suggest that universities located in larger regions with a PSO strongly influence their resource acquisition.

Although the CCAA does not exert a significant effect on the RSO and acquisition relationship, we could observe the inverse effect, those relationships being stronger for CCAA2 (β_{CCAA2}= 0.475, p<0.01) than CCAA1 (β_{CCAA1}= 0.202, p<0.01).

From the results highlighted above, it has been possible to suggest the following proposition:

> ***P2*** *The greater the autonomous community, the stronger the relationship between the PSO and the acquisition of resources.*

Table 6.22 Comparison of path between the subsamples of autonomous communities

H	Path	Total sample†			Multi-sample Model‡							
					CCAA1			CCAA2			CCAA control variable	
		Standardised path coefficients		Robust *t* value	Standardised path coefficients		Robust *t* value	Standardised path coefficients		Robust *t* value	ΔS-Bχ^2 (Δd.f.=1)	*p*
H1	F1 → F6	0.107	**	2.412	0.103	*	1.791	0.120	*	1.726	0.0822	0.774
H3	F2 → F6	-0.001	n.s.	-0.018	-0.010	n.s.	-0.169	0.029	n.s.	0.365	0.1750	0.675
H5	F3 → F6	-0.059	n.s.	-1.164	-0.054	n.s.	-0.843	-0.088	n.s.	-1.063	0.0822	0.774
H7	F4 → F6	0.386	***	7.392	0.383	***	6.014	0.373	***	4.829	0.5781	0.447
H9	F5 → F6	0.311	***	7.106	0.276	***	5.495	0.378	***	4.801	0.6868	0.407
H2	F1 → F7	0.080	*	1.744	0.092	n.s.	1.576	0.058	n.s.	0.783	0.1579	0.691
H4	F2 → F7	0.035	n.s.	0.743	0.051	n.s.	0.870	0.001	n.s.	0.018	0.2979	0.585
H6	F3 → F7	-0.132	***	-2.758	-0.155	***	-2.607	-0.095	n.s.	-1.170	0.2806	0.596
H8	F4 → F7	0.371	***	7.344	0.357	***	5.813	0.388	***	4.855	0.0822	0.774
H10	F5 → F7	0.278	***	6.558	0.305	***	6.049	0.227	***	3.110	0.9406	0.332
H11	F6 → F8	0.354	***	4.826	0.304	***	3.543	0.450	***	3.301	0.8939	0.344
H12	F7 → F8	0.161	**	2.223	0.241	***	2.718	0.016	n.s.	0.122	1.8155	0.177
H13	F6 → F9	0.278	***	4151	0.202	***	2.573	0.475	***	4.052	2.1127	0.146
H14	F7 → F9	0.188	***	2.958	0.277	***	3.677	-0.013	n.s.	-0.115	3.1954	0.073*
H15	F6 → F10	0.122	*	1.899	0.031	n.s.	0.406	0.263	**	2.400	2.7045	0.100
H16	F7 → F10	0.332	***	5.006	0.401	***	4.939	0.242	n.s.	2.243	1.7523	0.185

† S-Bχ^2 (df=672)=1920.15; RMSEA=0.047; SRMR; CFI=0.921; NNFI=910.
‡ S-Bχ^2 (df=1373)=2718.06; χ^2=3337.41; RMSEA=0.060; SRMR=0.067; CFI=0.907; NNFI=0.899.

***p<0.01; **=p<0.05; *p<0.1; ns=non-significance

F1=Mimetic factors; F2=Traditional culture; F3=Complexity; F4=Emphasis; F5=Cohesion; F6=RSO; F7=PSO; F8=Beneficiary satisfaction; F9=Acquisition of resources; F10=Reputation

University endogamy

As mentioned in previous chapters, our goal is to verify the hypothesis that the coefficients between constructs proposed in our model are invariant for different groups considered simultaneously for the endogamy of the university managers. As we showed in Chapter 4, we consider the *endogamy* variable (ENDOG) clustered into two groups: ENDOG1 reflects managers' endogamy, while the variable ENDOG2 reflects the contrary.

As in the section above, we first performed the metric invariance test (Table 6.23). The results revealed the existence of metric invariance (dif. S-Bχ^2 = 38.80; p<0.01); therefore, we could proceed to assess the invariance of endogamy's control variable. Thus, we compared the multi-group model without restriction with each of the models with each of the constraints, which means sixteen different models (see Table 6.24). The results of the multi-group analysis are shown in Table 6.25.

Table 6.23 Measurement invariance test

Model	S-Bχ^2	χ^2†	d.f.	Dif. S-Bχ^2‡	Δd.f.	p	RMSEA	SRMR†	CFI	NNFI
Single group solution										
Endog1 (n=546)	1452.85	1758.19	657				0.047	0.042	0.918	0.908
Endog2 (n=244)	1036.78	1301.33	657				0.049	0.055	0.919	0.908
Measurement invariance (n=790)										
Equal form	2481.85	3059.57	1314				0.047	0.049	0.918	0.908
Equal factor loadings	2512.94	3118.31	1353	38.80	39	0.47	0.047	0.060	0.918	0.910

*p<0.01
†No robust
‡Calculate with the SBDIFF software

Our our results reveal that the estimated coefficients between constructs proposed in our model are invariant among all groups considered, except for two restrictions related to hypothesis H6 (p<0.1) and for the hypothesis H16 (p<0.05).

Following our line of reasoning, we suggest the existence of an effect on the relationship of *endogamy*, on the one hand, between the *complexity* and the PSO and, on the other hand, between the PSO and the reputation.

Table 6.24 Chi-square test for each of the multi-group restrictions among the subsamples of the managers' endogamy

Model	S-Bχ^2	χ^2†	d.f.	Dif. S-Bχ^2‡	Δd.f.	p
Multi sample model	2653.50	3272.31	1373			
Multi sample model with restriction:						
H1: (1,F6,F1)=(2,F6,F1)	2654.53	3273.67	1374	1.0254	1	0.311
H3: (1,F6,F2)=(2,F6,F2)	2655.40	3274.61	1374	1.8994	1	0.168
H5: (1,F6,F3)=(2,F6,F3)	2655.27	3274.35	1374	1.6902	1	0.194
H7: (1,F6,F4)=(2,F6,F4)	2653.76	3272.40	1374	0.0864	1	0.769
H9: (1,F6,F5)=(2,F6,F5)	2653.60	3272.33	1374	0.0819	1	0.775
H2: (1,F7,F1)=(2,F7,F1)	2654.51	3272.89	1374	0.6627	1	0.416
H4: (1,F7,F2)=(2,F7,F2)	2655.06	3274.41	1374	1.6168	1	0.203
H6: (1,F7,F3)=(2,F7,F3)	2656.19	3274.69	1374	3.1902	1	0.074*
H8: (1,F7,F4)=(2,F7,F4)	2654.37	3272.50	1374	0.2624	1	0.608
H10: (1,F7,F5)=(2,F7,F5)	2653.95	3272.52	1374	0.1850	1	0.667
H11:(1,F8,F6)=(2,F8,F6)	2653.64	3275.95	1374	1.1868	1	0.276
H12:(1,F8,F7)=(2,F8,F7)	2653.60	3272.72	1374	0.2906	1	0.589
H13:(1,F9,F6)=(2,F9,F6)	2653.85	3274.61	1374	1.0302	1	0.310
H14:(1,F9,F7)=(2,F9,F7)	2653.61	3272.62	1374	0.2265	1	0.634
H15:(1,F10,F6)=(2,F10,F6)	2654.51	3272.71	1374	0.4988	1	0.480
H16:(1,F10,F7)=(2,F10,F7)	2656.56	3274.67	1374	4.8264	1	0.028**

F1=Mimetic factors; F2=Traditional culture; F3=Complexity; F4=Emphasis; F5=Cohesion; F6=RSO; F7=PSO; F8=Beneficiary satisfaction; F9=Acquisition of resources; F10=Reputation

Specifically, from our results, we can suggest that *endogamy* moderates the complexity and PSO behaviour, being greater in the group of managers without an inbreeding situation (β_{ENDOG2}= -0.249, p<0.01) than in the other group formed by university managers with an inbreeding situation (β_{ENDOG1} = -0.087, p<0.10). In addition, from our results, we can additionally suggest that *endogamy* moderates the PSO and *reputation* relationship, the performance being greater in the group of managers without

an inbreeding situation (β_{ENDOG2}= 0.483, p<0.01) than in the other group formed by university managers with an inbreeding situation (β_{ENDOG1}= 0.269, p<0.10).

However, although the invariance among the different subsamples has been almost confirmed, we believe it is interesting to reflect that they sense different behaviours between the two groups that are worth pointing out because they support the arguments of Mora (2001) and Peña (2010). These authors reveal certain resistance to change in the civil servants' faculty as an endogamous culture.

However, following authors such as Mora (2001) and Peña (2010), we believe it is interesting to point out that there are different strategic behaviours between the two groups. From our results, we can highlight that only for the non-endogamy group of university managers, only those relationships between RSO and beneficiary satisfaction and acquisition of resources' performance measure and between PSO and reputation's performance measure are significant. For the endogamy group of managers, all of the relartionships that relate the RSO and PSO with performance measures are significant.

From the results highlighted above, it has been possible to establish the following propositions:

P3 *The greater the existence of non-endogamy within university managers, the stronger the relationship between the complexity factor and the PSO.*

P4 *The greater the existence of non-endogamy within university managers, the stronger the relationship between the PSO and reputation.*

Table 6.25 Comparison of path between the subsamples of managers' endogamy

H	Path	Total sample			Multi sample Model‡							
					ENDOG1			ENDOG2			ENDOG control variable	
		Standardised path coefficients		Robust *t* value	Standardised path coefficients		Robust *t* value	Standardised path coefficients		Robust *t* value	Δ ΔS-Bχ^2 (Δd.f.=1)	*p*
H1	F1 → F6	0.107	**	2.412	0.143	***	2.764	0.472	n.s.	0.542	1.0254	0.311
H3	F2 → F6	-0.001	n.s.	-0.018	-0.053	n.s.	-0.967	0.092	n.s.	1.184	1.8994	0.168
H5	F3→ F6	-0.059	n.s.	-1.164	-0.012	n.s.	-0.210	-1.691	n.s.	-1.552	1.6902	0.194
H7	F4→ F6	0.386	***	7.392	0.380	***	6.370	0.392	***	4.066	0.0864	0.769
H9	F5 → F6	0.311	***	7.106	0.311	***	6.106	0.304	***	3.693	0.0819	0.775
H2	F1 → F7	0.080	*	1.744	0.107	*	1.921	0.037	n.s.	0.468	0.6627	0.416
H4	F2 → F7	0.035	n.s.	0.743	-0.007	n.s.	-0.112	0.139	*	1.798	1.6168	0.203
H6	F3 → F7	-0.132	***	-2.758	-0.087	*	-1.538	-0.249	***	-2.864	3.1902	0.074*
H8	F4 → F7	0.371	***	7.344	0.372	***	6.103	0.389	***	4.279	0.2624	0.608
H10	F5 → F7	0.278	***	6.558	0.269	***	5.720	0.289	***	3.411	0.1850	0.667
H11	F6 → F8	0.354	***	4.826	0.303	***	3.717	0.490	***	3.016	1.1868	0.276
H12	F7 → F8	0.161	**	2.223	0.181	**	2.350	0.076	n.s.	0.449	0.2906	0.589
H13	F6 → F9	0.278	***	4.151	0.229	***	2.939	0.414	***	2.962	1.0302	0.310
H14	F7 → F9	0.188	***	2.958	0.202	***	2.757	0.122	n.s.	0.871	0.2265	0.634
H15	F6 → F10	0.122	*	1.899	0.150	*	1.923	0.044	n.s.	0.386	0.4988	0.480
H16	F7 → F10	0.332	***	5.006	0.269	***	3.463	0.483	***	3.903	4.8264	0.028**

† S-Bχ^2 (df=672)=1920.15; RMSEA=0.047; SRMR; CFI=0.921; NNFI=910.
‡ S-Bχ^2 (df=1373)=2653.50; χ^2 =3272.31; RMSEA=0.049; SRMR=0.071; CFI=0.910; NNFI=0.903.

***p<0.01; **=p<0.05; *p<0.1; ns=non-significance

F1=Mimetic factors; F2=Traditional culture; F3=Complexity; F4=Emphasis; F5=Cohesion; F6=RSO; F7=PSO; F8=Beneficiary Satisfaction; F9=Acquisition of resources; F10=Reputation

University ranking position

As mentioned in previous chapters, our goal is to verify the hypothesis that the coefficients between constructs proposed in our model are invariant for different groups considered simultaneously for the endogamy of the university ranking position. As we showed in Chapter 4, we consider the *ranking* variable (RANK) clustered into four quartiles: RANK1 (the universities classified from the first to the twelfth position), RANK2 (from the thirteenth to the twenty-fourth position), RANK3 (from the twenty-fifth to the thirty-sixth position), and RANK4 (from the thirty-seventh to the forty-seventh position).

Through the metric invariance test (Table 6.26), we can affirm the existence of metric invariance (dif. S-Bχ^2 = 135.05); therefore, we could proceed to assess the significance of the control variable of size. Thus, we compared the multi-group model without restriction with each of the models with each of the constraints, which means sixteen different models (see Table 6.27). The results of the multi-group analysis are shown in Table 6.28. In summary, we can conclude that the estimated coefficients between constructs proposed in our model are invariant among all groups considered, except for the restriction related to hypothesis H16 ($p<0.05$).

Table 6.26 Measurement invariance test

Model	S-Bχ^2	χ^2†	d.f.	Dif. S-Bχ^2‡	Δd.f.	p	RMSEA	SRMR†	CFI	NNFI
Single group solution										
Rank1 (n=309)	1082.25*	1343.22*	657				0.046	0.049	0.922	0.912
Rank2 (n=241)	1011.26*	1254.18*	657				0.047	0.055	0.916	0.905
Rank3 (n=138)	1092.11*	1234.32*	657				0.070	0.069	0.857	0.838
Rank4 (n=102)	921.76*	1037.59*	657				0.063	0.072	0.865	0.848
Measurement invariance (n=786)										
Equal form	4111.36*	4869.36*	2628				0.054	0.062	0.898	0.885
Equal factor loadings	4244.41*	5037.16*	2741	135.05	113	0.08	0.053	0.082	0.897	0.888

*p<0.01
†No robust
‡Calculate with the SBDIFF software

Table 6.27 Chi-square test for each of the multi-group restrictions among the subsamples of the university ranking position

Model	S-Bχ^2	χ^2†	d.f.	Dif. S-Bχ^2‡	Δd.f.	p
Multi-sample model	4397.87	5222.77	2772			
Multi-sample model with restriction:						
H1: (1,F6,F1)=(2,F6,F1)=(3,F6,F1)=(4,F6,F1)	4397.85	5222.84	2775	0.0845	3	0.994
H3:(1,F6,F2)=(2,F6,F2)=(3,F6,F2)=(4,F6,F2)	4400.65	5225.65	2775	2.7416	3	0.433
H5: (1,F6,F3)=(2,F6,F3)=(3,F6,F3)=(4,F6,F3)	4397.88	5223.21	2775	0.3944	3	0.941
H7: (1,F6,F4)=(2,F6,F4)=(3,F6,F4)=(4,F6,F4)	4399.63	5224.59	2775	1.6702	3	0.644
H9: (1,F6,F5)=(2,F6,F5)=(3,F6,F5)=(4,F6,F5)	4400.57	5225.83	2775	2.7187	3	0.437
H2: (1,F7,F1)=(2,F7,F1)=(3,F7,F1)=(4,F7,F1)	4400.62	5227.77	2775	3.2679	3	0.352
H4: (1,F7,F2)=(2,F7,F2)=(3,F7,F2)=(4,F7,F2)	4400.19	5223.46	2775	1.0574	3	0.787
H6: (1,F7,F3)=(2,F7,F3)=(3,F7,F3)=(4,F7,F3)	4398.83	5223.45	2775	0.7233	3	0.868
H8: (1,F7,F4)=(2,F7,F4)=(3,F7,F4)=(4,F7,F4)	4401.80	5227.22	2775	3.9648	3	0.265
H10: (1,F7,F5)=(2,F7,F5)=(3,F7,F5)=(4,F7,F5)	4398.13	5223.05	2775	0.3342	3	0.953
H11:(1,F8,F6)=(2,F8,F6)=(3,F8,F6)=(4,F8,F6)	4399.80	5227.27	2775	2.7789	3	0.427
H12:(1,F8,F7)=(2,F8,F7)=(3,F8,F7)=(4,F8,F7)	4399.63	5226.43	2775	2.4405	3	0.486
H13:(1,F9,F6)=(2,F9,F6)=(3,F9,F6)=(4,F9,F6)	4401.13	5224.97	2775	2.7145	3	0.438
H14:(1,F9,F7)=(2,F9,F7)=(3,F9,F7)=(4,F9,F7)	4401.74	5227.18	2775	3.8795	3	0.275
H15:(1,F10,F6)=(2,F10,F6)=(3,F10,F6)=(4,F10,F6)	4402.87	5228.12	2775	5.1447	3	0.162
H16:(1,F10,F7)=(2,F10,F7)=(3,F10,F7)=(4,F10,F7)	4406.04	5232.10	2775	8.4185	3	0.038**

Hence, from the results obtained we propose that the significant coefficient obtained from the H16 highlights the existence of an effect on the relationship of ranking position between the PSO and the reputation, being greater for universities located in the third quartile (β_{RANK3}= 0.613, p<0.01), followed by universities located in the second quartile (β_{RANK2}= 0.446, p<0.01), and non-significant for the other two groups.

From the results highlighted above, it has been possible to suggest the following proposition:

P5 *The university ranking position exerts a influence on the relationship between the PSO and reputation, being less strong for the universities located in the firsts ranking positions.*

Table 6.28 Comparison of path between the subsamples of the university ranking position

H	Path	Total sample†			Multi-sample Model‡												
					RANK1			RANK2			RANK3			RANK4			RANK control variable	
		Standardized path coeff.		Robust *t* value	Standardized path coeff.		Robust *t* value	Standardized path coeff.		Robust *t* value	Standardized path coeff.		Robust *t* value	Standardized path coeff.		Robust *t* value	Δ ΔS-Bχ^2 (Δg.l.=3)	*p*
H1	F1 → F6	0.107	**	2.412	0.106	n.s.	1.468	0.114	n.s.	1.387	0.103	n.s.	0.906	0.111	n.s.	1.198	0.0845	0.994
H3	F2 → F6	-0.001	n.s.	-0.018	-0.007	n.s.	-0.097	-0.058	-n.s.	-0.715	-0.009	n.s.	-0.075	0.121	n.s.	1.322	2.6407	0.433
H5	F3 → F6	-0.059	n.s.	-1.164	-0.100	n.s.	-1.357	-0.042	n.s.	-0.541	-0.067	n.s.	-0.373	0.033	n.s.	0.247	0.3208	0.941
H7	F4 → F6	0.386	***	7.392	0.334	***	3.895	0.404	***	3.875	0.416	***	3.664	0.464	***	3.888	1.5768	0.644
H9	F5 → F6	0.311	***	7.106	0.337	***	5.115	0.289	***	3.587	0.210	**	2.030	0.423	***	4.680	2.6220	0.437
H2	F1 → F7	0.080	*	1.744	0.108	n.s.	1.395	0.018	n.s.	0.204	0.034	n.s.	0.348	0.295	***	3.045	3.1958	0.352
H4	F2 → F7	0.035	n.s.	0.743	0.042	n.s.	0.518	-0.012	n.s.	-0.150	0.097	n.s.	0.865	0.036	n.s.	0.463	0.9204	0.787
H6	F3 → F7	-0.132	***	-2.758	-0.124	*	-1.691	-0.140	*	-1.721	-0.230	*	-1.913	-0.025	n.s.	-0.180	0.6306	0.868
H8	F4 → F7	0.371	***	7.344	0.300	***	3.984	0.388	***	3.899	0.446	***	3.864	0.458	***	3.875	3.8633	0.265
H10	F5 → F7	0.278	***	6.558	0.308	***	4.985	0.262	***	3.074	0.235	**	2.149	0.210	**	2.196	0.2499	0.953
H11	F6 → F8	0.354	***	4.826	0.253	***	2.109	0.491	***	3.548	0.328	**	1.987	0.515	**	2.340	2.7121	0.427
H12	F7 → F8	0.161	**	2.223	0.247	**	2.225	-0.028	n.s.	-0.208	0.223	n.s.	1.347	0.089	n.s.	0.489	2.3684	0.486
H13	F6 → F9	0.278	***	4.151	0.350	***	3.535	0.207	n.s.	1.465	0.202	*	1.650	0.459	**	1.969	2.5845	0.438
H14	F7 → F9	0.188	***	2.958	0.026	n.s.	0.268	0.221	n.s.	1.596	0.366	***	3.401	0.179	n.s.	0.908	3.7805	0.275
H15	F6 → F10	0.122	*	1.899	0.238	**	2.413	0.033	n.s.	0.275	-0.055	n.s.	-0.477	0.364	n.s.	1.471	4.9974	0.162
H16	F7 → F10	0.332	***	5.006	0.114	n.s.	1.097	0.446	***	3.513	0.613	***	5.120	0.310	n.s.	1.355	8.4185	0.0381**

† S-Bχ^2 (df=672)=1920.15; RMSEA=0.047; SRMR; CFI=0.921; NNFI=0.910
‡ S-Bχ2 (df=2772)=4397.87; χ^2 = 5222.77; RMSEA=0.055; SRMR=0.085; CFI=0.888; NNFI=0.880

***p<0.01; **=p<0.05; *p<0.1; ns=non-significance

F1=Mimetic factors; F2=Traditional culture; F3=Complexity; F4=Emphasis; F5=Cohesion; F6=RSO; F7=PSO; F8=Beneficiary satisfaction; F9=Acquisition of resources; F10=Reputation

To summarise we confirm the hypothesis that the coefficients between constructs proposed in our model are invariant for different groups considered simultaneously for each of the control variables considered in our research[67], except for five relationships.

In addition, for each of these five significant restrictions we established a set of propositions (Table 6.29). We suggest that the effects mainly act in the PSO and performance relationship; only for *endogamy* do our results show a effect between antecedents and stakeholder orientations, specifically in the *complexity* and PSO relationship. It is important to reflect that each significant effect only acts in one of the three relationships established, instead of simultaneously. Therefore, those Spanish public universities that fulfilled the three following characteristics –extra-large or large, located in one of the four major autonomous communities, and positioned in the first quartile of the Spanish public ARWU ranking positions– we could suggest that will achieve a stronger relationship between PSO and organisational performance than universities from other typologies.

Table 6.29 Summary concerning the propositions established

Propositions	Identified a relational effect
P1	The greater the university size, the stronger the relationship between the PSO and beneficiary satisfaction.
P2	The greater the autonomous community, the stronger the relationship between the PSO and the acquisition of resources.
P3	The greater the existence of non-endogamy within university managers, the stronger the relationship between the complexity factor and the PSO.
P4	The greater the existence of non-endogamy within university managers, the stronger the relationship between the PSO and reputation.
P5	The university ranking position exerts a influence on the relationship between the PSO and reputation, being less strong for the universities located in the firsts ranking positions.

[67] The university size, the seniority of the university, the autonomous community to which the university belongs, the degree of endogamy in management positions in the university, and the university's ranking position.

6.4 Latent class segmentation

The data were coded and analysed using SPSS 21.0, EQS 6.1, and Latent Gold 4.5. Specifically, as we mentioned in Chapter 5, a latent segmentation methodology (Latent Gold 4.5 statistical software) was used to define the segmentation and profiling of the individuals.

The indicators for the latent segmentation were *mimetic factors* (MF), *traditional culture of the university* (CULT), *complexity of the university* (COMP), *top management emphasis* (EMPH), *cohesion* (COH), *responsive societal orientation* (RSO), *proactive societal orientation* (PSO), *beneficiary satisfaction* (SAT), *resource acquisition* (ACR), and *reputation* (REP) (see Chapter 4 for their concept and measurement). Moreover, as co-variables, we considered different socio-demographic characteristics (age, gender, autonomous communities), university characteristics (university size, seniority of the university, ranking positions, university structure), and university managers' characteristics (endogamy, knowledge area). Based on these variables, different grouping patterns that fulfil the principles of maximum internal coherence and maximum external differentiation were obtained.

To use the aforementioned constructs in the cluster segmentation, the content, convergent, and discriminant validity and reliability of the constructs were verified first (see Section 6.3.1). Then, the resulting factor scores of the measurement model were used as a measure of these indicators, so these variables are continuously defined in real intervals (Allred, Smith & Swinyard, 2006; Brown, Pope & Voges, 2003; Mäenpää, 2006).

When applying the latent segmentation approach, the first step consists of selecting the optimum number of segments. The model used estimated from one (no heterogeneity existed) up to eight (i.e. eight segments or heterogeneity existed). The model fit was

evaluated according to the Bayesian Information Criterion (BIC), which allows the identification of the model with the least number of classes that fits the data best (Vermunt & Magidson, 2002, 2005). In this case, the best alternative was represented by four different user groups. Table 6.30 shows the estimation process summary and the fit indexes for each of the eight models.

Table 6.30 Estimates and fit indexes

Number of conglomerates	LL	BIC(LL)	Npar	Class.Err.	E_s	R^2
1-Cluster	-12315.9359	26164.9791	230	0.0000	1.0000	1.0000
2-Cluster	-11606.7367	25026.5394	272	0.0438	0.8422	0.8705
3-Cluster	-11382.5269	24858.0785	314	0.0533	0.8609	0.8674
4-Cluster	-11209.5107	24792.0049	356	0.0820	0.8420	0.8347
5-Cluster	-11096.8335	24846.6091	398	0.0915	0.8471	0.8269
6-Cluster	-11019.4503	24971.8013	440	0.1005	0.8492	0.8230
7-Cluster	-10947.7130	25108.2855	482	0.0956	0.8567	0.8273
8-Cluster	-10884.1996	25261.2174	524	0.0866	0.8792	0.8496

LL=log-likelihood; BIC=Bayesian information criterion; AIC=Akaike information criterion; Npar=number of parameters; Class. Err.=classification error; E_s= entropy R-squared; R^2=Standard R-squared

The Wald statistic was analysed to evaluate the statistical significance within a group of estimated parameters (see Table 6.31). For all the indicators, a significant p-value associated with the Wald statistic was obtained, confirming that each indicator discriminates between the clusters in a significant way (Vermunt & Magidson, 2005). Table 6.31 also contains the profiles of the clusters obtained. In the upper part, the size and name assigned to the four groups is shown: the cluster called "Conservatives" includes 33.07% of the individuals surveyed, the "Practicals" 24.92%, the "Disbelievers" 23.29%, and the "Unconventionals" 18.73%.

Table 6.31 Cluster profiles obtained (indicators)

	CONSER-VATIVES (Cluster1)	PRACTI-CALS (Cluster2)	DISBELIE-VERS (Cluster4)	UNCONVEN-TIONALS (Cluster3)	Wald	p-value	R^2
Cluster Size	33.07%	24.92%	23.29%	18.73%			
Indicators							
Mimetic factors	4.5152	5.1830	4.2697	5.2918	90.3637	1.8e-19	0.1293
Traditional culture	4.0701	5.3156	4.6112	4.3811	62.7691	1.5e-13	0.1319
Complexity	4.5237	5.8855	5.2923	4.9964	166.4350	7.5e-36	0.1837
Emphasis	5.5048	6.1275	5.2094	6.3351	223.8249	3.0e-48	0.2232
Cohesion	5.1064	4.3006	3.7075	5.6023	239.7185	1.1e-51	0.3011
RSO	4.2843	4.6897	2.9799	5.6190	685.2480	3.3e-148	0.4996
PSO	4.0356	4.3262	2.7396	5.4582	531.3741	7.6e-115	0.4654
Benef. satisfaction	5.6681	5.0919	4.3497	6.1368	467.7875	4.6e-101	0.4378
Acq. resources	5.1080	4.4051	3.5051	5.7824	314.2177	8.3e-68	0.3688
Reputation	5.0966	4.5481	3.9392	5.0000	283.1457	4.4e-61	0.3132

Notes: ***n*=785. Figures represent mean values for each segment. Values close to 1 indicate lower levels of a construct while values closer to 7 indicate higher levels of a construct. A value of 4 indicates a neutral response.**

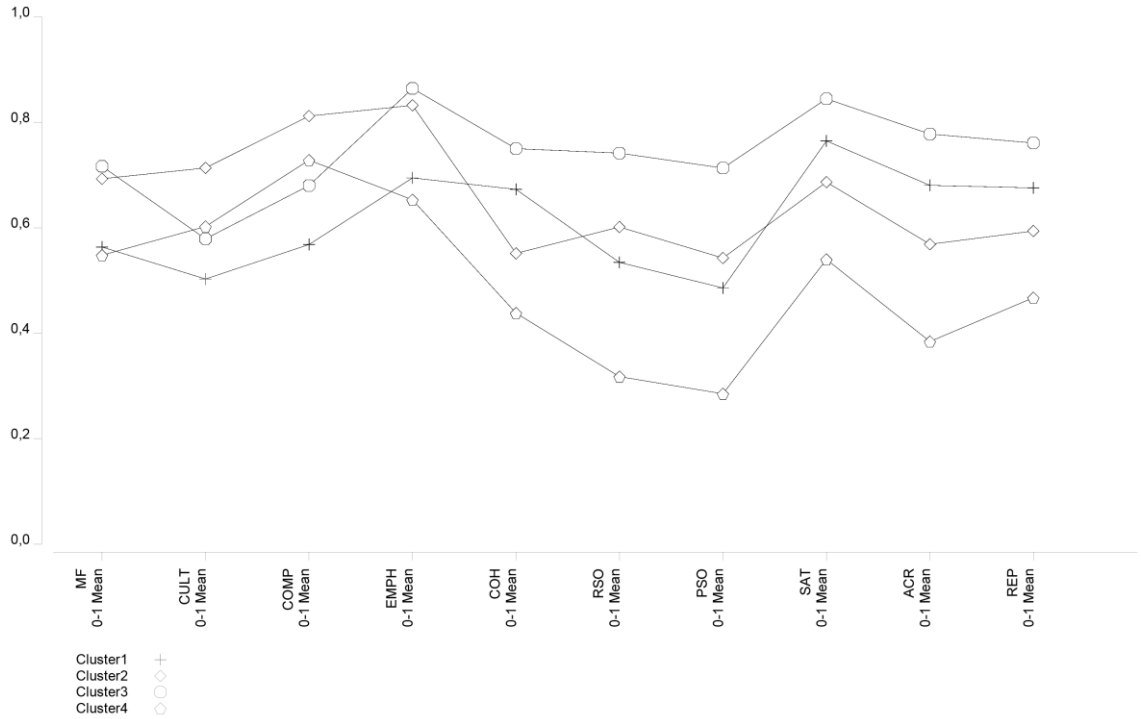
Along with the average score that each segment takes in each of the indicators[68] showed in Table 6.31 and the appreciation of the profile of those belonging to each one of the clusters showed in Figure 6.9[69] we analysed the profile of each of the resulting clusters.

Hence, the largest of the four segments found – the "Conservatives" (33.07%) – shows a neutral position in relation to implementing the responsive and proactive stakeholder orientations, does not feel threatened by environmental factors, and shows a high perception of the assessment of the university results. However, the "Conservatives" cluster shows the lowest level related to the need for emphasis amongst the university managers, whereas they detect an acceptable level of cohesion between the different university structures. In short, this cluster reflects managers who do not encourage strategic marketing actions, given that they do not perceive any need to do so; namely "everything is OK, why change?"

[68] Note that these can take values between 1 and 7, since the items that compose each scale were measured with 7-point Likert scales.

[69] According to the indicators.

Figure 6.9 Cluster profiles (indicators)



Cluster1: "Conservatives"; Cluster2: "Practicals"; Cluster3: "Unconventionals"; Cluster4: "Disbelievers"

The "Practicals" (24.92%) identify low university performance and a high influence of institutional factors associated with the traditional culture of the university and its complexity, along with a lack of cohesion among different institutions' internal structures. However, these managers are interested in implementing strategic marketing activities associated with copying successful actions of other similar institutions and emphasising leadership amongst their staff to undertake actions to orient the university towards its stakeholders. In short, this cluster reflects managers who encourage stakeholder orientations, top management emphasis, and mimetic actions oriented towards copying successful actions because they perceive it as a way to challenge certain institutional factors that determine how Spanish public universities are: "we are constrained, let's try to change".

The "Disbelievers" (23.29%) cluster comprises managers who identify the lowest results and also the highest positions, reflecting the lack of cohesion between the internal structures of the university, as well as strong constraints arising from the traditional culture of the university and its complexity. At the same time, this segment of university managers shows lower ratings in relation to the implementation of marketing activities relating to performing stakeholder orientation strategies as well as low ratings on the need to copy successful actions or carry out actions that emphasise managerial strategies related to orienting actions towards stakeholders. In short, this cluster includes those managers who do not encourage any change, even though they identify poor results as well as external and internal factors that limit the propensity to change; this means, "nothing is fine, but there is nothing to do".

Finally, the smallest of the four segments found – the "Unconventionals" (18.73%) – shows a neutral position in relation to the traditional culture of the university and its complexity and the highest assessments related to results, stakeholder orientations, top management emphasis, and mimicry of successful actions. This segment of university managers does not feel constrained by the environment, perceiving good levels of cohesion amongst university structures. Despite considering the good results obtained, this group of managers encourages the responsive and proactive stakeholder orientations as a marketing strategy by emphasising mimicry of successful actions of other universities and the effort made by the university managers related to this concept. In short, this cluster includes those managers who encourage university changes, even though they identify good results as well as poor external and internal factors that limit the propensity to change; this means "everything is OK; but nevertheless necessary to keep improving".

To complete the composition of the four segments, we also analysed the profile of the resulting groups according to the information from the **co-variables**. Table 6.32 shows the groups' composition based on a number of descriptive criteria included in the

analysis. For these co-variables, the Wald statistic was also analysed to evaluate the statistical significance within a group of estimated parameters. The co-variables university size and age were both significant at the $p<0.001$ level. We also found that endogamy from the same university and knowledge area, are significant co-variables ($p < 0.05$ level). Thus, we can conclude that significant differences exist between the segments regarding all the co-variables, except for ranking, seniority of the university, autonomous community, region endogamy, structure of the university, and gender.

Specifically, university size strongly determines extra-large universities' membership of the "Disbelievers" and, to a lesser extent, the "Conservatives" group, while for large universities, this co-variable shows similar probabilities of belonging to "Practicals" and "Unconventionals". On the contrary, we also found evidence for a strong association with "Unconventionals" for medium and small universities. Furthermore, we found that the university endogamy of the managers has a strong association with membership of the "Conservatives" segment and less with the "Disbelievers" segment, while endogamy is also likely to preclude managers from the "Disbelievers" segment.

Table 6.32 Covariates (coefficients represent the impact of each covariate on the membership of each segment)

DESCRIPTIVE CRITERIA	CATEGORIES	Conservatives	Practicals	Disbelievers	Unconventionals	Wald	p-value
Intercept		0.5601	-0.0170	-0.2844	-0.2587	7.4916	0.058
Ranking	First quartile	0.2404	-0.0542	-0.4460	0.2599	12.0384	0.2100
	Second quartile	0.1802	-0.3082	-0.0109	0.1390		
	Third quartile	-0.2082	-0.1091	0.3598	-0.0424		
	Fourth quartile	-0.2124	0.4716	0.0972	-0.3564		
University Size	Extra-Large	**0.3753**	-0.2387	**0.5395**	**-0.6761**	32.6076	0.00016***
	Large	-0.1956	**0.5314**	**0.5304**	**-0.8662**		
	Medium	-0.0613	-0.0937	**-0.5851**	**0.7402**		
	Small	-0.1184	-0.1990	**-0.4847**	**0.8021**		
University Seniority	Senior	-0.3409	0.3634	0.1475	-0.1699	10.4290	0.11
	Modern	-0.0707	-0.0091	0.1242	-0.0444		
	Young	0.4116	-0.3543	-0.2716	0.2143		
Region	Extra-Large	-0.2017	0.2049	-0.0201	0.0168	4.6608	0.2
	Others	0.2017	-0.2049	0.0201	-0.0168		

DESCRIPTIVE CRITERIA	CATEGORIES	Conservatives	Practicals	Disbelievers	Unconventionals	Wald	p-value
University Endogamy	Yes	**0.2477**	0.0090	**-0.3981**	0.1413	12.7098	0.0053**
	No	-0.2477	-0.0090	**0.3981**	-0.1413		
Region Endogamy	Yes	-0.0931	-0.1144	0.2759	-0.0684	3.6617	0.30
	No	0.0931	0.1144	-0.2759	0.0684		
University Structure	Faculty	-0.1596	-0.2827	**0.3204**	0.1219	9.9190	0.13
	Administrative staff	-0.1758	0.1512	-0.3216	**0.3462**		
	External members	**0.3353**	0.1315	0.0012	-0.4681		
Knowledge Area	Health Science	-0.2418	**0.5621**	**-0.5172**	0.1969	25.5062	0.0092**
	Science	**0.1443**	0.0063	-0.0088	**-0.1418**		
	Engin.&Arquit.	0.2410	-0.2153	**0.4548**	**-0.4805**		
	Social Science	**0.1761**	-0.0420	0.0360	**-0.1701**		
	Humanities	**-0.3196**	**-0.3111**	0.0353	**0.5955**		
Age (years)	Between 30-39	0.0096	-0.3708	**1.1014**	**-0.7401**	33.2062	0.00012***
	Between 40-49	-0.0352	**0.4584**	**-0.7727**	**0.3494**		
	Between 50-59	**0.0396**	**0.1644**	-0.0436	**-0.1604**		
	More than 60	-0.0140	-0.2520	**-0.2851**	**0.5511**		
Gender	Female	0.0650	-0.0863	-0.1255	0.1469	2.8723	0.4100
	Male	-0.0650	0.0863	0.1255	-0.1469		

Notes: Significance levels: *p<0.1; **p<0.05; ***p<0.001
Strong positive coefficient= Individuals who score high on that variable are more likely to appear in that segment; Large (magnitude) negative coefficient = Individuals are not likely to be in the segment.

The knowledge area of university managers is also a significant predictor of membership of segments. We also found evidence for health science having a strong association with "Practicals", engineering and architecture with "Disbelievers", and humanities with "Unconventionals", the association of science and social science with the "Conservatives" segment being lesser. For humanities, we determined that managers are more likely to appear in the "Unconventionals" segment.

Finally, age is also a significant predictor that determines a stronger membership of the ages from 30 to 39 years amongst the "Disbelievers" segment, while the ages from 40 to 49 years have strong associations with the "Practicals" and "Unconventionals" segments. For the ages from 50 to 59 years, managers are more likely to appear in the "Practicals" segment, whereas for ages over 60 years, there is a strong probability of appearing amongst the "Unconventionals" segment.

Therefore, considering the above-mentioned, we can define the university managers belonging to the "Conservatives" cluster as individuals from extra-large universities, who obtained their highest university degree at the same university in which they are currently developing their management position and are characterised as belonging to the science and social science knowledge areas and are more likely to be between 50 and 59 years old.

The "Practicals" cluster is characterised by university managers from the large universities, the health science knowledge area, and ranging in age from 40 to 49 years. Moreover, the "Disbelievers" segment is characterised by university managers from both extra-large and large universities, with no endogamy situation, young ages, and the engineering and architecture knowledge areas. Finally, the smallest group – "Unconventionals" – consists of university managers characterised as belonging to medium and small universities, being from the humanities knowledge area, and being more than 60 years old.

7 Conclusions of the dissertation

The last part of this dissertation provides a final reflection on the main findings. The present doctoral dissertation advances our understanding of universities' strategic management in the field of marketing by extracting implications for academics, for managers, and for public policy makers. Nonetheless, it has several limitations, but also several other possibilities for future research lines.

7.1 Summary of the dissertation

This dissertation is made up of four parts, the first –**Chapter 1**– is dedicated to establishing the justification, objectives, and structure of the research, while the second is dedicated to reviewing and stating the theoretical underpinnings and is divided into two chapters. The third part is composed of the empirical work and, finally, in the fourth part –**Chapter 8**– we present the main conclusions of the dissertation.

The aim of the second part –**Chapter 2**– was to review the phenomenon of the responsive and proactive stakeholder orientations and their links to several theoretical frameworks. Furthermore, the publications about this phenomenon in universities and especially in Spanish public universities were reviewed at the international level in **Chapter 3**. The main effort in doing so was the identification of literature gaps, so our contribution emerged through the proposal of a theoretical model.

In Chapter 2 the main theories were highlighted and a literature review was performed. Specifically, some aspects emerging from the literature review were reported, for example by employing the dynamic capabilities theory to verify whether the RSO and PSO are university capabilities that generate higher performance or the institutional theory to identify the external institutional factors that inhibit or promote RSO and PSO adoption within Spanish public universities. Finally, supporting the idea that marketing has much to say about the interface between society and the organisation, the need to develop marketing theory and practice along stakeholder theory lines was submitted. Furthermore, Chapter 2 provided an overview of the theoretical frameworks through a proposal to mix them; therefore, we based our research on the idea that only by combining several theoretical frameworks can we cover the case of organisations as complex phenomena.

In the Chapter 3, the scenario of the research considering the Spanish public universities context was contextualised. The literature review explicitly indicated that universities are multitask entities that have to understand stakeholder needs as a key to avoiding the case of *mission overload*, caused by the increased number and variety of communities with their own particular demands. Moreover, this chapter concluded by highlighting who are the universities' stakeholders with the highest influence on the strategic management of Spanish public universities.

Finally, we conducted focused empirical research in the third part of this dissertation, which, in turn, is divided into three chapters Thus, in **Chapter 4** we attempted to specify the content of the constructs' domains and the hypothesis and the theoretical model were submitted, while in **Chapter 5**, the sample data and the scales of the constructs were established. Finally, **Chapter 6** contributed by offering evidence on the validation of the construct scales for the antecedents, RSO, PSO, and university performance as well as by testing the theoretical model using CBSEM. Furthermore, we analysed several control variables in the causal relationships proposed using multi-

group analysis. In addition, by employing an analysis of websites we tried to show the main stakeholders displayed by the Spanish public universities. Finally, we conducted latent class segmentation with the purpose of understanding how university managers may be segmented with respect to our theoretical model variables.

7.2 Discussion of the results

In an environment of increasing uncertainty for public universities, this thesis contributes by offering an analysis that highlights the importance of the proper alignment of a stakeholder orientation with the environment through two possible behaviours, responsive and proactive. Moreover, the research contributes to the literature by proposing scales to assess RSO and PSO in public universities, and also the main antecedents and key consequences of such orientations.

In addition, through a **structural equation modelling analysis**, we empirically test an integral model with those antecedents and consequences of SO in public universities (see Table 7.1). Our findings confirm that RSO and PSO, although related, are theoretical distinct constructs, making prominent the need for the adoption of a SO by both -responsive and proactive- behaviours.

Another important contribution of this thesis comes from the antecedents of a SO considered. First, through the identification of the mimetic effect, in other words, that in the university context exists a superstructure[70] that exerts influence on the universities' strategic management; second, by introducing internal organisational factors that could act as barriers to the implementation of the RSO and PSO; and, third by considering university managers' emphasis on SO and the cohesion between university structures as factors which exert positive effects on the adoption of a RSO and PSO.

[70] The wider system and its inter-institutional links (Clark 1986).

Table 7.1 Summary of the contributions made through the hypotheses

Variables	Hypotheses	Result
External antecedents	**H1** Mimetic factors based on copy successful actions of other public universities have a positive effect on the adoption of a RSO.	*Supported*
	H2 Mimetic factors based on copy successful actions of other public universities have a positive effect on the adoption of a PSO**.**	*Supported*
Internal antecedents (barriers)	**H3** Traditional culture of public universities has a negative effect on the adoption of a RSO**.**	*Not supported*
	H4 Traditional culture of public universities has a negative effect on the adoption of a PSO.	*Not supported*
	H5 Complexity of public universities has a negative effect on the adoption of a RSO.	*Not supported*
	H6 Complexity of public universities has a negative effect on the adoption of a PSO**.**	*Supported*
Internal antecedents (drivers)	**H7** Emphasis shown by university managers on university's stakeholders has a positive effect on the adoption of a RSO.	*Supported*
	H8 Emphasis shown by university managers on university's stakeholders has a positive effect on the adoption of a PSO.	*Supported*
	H9 Cohesion amongst public university structures has a positive effect on the adoption of a RSO.	*Supported*
	H10 Cohesion amongst public university structures has a positive effect on the adoption of a PSO.	*Supported*
Performance	**H11** RSO of public universities has a positive effect on the beneficiary satisfaction of their stakeholders**.**	*Supported*
	H12 PSO of public universities has a positive effect on the beneficiary satisfaction of their stakeholders**.**	*Supported*
	H13 RSO of public universities has a positive effect on their resource acquisition**.**	*Supported*
	H14 PSO of public universities has a positive effect on their resource acquisition.	*Supported*
	H15 RSO of public universities has a positive effect on their reputation	*Supported*
	H16 PSO of public universities has a positive effect on their reputation**.**	*Supported*

Moreover, this dissertation presents a new contribution by employing different measures of university performance, which comprises three alternative dimensions: beneficiary satisfaction, acquisition of resources, and reputation. Thus, the results obtained regarding the consequences of RSO and PSO complement existing studies on NPOs. Our results clearly suggest that public universities with a higher RSO and/or

PSO attain a better organisational performance in terms of beneficiary satisfaction, resource acquisition and reputation. Finally, our findings suggest that implementing a RSO is not enough to achieve the strongest degree of some performance dimensions as reputation, so a PSO is also needed to complement the effects of a RSO.

Furthermore, our results partially confirm the claim that the PSO should have a higher impact on performance, as Voola and O'Cass (2010) argue. Besides, the study confirms that the PSO should have a higher impact on those results that are associated with specific activities that can be measured as a performance outcome. In the present study, the results are associated with the university's reputation, while in the case of for-profit organisations, they are associated with new-product success (Narver et al., 2004).

Another important set of new contributions is provided proposing that some effects could play moderators roles mainly on the PSO and performance relationships. Hence, the results suggest that some universities that meet certain characteristics and follow a PSO are in a privileged position, able to achieve better results. These results support the arguments made by several authors who claim heterogeneity in Spanish public universities (Berbegal-Mirabent et al., 2013; Grau, 2012; Llinàs-Audet et al., 2011; Mora, 2001; Mora & Vidal, 2000; Rebolloso et al., 2008), because, insofar as some universities may achieve better results due to having certain characteristics and implementing certain types of strategies, these may lead to a need to consider the necessity to encourage different university models among Spanish public universities, as many authors identify in the literature (Bargh et al., 1996; Clark, 1998; Dill & Sporn, 1995; de Filippo et al., 2012; Havas, 2008; Laredo, 2007; Navarro & Gallardo, 2003; Patterson, 2001; Pulido, 2009).

Despite the main contributions displayed above, in the following paragraphs we discuss additional contributions also interesting to mention. See Table 7.2 for the summary of all thesis contributions.

From our **descriptive analysis**, we highlight that Spanish managers of public universities largely correspond to male faculty of a mature age (between 50 and 59 years), especially heads of departments who mainly hold a position within one of the four largest Spanish communities while also being part of one of the largest Spanish public universities. Therefore, from our results, we highlight that there is an excessive percentage of endogamy and tenured positions amongst the university managers and, there is an excessive percentage amongst university managers' faculty that have occupied a managerial position for between 0 and 2 years faced with excessive seniority of managers' staff positions. The first aspect could cause narrow views on other existent realities in the global context of universities and the second aspect could cause difficulties in aligning the strategic perspectives between the two collectives of university managers within the university, the faculty and the administrative staff.

Hence, by carrying out a **descriptive analysis of university websites**, we demonstrated that the presence of stakeholder information in Spanish public universities is more oriented towards providing their internal stakeholders with information at the expense of the information relating to external stakeholders. In our opinion, this shows that Spanish public universities are still maintaining a traditional culture from a "towards and past" approach instead of a more flexible "out and into the future" approach.

Finally, a sound methodology to classify and profile Spanish public university managers with regard their perspective about implementation of the RSO and the PSO marketing concepts and also, their antecedents and consequences, through **latent segmentation** statistical technique was used. Latent class models can incorporate variables with different scales, both metric and non metric, and the differentiation between indicators to generate clusters allows a better framework to define, profile and explain the differences between segments. Therefore, our results reveals four different segments of Spanish public university managers which have been classified as "Conservatives", "Practicals" "Disbelievers" and "Unconventionals", providing universities with

important information as a basis for implementing marketing strategies. Additionally, our results indicate that the socio-demographic characteristics by university managers are not only the segmentation criteria for discriminate the university leaders. We highlights that should be paid attention to criteria related to the university size, the endogamy conditions and the knowledge-area to which belongs the university manager.

In summ, the "Conservatives" university managers show neutral position in relation to implement both stakeholder orientations as a marketing strategy, not feeling threatened by environmental factors as well as showing a high perception on assessment the university results. This manager typology are likely comprised in extra-large, with an endogamic career within the same university and with less probablity among the humanities knowledge-area. Hence, the "Practicals" are interested in implementing strategic marketing activities associated to copy successful actions of other similar institutions, and in emphasizing leadership amongst its staff to undertake actions to orient the university to their stakeholders. We could find this typology located in large universities, health science knowledge area and between 40 and 49 years old memeberships. However, the "Disbelievers" do not encourage any change, even though they identify poor results, as well as, external and internal factors that limit the propensity to change. This manager typology is most likely comprised in extra-large and large universities, engineering and architecture knowledge-area and between 30 and 39 years old memeberships. At the opposite side we could find the "Unconventionals" which encourages university changes, even though they identify good university results, we could find this typology located in medium and small universities, humanities knowledge area and into more than 60 years old memeberships.

Table 7.2 Summary of the new contributions to the market orientation research line in the university context

Main contributions	✓ Introducing the stakeholder concept as a proxy for the market orientation concept.
	✓ Demonstrating empirically the existence of two stakeholder orientation behaviours – responsive and proactive – in the university context.
	✓ Reflecting the main characteristics of the Spanish public university managers.
	✓ Building a map of the main Spanish public university stakeholders and identifying their presence on the universities' websites.
	✓ Testing a theoretical model that simultaneously considers the antecedent and consequence relationship with the RSO and PSO.
	✓ Identifying the mimetic effect as an institutional factor that stimulates a firm's adoption of the RSO and PSO in the university context.
	✓ Identifying the complexity of the university as a barrier to the implementation of a PSO.
	✓ Introducing different measures of university subjective performance.
	✓ Introducing the control variables and suggesting some propositions.
	✓ Identifying the main segments of university managers in the Spanish public university context in relation to their stakeholder orientation marketing position.

7.3 Implications of the dissertation

By bringing together and integrating different elements of antecedents, strategic marketing, and university performance, this dissertation has important implications for the literature, management, and public policy, as summarised in Table 7.3.

7.3.1 Implications for research and practice

Overall, this doctoral dissertation contributes to the literature on NPOs and strategic marketing through researching the impact of institutions' capabilities, such as the RSO and PSO, on their performance by using a mixture of theories (dynamic capabilities, institutional theory, stakeholder theory) to explain university complex phenomena.

In this sense, this thesis contributes, on one hand, to the empirical studies by emphasising marketing theory and practice along stakeholder theory lines in the university context, also following the arguments of several authors (Alves et al., 2010;

Chapleo & Simms, 2010; Jongbloed et al., 2008; Mainardes et al., 2014) and, on the other hand by analysing the importance of implementing the SO within the higher education context, following the recommendations made by some authors in this specific field of knowledge (Caruana et al., 1998; Casidy, 2014; Flavián & Lozano, 2006; Hammond et al., 2006; Hemsley-Brown & Oplatka, 2010; Ma & Todorovic, 2011; Rivera-Camino & Ayala, 2010; Webster et al., 2006).

Furthermore, to comprehend better the implementation of stakeholder orientations, we emphasised understanding the Spanish public universities' environment by identifying several external institutional factors and internal organisational factors, which can act as barriers to or as drivers of the development of both RSO and PSO within public universities. For instance, we showed how the mimetic effect as an institutional factor acts as an enabler; meanwhile, as internal organisational factors, complexity acts as a barrier and emphasis and cohesion act as drivers.

Regarding the methodological results, this dissertation contributes by employing several subjective measures of performance; even if they are not a novelty, in this field of research, there is a lack of studies that emphasise the use of multiple subjective measures of performance in NPOs.

Moreover, we also added empirical evidence to the stream of research that explains the effects of some variables. In this sense, we suggest that (1) those universities with the greatest size have a stronger relationship between PSO and beneficiary satisfaction, (2) those universities that are located in one of the four greater regions –Andalucía, Catalunya, Comunitat Valenciana, and Comunidad de Madrid– have a stronger relationship between PSO and acquisition of resources, and (3) those universities that are located in one of the top twelve ARWU Spanish public ranking positions have a stronger relationship between PSO and reputation.

Finally, given that customer segmentation is widely implemented by companies[71], in this study, we transferred the concept to the university context and to the case of university managers through the latent class methodology for segmentation and profiling. Thus, for us, the first step towards efficient implementation of stakeholder orientations, both responsive and proactive, was to provide a detailed understanding of the behaviours of Spanish public university managers in relation to their visions and beliefs about the antecedents, RSO, PSO, and university performance. Additionally, for academics, such knowledge permits more precise exploration of university managers' behaviours by identifying those covariates that are positively related to university managers' response to stakeholder orientations as a marketing strategy.

Summarising, the present dissertation supports the arguments made by Solé-Parellada and Berbegal-Mirabent (2011) highlighting that universities in the twenty-first century are complex institutions, governed by goals and incentives, with a clear system of accountability and services that grow according to the improvement of the university. Within these types of universities, the organisational implications, governance, and budget are very significant; in this sense, our results provide useful information to develop tools to support their managers in the process of strategic decision making concerning the transformation and adaptation of Spanish universities towards their primary mission, to move towards society.

7.3.2 Implications for management

From a practical perspective, this thesis can provide meaningful lessons for university managers because it suggests that they should promote and develop university strategies based on a stakeholder orientation for having more externally oriented organisations and

[71] For profit organisations, segmentation is a common practice because taking into account the heterogeneity of consumers is one of the most important aspects of marketing strategies .This implies the need to segment individuals before carrying out any marketing activities and applying to each group of customers the most appropriate actions depending on the activities that they perform (Rondán-Cataluña, Ramos & Sánchez-Franco, 2007).

more focused towards its different stakeholders. Furthermore, university managers, in order to enhance the RSO and PSO of their institutions, should be acting directly on the antecedents that promote or inhibit those capabilities, specially on the emphasis shown to SO, on fostering the cohesion among the different university structures, on reducing as much as possible the level of complexity of the university organization and on trying to imitate the proper stakeholder oriented behaviours of other public universities.

In accordance with the above assertions, firstly, this dissertation promotes the importance of the stakeholder concept and the need for it to be integrated within universities' current strategies as one of the ways to promote and develop university strategies with stakeholder orientation as an important consideration to achieve better performance. Thus, the results obtained by this research suggest that members of university top management should take steps to familiarise themselves with stakeholder theory and marketing practice.

Secondly, we argue that it is important to emphasise that the study's results show positive effects from the antecedents on the RSO and the PSO. In this scenario, it is clear that university managers should act directly on both internal and external antecedents that promote or inhibit the RSO and the PSO as dynamic capabilities. Doing this, university managers will gain a better understanding of the stakeholders' needs and expectations.

Furthermore, the results of this study show that the RSO and PSO, framed as concepts within the theory of marketing, can help university managers to encourage and drive actions towards determining whether their institution has low, moderate, or high levels of them. This is important because the study demonstrates that the RSO and PSO are positively influenced by the Spanish public top managers' emphasis on those actions and behaviours. Therefore, better communication and relationships between managers of different university structures could help them to know the expected stakeholder needs; meanwhile, to find out the latent stakeholder needs, it could be necessary to

influence other factors that are more related to innovative and entrepreneurial behaviours between university managers of different university structures.

We also showed that the new scenario claiming more entrepreneurial types of universities involves a proactive organisational response, for which new resources and capabilities are necessary (Navarro & Gallardo, 2003). Thus, our results also encourage public universities managers to adopt a holistic view of stakeholder orientation including proactivity as a dynamic capability that must them help to understand the stakeholder latent needs as a strategy to achieve innovative and entrepreneurial behaviours that can help to improve certain performance objectives, for example reputation.

Furthermore, we suggest that the results obtained from the latent segmentation can be helpful for managers themselves when they have to implement certain strategic actions that imply the presence of the factors presented in this thesis. For example, the fact that a certain typology of university managers is most likely to be located into certain university characterisitcs or sociodemographic characteristics. For example, the fact that around a third of university managers has no strategic visions about stakeholder orientations, while 23.29% of these managers reflect negative assessments avout subjective results could become an important information to help managers to analyse the situation of Spanish public universities in general and their own in particular. Hence, the fact that a certain typology of university managers is most likely to be located into certain university characterisitcs or sociodemographic characteristics could help university managers to guide further strategies oriented towards SO implementation strategies.

Hence, from a practical perspective, we suggest that almost half university managers reflect neutral positions in relation to the environmental factors while all of them perceive the emphasis of the top managers and the cohesion within university structures as a important factors to be in mind. On the contrary only a few percentage of university

managers see as important factor to implement marketing strategies related to university stakeholder orientations. Moreover, this thesis have implications to management because the results obtained permits more precise exploration of university managers behaviors by identifying those covariates that are positively related with university managers response, thus, from the segmentation analysis our research posits some managerial implications to help universities to guide further actions oriented to stakeholder implementation strategies.

Moreover, going into more detail all of the segments identified in the study show lower values in the proactive behaviours in front of the responsive ones reflecting a lack of proactiveness amongst Spanish academic authorities as Rebolloso et al. (2008) stress. In this line we suggest that university managers needed to achieve further experience in the management of any type of complex and big organisations to avoid given the feeling of being comfortably settled back and waiting to be told what to do by others who experiment first as Mora and Vidal (2000) warn.

Finally, the results also suggest that the university size, the autonomous community location, and the position in the ARWU ranking moderate the relationship between PSO and performance. Thus, the results could help university managers to identify their potentialities and drive their proactive university strategies according to the possession or otherwise of all or some of those special resources.

7.3.3 Implications for public policy makers

These results suggest some connotations that policy makers should bear in mind to design their universities' future strategies and directions. Thus, into the path of the necessary transformation of public universities, which Mora (2001) calls modern universities, our results should encourage policy-makers to transform these institutions bearing in mind that both, RSO and PSO, could become important sources of competitive advantage that enable the constant dialogue of the university with their

stakeholders into society. In addition, our results promote the RSO and PSO behaviours as success actions that must be mimicked. In this line of reasoning we suggest governments the need to establish policies that encourage the implementation of university strategies oriented to their stakeholders in order to break the current scenario of their public universities. Also, in sight of these results, we encourage governments to promote the implementation of proactive strategies among public universities as a way to improve the reputation of such institutions.

Hence, this dissertation focuses on university management behaviours that should actively participate in both the responsive and the PSO. However, as Perotti (2007) reveals, the behaviour of both internal actors (academics and managers) and external non-economic ones (the political class) must be conceived as a variable of change so some contributions emerging from our empirical study can be highlighted to conduct future public policy.

As we commented in Chapter 3, in the Spanish public university system, the lack of competition among autonomous communities' universities promotes neither their differentiation nor whatever action is required to make the whole system more oriented towards the diversity of social needs. With respect to the claim of more diversified universities, our findings indicate that it is important to acknowledge that universities are embedded in a regional system that differs from others, occupying different ranking positions and including different sizes. Specifically, our results suggest (1) that the location in certain regions exerts a effect on the PSO and acquisition of resources, (2) that ranking positions moderate the PSO and reputation relationships, and, finally, (3) that the university size influences the PSO and the beneficiary satisfaction. Thus, for public policy makers, those effects must be conceived as sources of competitive advantage that encourage the heterogeneity amongst the different types of universities that can emerge, ranging from research-intensive to teaching-intensive, with a technological character or a multi-faculty composition depending on the possession, or

otherwise, of such resources. In addition, we suggest that the government could help by establishing policies to implement proactive strategies within universities, for such strategies are becoming a key element in improving their reputation.

From the above statement, it is important to alert public universities' policy makers that nowadays the dominant discourse reflects a lack of knowledge of and distrust in universities caused in part by an economy characterised by enterprises with scant propensity to innovate and a relatively scarce entrepreneurial culture, which makes it difficult for economic actors to develop synergies with universities. On this line, our results highlight that autonomous communities moderate the PSO and acquisition of resources relationships, which suggests the need for the government to establish pressure on firms in order to change the nature of their entrepreneurial culture.

As we mentioned in previous chapters, universities are complex institutions, influenced by the uncertainty and instability of their environment and with a broader function than just training professionals and increasing the cultural level of society, which is also transmitting knowledge. Thus, on the path towards the necessary transformation of public universities, which Mora (2001) calls modern universities, our results should encourage policy makers to transform these institutions, bearing in mind that both the responsive and the PSO could become important sources of competitive advantage, enabling a constant dialogue with their stakeholders in society.

On the above line of reasoning, our analysis of the websites of Spanish universities revealed an excessive amount of information oriented towards internal university stakeholders, not supporting the notion that every university may be dealing with a slightly different set of external customers or stakeholders. In this sense, as Russo et al. (2007) reveal, the influence of stakeholder groups depends on institutional support, so more policies are required that help Spanish public universities to change their orientation from "inside" to "outside" and embed universities in stakeholders' needs.

Moreover, as far as our empirical results evidence the difficulty in goal alignment caused by the existence of "covert" as well as "overt" university goals as well as between "outcomes" goals and "process" goals, both as barriers to PSO implementation, we assert the need to establish policies that address the problem of the excessive power of academics highlighted by Mora and Vidal (2000). In addition, our results show that the mimetic effect of copying successful university actions has a positive effect on both the RSO and the PSO. On this line of reasoning, we recommend the need to establish policies that encourage the implementation of university strategies oriented towards their stakeholders to break the current scenario of Spanish public universities that is characterised by a mimetic effect of immobility.

In addition, as we commented previously, the segmentation obtained from our results could help university managers as well as policy makers because the results highlight some information about the characteristics that influence each one of the university managers' clusters identified. For example, our results suggest implementing policies that encourage mimetic effects of the RSO and the PSO amongst universities; we also suggest that it will be necessary to implement policies that help to perceive the strategy implementation of the RSO and the PSO in a more positive way. Furthermore, our results confirm different perceptions about the university results that could be reflected on very different positions around the perception of a prosperous functioning of public universities.

Finally, for instance, there are several authors who reflect their concern related to the process whereby Spanish public universities are adapting to the new needs and social demands, recognising that there is some distance to Spanish universities with regard to marketing strategies (Llinàs-Audet et al., 2011; Mora, 2001). Grau (2012) looks beyond this and affirms that Spanish universities are not within the actual political priorities of policy makers and one of the purposes of the European Commission is for Spanish universities to implement tools of strategic management to become more competitive

and responsible with the goal of gaining the trust of society. In this way, regarding public universities' policy makers implications, we hope that this study provides a tool with which policy makers can analyse the SO concept, helping them to design incentives and mechanisms to move the university manager thinking from the students, as the primary university stakeholder, to a broad stakeholder orientation in university´s strategies.

Table 7.3 Summary of the different implications

Implications for the literature	Implications for management	Implications for policy makers
• Offers a holistic perspective of complex theoretical phenomena through interrelating various theoretical frameworks; • develops a segmentation of university managers; • develops the RSO and PSO as important dimensions of dynamic capabilities; • develops a description of institutional factors, as external antecedents, and organisational factors, as internal antecedents; • offers a measurement of universities' organisational performance towards a multidimensional measure with subjective dimensions; • empirically demonstrates the relationship between antecedents, stakeholder orientation – responsive and proactive – and organisational performance in the Spanish public university context; • contributes to empirical studies emphasising marketing theory and practice along stakeholder theory lines; • contributes to empirical studies emphasising the importance of engaging the marketing concept within HEIs.	• Recommends promoting and developing university stakeholder orientations; • highlights the university managers' profile and the main characteristics that explain it; • recommends improving the RSO and PSO by suggesting acting directly on the antecedents that promote or inhibit those dynamic capabilities; • recommends including proactivity as a dynamic capability to achieve innovative and entrepreneurial behaviours; • recommends adopting a holistic view of the stakeholder orientation to focus Spanish universities towards society; • recommends reinforcing the presence on university websites of information related to a set of external stakeholders.	• Promotes the PSO and RSO behaviours as success actions that must be mimicked; • encourages and helps Spanish public universities to adapt to the new globalisation environment; • suggests establishing policies oriented towards improving several university managers' behaviours and perceptions about antecedents, stakeholder orientations, and results; • reinforces the proactive spirit of universities to obtain potential Spanish public universities' reputation; • highlights the existence of certain effects that could promote the heterogeneity within public universities.

7.4 Limitations and future research lines

This study advances our understanding of the complex relationships between antecedents, RSO and PSO, and performance constructs; however, it should be emphasised that this research does have some limitations. Nevertheless, there are several other possibilities for future research in line with our primary results.

First, an aspect that should be considered is that this study was realised with a specific sample of public university managers and in the specific country of Spain, so the results may vary in other university. Thus, due to the sample analysed, we must use caution in attempting to generalise these findings to other universities (for example, private), to other countries, or to other non-profit institutions. In this sense, it would be interesting to reproduce similar studies in other countries that follow other university models and have other institutional factors. In addition, new research could make comparisons between Spanish public universities and Spanish private universities to explore the similarities and differences in the antecedents, stakeholder orientations, and performance and their relationships. Further, we carried out the latent class segmentation considering the latent variables of our theoretical model. Future research should include other types of indicators as well as other covariances (e.g. time spent occupying the managerial position and employment status of university managers).

Another aspect that should be considered as a limitation of the sample is related to the lack of response obtained in our research from the external members of social councils. According to the previous literature, this phenomenon leads us to suggest that their real influence is quite limited, given that in Spain social councils were established by public universities' policy makers as external bodies representing the wider interests of society in the university. In this sense, we suggest that it may be interesting more research to explore the Spanish social council role in relation to the implementation of RSO and PSO in the Spanish public universities.

Second, another limitation to emphasise is concerned with the independent variables, PSO and RSO, which were measured in a specific period. That is, keeping track of the RSO and PSO variables could be an interesting extension of the research because it would make it possible to see their changes over time. Future studies should continue to test the longitudinal RSO and PSO approach to provide dynamism to the analysis.

However, our findings present interesting implications for the future stakeholder orientation literature as well as some aspects that should be considered because some limitations are involved in the measurement of some constructs. This is because our results show, on the one hand, that the traditional culture of universities, identified as a barrier, reflects no significant relationship or, on the other hand, that we could not reflect coercive factors and normative factors as external institutional factors. In this regard, it would be useful to conduct in-depth studies of universities that are very engaged and little engaged in the responsive and proactive stakeholder orientations to understand better the factors that act as barriers or drivers to the implementation of the RSO on the one hand and the PSO on the other hand. Furthermore since coercive and normative factors could be considered as formative constructs, we might suggest testing the performance relationship of these institutional factors using Partial Least Square (PLS) because it can operate with both types of measures (reflective and formative), while the covariance-based methods are primarily designed to operate with the reflective indicators (Cepeda & Roldán, 2004).

Moreover, the findings do not consider aspects such as the present study's consideration of the same antecedents for both constructs, responsive and proactive. Given the results, it could be interesting to explore whether there are antecedents specific to each construct. For example, it could be interesting to explore issues such as internalisation, innovation, and entrepreneurship as antecedents of the PSO. Thus, it would be useful to conduct studies to assess the entrepreneurship, internationalisation, and innovation effects on the PSO.

The interpretations of the findings of this study are also subject to limitations because we have to consider that there are, inevitably, limitations involved in the consideration of performance measurement. For example, the findings obtained by resource acquisition could indicate that these studies do not take into account that the items considered are more focused on measuring the performance of a responsive action than on measuring the resource acquisition from proactive behaviour. Thus, the results may lead researchers to explore whether there are performance measures that are closer to the PSO and others to the RSO. Besides, this study used subjective measures of university performance, so it could be interesting to address in further studies objective measures as key indicators for evaluating the activities of universities. However, nowadays, there is a lack of common theoretical indicator models. Therefore, according to Palomares-Montero and García-Aracil (2011), the data and assessment processes need to be standardised, which means the need for greater agreement over the definition of indicators and their measurement.

Another important limitation derived from this study is related to the measures employed to define the PSO and RSO. According to Bjørkquist (2008), one way of embedding universities in society is by involving external actors; in others words, this means analysing the effect of stakeholders' influence on HEIs because it exercises more pressure on more issues than before. In this way of reasoning, it would be very interesting to explore in greater depth the key stakeholders of HE and the way in which universities respond to their expectations because it should help to define a better conceptualisation of the proactive and responsive stakeholder orientations. According to Llinàs-Audet et al. (2011), many Spanish universities have not fully resolved the methodological problems arising from the complexity of attempting to manage and integrate all their stakeholders into their strategic planning. Thus, it could be interesting to establish further a more accurate Spanish stakeholder map since, as Alves et al.

(2010) suggest, a university that owns the ability to identify, prioritise, and engage with its communities reflects the development of the organisation.

In addition, based on the above assertion and the previous literature on MO and its applications in the non-profit and university context, we propose that it could be interesting to examine the multidimensionality of stakeholder orientation dimensions and readapt the traditional second-order construct, highlighting new dimensions to contemplate the multiple stakeholders' different needs. In the literature, we observed that the traditional MO construct is conceived as a second-order unidimensional construct, but we found a lack of consensus regarding the second-order construct proposals (Álvarez et al., 2002; Akonkwa, 2009; Duque-Zuluaga & Schneider, 2008; Hammond et al., 2006; Hemsley-Brown & Oplatka; 2010; Liao et al., 2001; Ma & Todorovic, 2011; Modi & Mishra, 2010; Rivera-Camino & Ayala, 2010; Sargeant et al., 2002; Voon, 2008).

In general, the present results are encouraging to management and marketing scholars. Hence, another observation in relation to future research is that examining the antecedents – RSO-PSO – performance relationship with moderating effects, as well as additional hypotheses, could be interesting to research in this field. For example, Jongbloed et al. (2008) highlight that it is important to note that for a university the history and geography could influence the university's choice of mission and profile and consequently how it relates to its stakeholders. On this line of reasoning, it should be interesting to explore the culture as a moderator effect instead of considering it as an antecedent. Likewise, Russo et al. (2007) highlight that the potential synergies between universities and local communities increase because of the loss of relevance of nation states and the revamped role of cities. This means exploring the role of cities as moderator effects as an addition to regional effects.

Finally, it would be interesting to look at Solé-Parellada and Berbegal-Mirabent's (2011) study, which provides insights into a successful understanding by university

managers of the importance of their choices since these will have a decisive impact on the strategy of the university, its organisational designs, and, ultimately, its government. In this research, Solé-Parellada and Berbegal-Mirabent (2011) highlight five clusters relating to how universities behave according to the strategic approach taken in terms of their three missions – academic, research, and knowledge transfer – and show the relationship between the quality of knowledge creation, the focus on the demand, and the improvement in university performance. Therefore, it would be interesting to explore the effects that those different clusters (efficient and publication-oriented, small universities with a lack of resources and institutional support, oriented towards the creation of spin-offs; specialised polytechnic universities; teaching-oriented) could exert on both the RSO and the PSO.

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Annexes

Annex I
Spanish public university stakeholders - main groups and subgroups

University internal stakeholders			
Sub variable	**Description/Members**	**Specific examples in universities websites**	**Related investigations**
Seniors HEI managers	Governing team, Management team, Secretary General, Ombudsman, dean teams, heads of departments, …	Rector, manager, dean, head department, director of institute …	**14** researches. From Weaver (1976) to nowadays (i.e. Benneworth & Jongbloed (2010)
University staff	Faculty, Staff Administration, Support Staff	Tenured and non tenured staff	**23** researches, 7 which considers the group in a more extensive way ("university staff"), while 16 considers exclusively only the academics as stakeholders ("academic staff"), and finally 6 of them considers in addition the administration staff
HEIs governing bodies	Governing board, University Senate, Social Council, faculty boards, council of departments, institutes governing bodies, ...		
Advisory bodies	Delegate committees	Academic and economic activities	
Consultative bodies	Groups of delegates	More specific topics for shorter periods of time	
Trade Unions	Committees of teaching and research staff, committees of administrative staff, employee committees , safety committees		**1** research: Caballero et al. (2009)

Annex I Spanish public university stakeholders - main groups and subgroups

Academic, research and knowledge transfer stakeholders			
Sub variable	**Description/Members**	**Specific examples in universities websites**	**Related investigations**
Academic and non-academic employees	Faculty, researches, fellows	Research trainees as "PIF", "Ramones y Cajales", "Serra-Hunter"	
Sponsors/Donors	Family, alumni, employees, friends	Retired staff	**5** researches
Social networks	Users	Facebook, twitter, LinkedIn, …	
Structures of university research	University research groups, mixed research groups, CSIC, ...		
Public research organisms	In some cases become a network of parallel research in universities	CSIC (Consejo Superior de Investigaciones Científicas), IEO (Instituto Español de Oceanografía), INIA (Instituto Nacional de Investigación y Tecnología Agraria y Alimentaria), IAC (Instituto de Astrofísica de Canarias), ISCIII (Instituto de Salud Carlos III), CIEMAT (Centro de Investigaciones Energéticas, Medioambientales y Tecnológicas), IGME (Instituto Geológico y Minero de España)	
Own foundations	University's foundations		
Teaching groups			
Foundations of the Spanish system		FECYT (Fundación Española para la Ciencia y la Tecnología), Universidad.es (Fundación para la proyección internacional de las universidades españolas), Genoma España	
Universidad-Empresa Foundation (FUE)	Created jointly by universities and chambers of commerce		
Scientific and Technological Park		http://www.idi.mineco.gob.es/portal/site/MICINN/menuitem.7eeac5cd345b4f34f09dfd1001432ea0/?vgnextoid=01c027bba0d90210VgnVCM1000001034e20aRCRD	
European Technology		http://www.idi.mineco.gob.es/portal/site/MICINN/menuitem.7eeac5cd345b4f34f09dfd1001432ea0/?vgnextoid=b0b841f658431210Vg	

Academic, research and knowledge transfer stakeholders		
Platforms		nVCM1000001034e20aRCRD
Technology Centres (TC) and Centres for Innovation Technology (CAIT)	Non-profit organisations, created with the aim of contributing to the overall benefit of society and the improvement of the competitiveness of enterprises	http://www.idi.mineco.gob.es/portal/site/MICINN/menuitem.7eeac5cd345b4f34f09dfd1001432ea0/?vgnextoid=967227bba0d90210VgnVCM1000001034e20aRCRD
European Business and Innovation Centres (CEEI)	There are 21 CEEI in Spain	http://www.ances.com/
Private sector	Companies with R&D departments	
Networks, clusters and local lobbies	University networks of research, knowledge transfer, academics	Xarxa Vives d'Universitats, RedUGI Red de Universidades, martketplace tecnológico madri+d, Red entidades empresariales del sistema madri+d, RUVID Red de Universidades Valencianas,
Networks, clusters and national lobbies	University networks of research, knowledge transfer, academics	RedOTRI Red de Oficinas de Transferencias de Resultados de Investigación de las Universidades Españolas, REBIUN (Red de Bibliotecas Universitarias), Portal UNIVERSIA, REUS (Red Española de Universidades Saludables), REDFUE (Red de Fundaciones Universidad Empresa), SIOU (Servicios de Información y Orientación I+O de 36 universidades españolas), EU2015,
Networks, clusters and international lobbies	University networks of research, knowledge transfer, academics	Red HUMANE (Heads of University Management & Administration Network in Europe), RAUI (Red de Administradores de Universidades Iberoamericanas), Grupo Compostela, Grupo Coimbra, Santander Group is a European Universities Network, UNICA (network of universities from the capital cities of Europe), Max Planck Society, ERRIN, (European Regions Research and Innovation Network), ERA NET,

Annex I Spanish public university stakeholders - main groups and subgroups

Academic, research and knowledge transfer stakeholders			
		ResearchGate, EI (Education International), EEN (Red Europea Enterprise Europe Network), BUSINESSEUROPE (Antigua UNICE), IASP (A worldwide network of innovation), Red Europea EURAXESS, EPUF (Euromed Permanent University Forum), GUNI Global University Network, T.I.M.E. Association (Network engineering), UNITECH International (Network of professional), EUROLIFE (Network of european universities in life science), ICA (Association for European Life Science Universities)	
Alliances		Alianza 4 universidades, Venice International University	**4** researches: Burrows (1999), Jongbloed et al. (2008), Chapleo & Simms (2010), Benneworth & Jongbloed (2010)
Social Networks	Users groups	Facebook, twitter, LinkedIn, …	
Donors/sponsors	Institutions	CREI (Centre de Recerca en Economia Internacional)	**5** researches

Local stakeholders (city, regions, autonomous communities)			
Sub variable	**Description/Members**	**Specific examples in universities websites**	**Related investigations**
Government entities	Local administrations (autonomous communities, deputations, town councils) and Autonomous Communities' Agencies	Consejerías de Educación de las CCAA, AQU (Agència per a la Qualitat del Sistema Universitari de Catalunya), AQUIB (Agència de Qualitat Universitària de les Illes Balears), Agencia Canaria de Calidad Universitaria y Evaluación Educativa, Agencia de Calidad Universitaria de Castilla-La Mancha, Agencia de Calidad, Acreditación y Prospectiva de las Universidades de Madrid, SENECA Agencia de Ciencia y Tecnologia, Región de Múrcia, UNIBASQ - Agencia de Calidad del Sistema Universitario Vasco	**11** researches
Regulatory governmental entities	Funding agencies, Support Research Bodies, Regional Development Agencies	ANECA (Agencia Nacional de Evaluación de la Calidad y Acreditación), AECID (Agencia Española de Cooperación Internacional para el Desarrollo),	**4** researches. One of them consider local authorities as an stakeholder group
Regulatory NON-Governmental Entities	Foundations, accreditation bodies, professional associations, non-governmental organisations	Institut Confuci de Barcelona, GLOBALleida, REDIT Red de Institutos Tecnológicos de la Comunitat Valenciana, Cámara de Comercio de Cantabria, Madrid+i,	**3** researches. In addition, two consider professional associations as stakeholders.
Communities	Neighbours, social services, chambers of commerce, special interest groups ...		
Local suppliers	Schools and high schools, EIS, service companies, other formation institutions		**5** researches (not differ among local/ national/international)
Local competitors	Professional training Schools, EIS, Training in company	Barcelona Centre Universitari, Goethe-Institut Madrid,	**7** researches (not differ among local/ national/international)
Local employers		Employment agencies	**24** researches (not differ among local/ national/international)
Local media	Television, radio, press, digital press	RedDI Revista de Divulgación Informática	**3** researches (not differ among local/ national/international)

National stakeholders			
Sub variable	**Description/Members**	**Specific examples in universities websites**	**Related investigations**
Government entities	National administrations	Ministerio de Economía y Competitividad, Ministerio de Educación y Ciencia, Ministerio de Hacienda, Ministerio de Industria Turismo y Comercio	**6** reserches, 3 only consider Education Ministry: Pavičić et al. (2009), Tetřevová & Sabolová (2010)
Regulatory governmental entities	National agencies, National associations and councils, Patent offices	ANECA (Agencia Nacional de Evaluación de la Calidad y Acreditación), AIDIT (Agencia de Acreditación en Investigación, Desarrollo e Innovación Tecnológica),CDTI (Centro para el Desarrollo Tecnológico Industrial), OTRI (Oficinas de Transferencia de Resultados de Investigación), OEPM Oficina Española de Patentes y Marcas, APTE (Asociación de parques científicos y tecnológicos de España), APICSCIC (Asociación de Personal Investigador del CSIC), RedIRIS	**4** researches (not differ among local/ national/international)
Regulatory non-governmental entities	Foundations, Groups/Committees of national advisory, professional associations, non-governmental organisations	ENAC(Entidad Nacional de Acreditación), FUNIBER, Universidad.es, Fundación para la proyección internacional de las universidades españolas, INJUVE, FEDIT (Federación Española de Entidades de Innovación y Tecnología), CEURI (Comité Español Universitario de Relaciones Internacionales), CRUE (Conferencia de Rectores de la Universidades Españolas), CASUE (Comisión Académica Sectorial de las Universidades Españolas), CICUE (Comisión de Internacionalización y Cooperación de las Universidades Españolas), MDG (Mesa de Gerentes de las Universidades Españolas), CdCUE (Comisión de Comunicación de las Universidades Españolas), CNEAI (Comisión Nacional Evaluadora de la Actividad Investigadora), COSEU (Comisión de Seguimiento de la Estrategia Universidad 2015), AUGE (Agencia Universitaria para la Gestión del Conocimiento),	**3** researches (not differ among local/ national/international)

National stakeholders			
National suppliers	Schools and high schools, EIS, service companies, Other formation institutions		**5** researches (not differ among local/ national/international)
National competitors	Professional Training Schools, EIS, Training in company		**7** researches (not differ among local/ national/international)
National employers			**24** researches (not differ among local/ national/international)
Financial institutions	Banks, investment fund managers, analysts	INNOVA31, S.C.R.S.A. (societat de capital risc), Banco Popular, Banc Sabadell, Banco Bilbao Vizcaya y Argentaria, Banco Santander, Caja Madrid, Catalunya Caixa, Unnim	**3** researches (not differ among local/ national/international)
National media	Television, radio, press, digital press, media public organisations	SINC (Servicio de información y noticias científicas), ICONO (Observatorio Español de I+D+I para la Competitividad)	**3** researches (not differ among local/ national/international)

Annex I Spanish public university stakeholders - main groups and subgroups

International stakeholders			
Sub variable	**Description/Members**	**Specific examples in universities websites**	**Related investigations**
Government entities	European administrations	European Commission, Council of Europe	**6** researches, 3 of them only consider the Ministry of Education: Pavičić et al. (2009), Tetřevová & Sabolová (2010)
Regulatory governmental entities	Associations and the International Councils, European Technology Platforms, Security Agencies, Patent Office	European Commission EuropeAid, ERA (European Research Area), EURASHE Europäische Bewegung für das Inkrafttreten des RASHE Abkommens, EUROHORCS (European Heads of Research Councils), Council for Higher Education Accreditation, ECA (European Consortium for Accreditation), ERC (European Research Council), ICDE (International Council for Open and Distance), Atlantis consortium EU-US, EPO (The European Patent Office), UNESCO	**4** researches (not differ among local/ national/international)
Regulatory non-governmental entities	Foundations, International Groups/Committees	EUA (European University Association), AAHE (The American Association for Higher Education), CRISCOS (Consejo de Rectores por la Integración de la Subregión Centro Oeste de Sudamérica), ACA (Academia Cooperation Association), UNAMAZ (Asociación de Universidades Amazonicas), AUIP (Asociación Universitaria Iberoamericana de Postgrado), AULA (Asociación de Universidades Latinoamericanas), Columbus, IESALC (Instituto Internacional para la Educación Superior en América Latina y el Caribe), ALCUE (Common Area of Higher Education), EUREKA, EURASHE (European Association of Institutions in Higher Education), AUGM (Asociación de Universidades Grupo Montevideo), UDUAL (Unión de Universidades de América Latina y el Caribe), EAIE (European Association for International Education), Proton Europe (European Knowledge Transfer Association), ECIU (European Consortium of Innovative Universities),	**3** researches (not differ among local/ national/international)

International stakeholders			
		PEACE (Programme for Palestinian European Academic Cooperation in Education), IAU (International Associations of Universities), UNIMED (Mediterranean Universities Union),	
International Suppliers	Schools and high schools, EIS, service companies, Other formation institutions		**5** researches (not differ among local/ national/international)
International Competitors	Professional Training Schools, EIS, Training in company		**7** researches (not differ among local/ national/international)
European or international employers			**24** researches (not differ among local/ national/international)
Financial institutions	Banks, investment fund managers, analysts		**3** researches (not differ among local/ national/international)
International media	Television, radio, press, digital press, networks, websites	CORDIS (Servicio de Información Comunitario sobre I+D), Rankings	**3** researches (not differ among local/ national/international)

Annex I Spanish public university stakeholders - main groups and subgroups

Students as stakeholders			
Sub variable	**Description/Members**	**Specific examples in universities websites**	**Related investigations**
Families/clienteles	father/families, state, university, other patrons		From 38 researches analysed, **14** of them consider this group as HEIs stakeholders
Prospective students			3 researches consider those as HEIs stakeholders (Pavičić et al., 2009; Akonkwa, 2009; Chapleo & Simms, 2010)
Current students			From 38 researches analysed, **28** of them consider those stakeholders as a stakeholder group
Graduates/alumni			**7** researches consider these group as stakeholder group
Students entities	University Students' Council of the State, Student Council, Student representation, delegates		
Students associations and organisations		Erasmus Friends Network, Asociaciones Alumnis, Marie Curie Fellows Associations, EURODOC (Asociación Europea de estudiantes de doctorado y jóvenes investigadores),	Only **1** of research analysed consider it as a group (Chapleo & Simms, 2010)
Students networks		RUNAE (Red Universitaria de Asuntos Estudiantiles), ESIB (The National Union of Students in Europe), AEGEE (Forum de Estuadiantes Europeos), Red Enic-Naric	

Specifically noted that **11** researches identify "society" as a stakeholder group, two of them referring as "general public".

Annex II
Distribution universities and autonomous communities

Table AII.1 Distribution universities and autonomous communities

University	Frequency	Percent
UCM	349	4.9%
UPM	295	4.1%
US	278	3.9%
UGR	271	3.8%
UB	260	3.6%
UV	227	3.2%
EHU	220	3.1%
UPV	208	2.9%
USC	206	2.9%
UNIZAR	195	2.7%
UAM	194	2.7%
UAB	183	2.6%
UVA	182	2.6%
ULL	178	2.5%
UMA	165	2.3%
UA	163	2.3%
UPC	162	2.3%
USAL	162	2.3%
UM	155	2.2%
UCLM	152	2.1%
UDC	146	2.0%
UVIGO	144	2.0%
UCA	141	2.0%
UJAE	135	1.9%
UCO	124	1.7%
ULPG	124	1.7%
ULEON	122	1.7%
URV	122	1.7%
UNIC	121	1.7%
UNIOVI	121	1.7%
URJC	121	1.7%
UC3M	117	1.6%
UHU	116	1.6%
UMH	113	1.6%
UdG	110	1.5%
UEXT	103	1.4%
UAH	101	1.4%
UBU	98	1.4%
UPF	95	1.3%
UJI	91	1.3%
UDL	90	1.3%
UIB	87	1.2%
UPO	82	1.2%
UPCT	79	1.1%
UNAV	75	1.1%
UAL	64	0.9%
UNIRIOJA	64	0.9%
UNIA	19	0.3%
Total	**7,130**	**100.0%**

CCAA	Frequency	Percent
AND	1,395	19.6%
MAD	1,177	16.5%
CAT	1,022	14.3%
VAL	802	11.2%
CYL	564	7.9%
GAL	496	7.0%
ISC	302	4.2%
MUR	234	3.3%
PVA	220	3.1%
ARA	195	2.7%
CLM	152	2.1%
AST	121	1.7%
CAN	121	1.7%
EXT	103	1.4%
ISB	87	1.2%
NAV	75	1.1%
RIO	64	0.9%
Total	**7,130**	**100.0%**

See Annex VIII for detail of abbreviations

Annex III
Questionnaire used

Marketing estratégico y orientación a la sociedad de las universidades

INTRODUCCIÓN

Estimado/da,

Nuevamente le damos las gracias por dar respuesta al presente cuestionario cuya información nos permitirá desarrollar los objetivos planteados en la tesis doctoral. A continuación le informamos de ciertos aspectos a tener en cuenta para responder al presente cuestionario:
1. Dar respuesta al presente cuestionario requiere un tiempo estimado de unos 20 minutos.
2. Puede interrumpir la encuesta y seguir cuando usted crea oportuno. Solo tiene que cerrar la página web. Para volver a acceder a la encuesta debe volver a hacer clic al link que se le proporcionó en el mail.
3. Las preguntas marcadas con un (*) requieren de una respuesta para avanzar por el cuestionario. Las demás preguntas son libres de responder, en todo caso, le agradeceríamos enormemente que, en la medida que le sea posible, de respuesta al mayor número de cuestiones que le sean posible.
4. Para avanzar por la encuesta utilice los siguientes botones de navegación:
a. Haga clic en el botón Siguiente para avanzar a la página siguiente.
b. Haga clic en el botón Anterior para volver a la página anterior.
5. Tenga presente que para que los datos sean guardados tiene que avanzar a la página siguiente. Aunque guarde los datos podrá seguir modificando sus respuestas tantas veces como crea oportuno.
6. Cuando de por terminada definitivamente la encuesta haga clic en el botón Listo para enviar el cuestionario. Tenga presente que una vez enviado la encuesta se dará por terminada ya no podrá volver a acceder a ella.
7. Si tiene cualquier pregunta o duda sobre el cuestionario no dude en comunicarse conmigo por correo electrónico a: carme.casablancas@uab.cat.

Muchas gracias por su valiosa colaboración.

Marketing estratégico y orientación a la sociedad de las universidades

INFORMACIÓN PERSONAL Y PROFESIONAL

***1. Indique el género al cual pertenece**

- ◯ Femenino
- ◯ Masculino

***2. Indique a cuál de las siguientes áreas de conocimiento pertenece su formación académica**

- ◯ Ciencias de la Salud
- ◯ Ciencias
- ◯ Ingenierías y Arquitectura
- ◯ Ciencias Sociales y Jurídicas
- ◯ Humanidades

3. Indique el nombre de la universidad y el país en el que obtuvo su máximo grado de formación académica

Universidad

País

***4. Indique la comunidad autónoma a la que pertenece la universidad donde trabaja**

***5. Seleccione a cuál de los siguientes grupos pertenece en la actualidad**

- ◯ Personal docente y/o investigador
- ◯ Personal de Administración y Servicios
- ◯ Externo a la Institución

INFORMACIÓN PERSONAL Y PROFESIONAL

*6. Indique su actual categoría profesional

- ◯ Otros
- ◯ Catedrático/a Universidad
- ◯ Titular Universidad
- ◯ Catedrático/a Escuela Universitária
- ◯ Titular Escuela Universitária
- ◯ Profesor/a Emérito/a
- ◯ Catedrático/a Contratado/a
- ◯ Contratado/a Doctor/a
- ◯ Ayudante Doctor/a
- ◯ Profesor/a Colaborador/a
- ◯ Profesor/a Asociado/a

Otros (especifique)

*7. Seleccione el cargo directivo/gestión/responsabilidad que está ocupando actualmente

Otro (especifique)

*8. Indique el plazo de tiempo (años) que lleva desarrollando el cargo actual

- ◯ de 0 a 2 años
- ◯ de 2 a 4 años
- ◯ de 4 a 6 años
- ◯ más de 6 años

INFORMACIÓN PERSONAL Y PROFESIONAL

***9. Seleccione el cargo directivo/gestión/responsabilidad que está ocupando actualmente**

- ◯ Gerente/a
- ◯ Vicegerente/a
- ◯ Director/a de area o servicio
- ◯ Director/a gerente de fundaciones/asociaciones/parques científicos
- ◯ Otros

Otro (especifique)

***10. Indique el plazo de tiempo (años) que lleva desarrollando el cargo actual**

INFORMACIÓN PERSONAL Y PROFESIONAL

***11. Seleccione el cargo de responsabilidad que está desarrollando actualmente**

- ◯ Otros
- ◯ Presidente/a Consejo Social
- ◯ Vicepresidente/a Consejo Social
- ◯ Secretario/a Consejo Social
- ◯ Consejero/a del Consejo Social
- ◯ Presidente/a Instituto/Centros Investigación
- ◯ Presidente/a Fundaciones/Asociaciones
- ◯ Director/a General Fundaciones/Asociaciones

Otro (especifique)

***12. Indique el tiempo (años) que lleva desarrollando el actual cargo que ocupa**

INFORMACIÓN PERSONAL Y PROFESIONAL

***13. Seleccione el grupo de edad del que forma parte**

14. Indique si está registrado en las siguientes herramientas web y, si su uso, es a nivel personal o a nivel profesional, o ambas cosas

	Uso personal	Uso profesional
Facebook	☐	☐
Linkedin	☐	☐
Twitter	☐	☐
Skype	☐	☐

15. Tiene un blog?

- ◯ SI
- ◯ NO

INFORMACIÓN PERSONAL Y PROFESIONAL

16. Indique la asiduidad en la que actualiza el mismo

	diaria	semanal	menusal	trimestral	bianual	anual
actualización blog	◯	◯	◯	◯	◯	◯

VALORACIÓN DE ASPECTOS RELATIVOS AL ENTORNO EXTERNO E INTERNO DE LAS U...

Tenga presente que, siguiendo a Freeman, definimos a los "stakeholders" como: cualquier grupo y/o individuos que están o pueden verse influenciados por los objetivos y/o misiones establecidos por una organización.

17. Valore del 1 (totalmente en desacuerdo) al 7 (totalmente de acuerdo) las siguientes afirmaciones relativas a la necesidad de COPIAR ACCIONES EXITOSAS DE OTRAS UNIVERSIDADES:

	1	2	3	4	5	6	7	N/C
Es importante que nuestra universidad se involucre en las mismas actividades/servicios orientados a la sociedad que otras universidades similares	◯	◯	◯	◯	◯	◯	◯	◯
Es necesario que los diferentes "stakeholders" vean que orientamos nuestras actividades/servicios de un modo similar a otras universidades	◯	◯	◯	◯	◯	◯	◯	◯
La probabilidad de fracaso de una estrategia se reduce si aplicamos estrategias similares a las de otras universidades	◯	◯	◯	◯	◯	◯	◯	◯
Establecer estrategias similares asegura con toda probabilidad que la implementación de éstas serán válidas y apropiadas	◯	◯	◯	◯	◯	◯	◯	◯

18. Valore del 1 (total desacuerdo) al 7 (totalmente de acuerdo) las siguientes afirmaciones relativas a la TRADICIONAL CULTURA DE LA UNIVERSIDAD:

	1	2	3	4	5	6	7	N/C
La complejidad de la universidad se soluciona con la aplicación de métodos burocráticos que limiten la autonomía universitaria	◯	◯	◯	◯	◯	◯	◯	◯
Los académicos manifiestan cierta resistencia a introducir interferencias de agentes externos en el sistema de organización actual de la universidad	◯	◯	◯	◯	◯	◯	◯	◯
Los académicos funcionarios se consideran más pertenecientes a una parte de la administración pública que a una institución que sirve a la comunidad	◯	◯	◯	◯	◯	◯	◯	◯
Los académicos se ven a sí mismos como profesionales que trabajan EN la universidad y no PARA la universidad	◯	◯	◯	◯	◯	◯	◯	◯
Los académicos han de tener la libertad de guiar sus actividades docentes e investigadoras	◯	◯	◯	◯	◯	◯	◯	◯
Los académicos tienden a sentirse más fuertemente ligados a su disciplina que a su universidad	◯	◯	◯	◯	◯	◯	◯	◯
La existencia de intereses múltiples (docencia, investigación, transferencia de conocimiento) hace complejo el organizar y coordinar tareas	◯	◯	◯	◯	◯	◯	◯	◯

19. Valore del 1 (total desacuerdo) al 7 (totalmente de acuerdo) las siguientes afirmaciones relativas a la COMPLEJIDAD DE LA UNIVERSIDAD:

	1	2	3	4	5	6	7	N/C
Existe una dificultad de alineación de objetivos provocada por la coexistencia de objetivos "transparentes" y objetivos "encubiertos"	◯	◯	◯	◯	◯	◯	◯	◯
Existe una dificultad de alineación de objetivos relacionados en cómo la universidad sirve las necesidades de la sociedad y de objetivos relacionados con el propio funcionamiento interno	◯	◯	◯	◯	◯	◯	◯	◯
Dada la disparidad de necesidades que han de ser satisfechas, la universidad se ve involucrada en múltiples actividades para múltiples "stakeholders"	◯	◯	◯	◯	◯	◯	◯	◯
La problemática de priorizar las múltiples necesidades de los "stakeholders" se resuelve mediante decisiones políticas que responden a una estrategia de la propia universidad	◯	◯	◯	◯	◯	◯	◯	◯

20. Valore del 1 (total desacuerdo) al 7 (totalmente de acuerdo) los siguientes aspectos relativos al DESARROLLO DE SU CARGO DE GESTIÓN/DIRECTIVO/RESPONSABILIDAD:

	1	2	3	4	5	6	7	N/C
Me esfuerzo en explicar a las personas de mi ámbito de influencia que el éxito de sus actividades/servicios depende de que sepan adaptarlas a los estudiantes, empleadores y a las instituciones formativas, presentes y futuras	○	○	○	○	○	○	○	○
Animo asiduamente a las personas de mi entorno a que tengan presente las actividades/servicios que ofrecen otras universidades públicas	○	○	○	○	○	○	○	○
Insisto a las personas más cercanas que deben intensificar la búsqueda de futuras necesidades de nuestros estudiantes, empleadores e instituciones formativas	○	○	○	○	○	○	○	○
Creo que servir las necesidades de nuestros estudiantes, empleadores e instituciones formativas es prioritario en nuestra universidad	○	○	○	○	○	○	○	○

21. Valore del 1 (total desacuerdo) al 7 (totalmente de acuerdo). En mi universidad:

	1	2	3	4	5	6	7	N/C
Es fácil hablar con los diferentes miembros de la institución, independientemente de su nivel o su posición dentro de la institución	○	○	○	○	○	○	○	○
Es fácil encontrar canales y lugares para contrastar opiniones de una manera INFORMAL	○	○	○	○	○	○	○	○
Es fácil encontrar canales y lugares para contrastar opiniones de una manera FORMAL	○	○	○	○	○	○	○	○
Existe generalmente una buena comunicación entre las diferentes estructuras que la conforman (departamentos, institutos, centros, áreas, …)	○	○	○	○	○	○	○	○
Existen buenas relaciones de trabajo entre las diferentes estructuras organizativas que conforman la institución	○	○	○	○	○	○	○	○

ASPECTOS RELATIVOS A LA ORIENTACIÓN A LA SOCIEDAD

Recuerde que, siguiendo a Freeman, definimos a los "stakeholders" como: cualquier grupo y/o individuos que están o pueden verse influenciados por los objetivos y/o misiones establecidos por una organización.

22. Valore del 1 (totalmente en desacuerdo) al 7 (totalmente de acuerdo) las siguientes afirmaciones relacionadas con la ORIENTACIÓN HACIA SUS "STAKEHOLDERS":

	1	2	3	4	5	6	7	N/C
Nuestro principal objetivo es entender las necesidades explicitas de los diferentes "stakeholders" de nuestros servicios y actividades	○	○	○	○	○	○	○	○
Para conseguir ventajas competitivas diseñamos estrategias en función de la información obtenida sobre necesidades explicitas de nuestros "stakeholders"	○	○	○	○	○	○	○	○
Controlamos constantemente nuestro nivel de compromiso en servir las necesidades explícitas de nuestros "stakeholders"	○	○	○	○	○	○	○	○
Medimos la viabilidad/utilidad de nuestras actividades mediante el grado de satisfacción de nuestros "stakeholders"	○	○	○	○	○	○	○	○
Para evaluar los servicios realizados a nuestros "stakeholders" aplicamos de forma frecuente medidas sistemáticas	○	○	○	○	○	○	○	○
Los cargos directivos mantenemos contacto regular con los "stakeholders" que tenemos bajo nuestra responsabilidad	○	○	○	○	○	○	○	○

23. Valore del 1 (totalmente en desacuerdo) al 7 (totalmente de acuerdo) las siguientes afirmaciones relacionadas con la ORIENTACIÓN A LA ADQUISICIÓN DE SUS RECURSOS:

	1	2	3	4	5	6	7	N/C
Buscamos regularmente el "feedback" con las instituciones públicas y privadas, financiadores y mecenas de nuestras actividades y/o servicios	○	○	○	○	○	○	○	○
Verificamos periódicamente los efectos de posibles cambios en nuestro entorno más cercano referentes a nuestros “stakeholders”	○	○	○	○	○	○	○	○
Evaluamos la satisfacción de nuestros organismos financiadores y mecenas a través de verificar el grado de ejecución de nuestras actividades, proyectos y/o servicios	○	○	○	○	○	○	○	○
Si percibimos que a nuestros organismos financiadores y mecenas les gustaría que modificaremos nuestra oferta de actividades hacemos un esfuerzo en ese sentido	○	○	○	○	○	○	○	○

24. Valore del 1 (totalmente en desacuerdo) al 7 (totalmente de acuerdo) las siguientes afirmaciones relacionadas con su orientación a la COLABORACIÓN CON DEMÁS INSTITUCIONES SIMILARES:

	1	2	3	4	5	6	7	N/C
Los órganos y cargos de gestión estamos interesados en saber cómo funcionan otras universidades	○	○	○	○	○	○	○	○
Disponemos de información sobre acciones y actividades de otras universidades similares	○	○	○	○	○	○	○	○
Controlamos periódicamente los puntos fuertes y débiles de comunidades científicas, empleadores, colegios profesionales y financiadores privados y las utilizamos para mejorar nuestras actividades	○	○	○	○	○	○	○	○
La información relativa a estrategias de otras universidades y/o organizaciones similares es libremente compartida por toda la organización	○	○	○	○	○	○	○	○
Compartimos en redes recursos con otras universidades y/o organizaciones similares	○	○	○	○	○	○	○	○

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25. Valore del 1 (totalmente en desacuerdo) al 7 (totalmente de acuerdo) las siguientes afirmaciones en relación a SU ORIENTACIÓN AL ENTORNO:

	1	2	3	4	5	6	7	N/C
Los altos cargos directivos y los órganos de gobierno consideramos importante colaborar con otras organizaciones similares	◯	◯	◯	◯	◯	◯	◯	◯
Estamos más atentos a las agencias reguladoras, a la comunidad local y a los medios de comunicación que las demás universidades públicas	◯	◯	◯	◯	◯	◯	◯	◯
Entendemos mejor las necesidades de las agencias reguladoras, la comunidad local y los medios de comunicación que otras universidades e instituciones de educación y formación similares	◯	◯	◯	◯	◯	◯	◯	◯

26. Valore del 1 (totalmente en desacuerdo) al 7 (totalmente de acuerdo) las siguientes afirmaciones relativas a la COORDINACIÓN INTER-FUNCIONAL DE SU UNIVERSIDAD:

	1	2	3	4	5	6	7	N/C
Las diferentes estructuras y cargos de gestión tenemos muy buena comunicación con los órganos de gobierno superiores	◯	◯	◯	◯	◯	◯	◯	◯
Todos los órganos de gobierno y sus áreas funcionales estamos coordinados para servir las necesidades explícitas de nuestros “stakeholders”	◯	◯	◯	◯	◯	◯	◯	◯
Comunicamos libremente a toda las estructuras existentes información sobre los resultados de las experiencias con nuestros “stakeholders”	◯	◯	◯	◯	◯	◯	◯	◯
Informamos de forma regular y a todos los niveles sobre el grado de satisfacción de los diferentes “stakeholders”	◯	◯	◯	◯	◯	◯	◯	◯
Si sucede algo importante con algún "stakeholder" ponemos rápidamente al corriente a toda la organización	◯	◯	◯	◯	◯	◯	◯	◯
Encuestamos una vez al año a los diferentes “stakeholders” para evaluar la calidad de nuestros servicios y actividades	◯	◯	◯	◯	◯	◯	◯	◯
Realizamos reuniones sistemáticas con las diferentes estructuras para implementar mejoras en nuestros servicios y actividades	◯	◯	◯	◯	◯	◯	◯	◯
Revisamos periódicamente nuestros servicios y actividades para asegurar que están en la línea de atender a las necesidades explícitas de nuestros “stakeholders”	◯	◯	◯	◯	◯	◯	◯	◯

27. Valore del 1 (totalmente en desacuerdo) al 7 (totalmente de acuerdo) las siguientes afirmaciones relacionadas con su ORIENTACIÓN PRO-ACTIVA HACIA LOS "STAKEHOLDERS":

	1	2	3	4	5	6	7	N/C
Para conseguir ventajas competitivas intentamos descubrir las necesidades latentes de los “stakeholders”	◯	◯	◯	◯	◯	◯	◯	◯
Ayudamos a “stakeholders” a anticiparse a futuros desarrollos en su entorno social	◯	◯	◯	◯	◯	◯	◯	◯
Realizamos "brainstormings" para comprobar de qué modo nuestras actividades/servicios están siendo percibidas y utilizadas por diferentes “stakeholders”	◯	◯	◯	◯	◯	◯	◯	◯
El "feedback" recibido por parte de los “stakeholders” influye en el proceso de aprendizaje y de identificación de sus necesidades latentes	◯	◯	◯	◯	◯	◯	◯	◯
Desarrollamos nuevas formulas de actividades y servicios aún a riesgo de que éstas no puedan ser productivas	◯	◯	◯	◯	◯	◯	◯	◯
Buscamos oportunidades en áreas donde los “stakeholders” tienen mayor dificultad en identificar sus expectativas	◯	◯	◯	◯	◯	◯	◯	◯
Proporcionamos a los “stakeholders” información útil que les ayude a entender qué pueden esperar de las actividades y servicios de nuestra universidad	◯	◯	◯	◯	◯	◯	◯	◯

28. Valore del 1 (totalmente en desacuerdo) al 7 (totalmente de acuerdo) las siguientes afirmaciones relacionadas con su ORIENTACIÓN PRO-ACTIVA A LA ADQUISICIÓN DE RECURSOS:

	1	2	3	4	5	6	7	N/C
Todos los cargos de gestión, así como los diferentes órganos de gobierno, estamos muy pendientes de nuevas oportunidades de financiación	◯	◯	◯	◯	◯	◯	◯	◯
Priorizamos el desarrollo de actividades nuevas con la finalidad de atraer nuevas formas de financiación	◯	◯	◯	◯	◯	◯	◯	◯
Como mínimo una vez al año mantenemos contacto con nuestros principales organismos financiadores públicos y privados con la finalidad de averiguar en qué actividades podrían estar interesados en un futuro	◯	◯	◯	◯	◯	◯	◯	◯
Intentamos identificar qué miembros de la comunidad universitaria están predispuestos a dar apoyo más allá del rol que tienen definido	◯	◯	◯	◯	◯	◯	◯	◯

29. Valore del 1 (totalmente en desacuerdo) al 7 (totalmente de acuerdo) las siguientes afirmaciones relacionadas con su orientación PRO-ACTIVA A LA COLABORACIÓN CON DEMÁS INSTITUCIONES SIMILARES:

	1	2	3	4	5	6	7	N/C
Los altos cargos directivos y los órganos de gobierno debatimos de forma regular las oportunidades de colaborar con otras organizaciones similares	◯	◯	◯	◯	◯	◯	◯	◯
Realizamos búsquedas estratégicas de instituciones con la finalidad de colaborar con ellos en futuras alianzas, redes y "lobbies"	◯	◯	◯	◯	◯	◯	◯	◯
Mantenemos buenas relaciones con instituciones con las que se pueden formar futuras alianzas, redes y "lobbies"	◯	◯	◯	◯	◯	◯	◯	◯
Los cargos de gestión tenemos claro que nuestros objetivos estratégicos se consiguen mediante esfuerzos de colaboración con otras universidades y/o organizaciones	◯	◯	◯	◯	◯	◯	◯	◯

30. Valore del 1 (totalmente en desacuerdo) al 7 (totalmente de acuerdo) las siguientes afirmaciones en relación a su ORIENTACIÓN PRO-ACTIVA AL ENTORNO:

	1	2	3	4	5	6	7	N/C
Para conseguir nuevos “stakeholders” nos orientamos a aquellas agencias reguladoras, comunidades locales y medios de comunicación que sabemos van a sernos más útiles	◯	◯	◯	◯	◯	◯	◯	◯
Los cargos de gestión y los diferentes órganos de gobierno debatimos regularmente de forma sistemática y transparente nuestras fortalezas y debilidades comparándolas con las de otras universidades	◯	◯	◯	◯	◯	◯	◯	◯
En nuestra universidad alentamos a las agencias reguladoras, comunidades locales y medios de comunicación a mostrar sus comentarios constructivos de carácter positivo/negativo	◯	◯	◯	◯	◯	◯	◯	◯

31. Valore del 1 (totalmente en desacuerdo) al 7 (totalmente de acuerdo) las siguientes afirmaciones relativas a la COORDINACIÓN INTER-FUNCIONAL PRO-ACTIVA DE SU UNIVERSIDAD:

	1	2	3	4	5	6	7	N/C
Trabajamos de forma muy cercana con aquellos usuarios mas pioneros capaces de identificar las expectativas de los “stakeholders” a meses, o años vista, antes de que la mayoría de la sociedad las reconozca y se las haga suyas	○	○	○	○	○	○	○	○
Interpretamos las expectativas clave para tener una mayor visibilidad de lo que los usuarios actuales necesitarán en el futuro	○	○	○	○	○	○	○	○
Múltiples estructuras y cargos de gestión nos reunimos periódicamente para asegurarnos que nuestros servicios y/o actividades están en la línea de atender las necesidades latentes de nuestros “stakeholders”	○	○	○	○	○	○	○	○

VALORACIÓN DE ASPECTOS RELACIONADOS CON MEDIDAS SUBJETIVAS DE LOS RESU...

Recuerde que, siguiendo a Freeman, definimos a los ""stakeholders"" como: cualquier grupo y/o individuos que están o pueden verse influenciados por los objetivos y/o misiones establecidos por una organización.

32. Indique del 1 (muy insuficientes) al 7 (muy satisfactorias) su valoración con respecto a:

	1	2	3	4	5	6	7	N/C
La tipología de actividades/servicios que su universidad ofrece	○	○	○	○	○	○	○	○
La calidad de las actividades/servicios que su universidad ofrece	○	○	○	○	○	○	○	○
El grado en que las actividades/servicios de su universidad han logrado satisfacer a sus beneficiarios	○	○	○	○	○	○	○	○
El nivel de implicación de su universidad con las comunidades locales, regionales y empresas	○	○	○	○	○	○	○	○

33. Indique del 1 (muy insuficientes) al 7 (muy satisfactorias) su valoración sobre los siguientes aspectos relativos a la adquisición y disponibilidad de recursos financieros de su universidad:

	1	2	3	4	5	6	7	N/C
Capacidad de gestionar con eficiencia los recursos financieros de los que dispone	○	○	○	○	○	○	○	○
Capacidad de gestionar y continuar desarrollando actividades/servicios ordinarios bajo el caso de una reducción en la financiación “ordinaria”	○	○	○	○	○	○	○	○
Posesión de activos que se pueden vender en el caso de estar frente situaciones límites de financiación	○	○	○	○	○	○	○	○
Estabilidad en la captación de los ingresos	○	○	○	○	○	○	○	○

34. Valore del 1 (peor) al 7 (mejor) su universidad comparada con la media de otras universidades públicas españolas con referencia a:

	1	2	3	4	5	6	7	N/C
La capacidad para atraer recursos financieros	○	○	○	○	○	○	○	○
La calidad de las actividades/servicios ofrecidos	○	○	○	○	○	○	○	○
La capacidad de atraer personal cualificado	○	○	○	○	○	○	○	○
La capacidad de lograr sus principales objetivos	○	○	○	○	○	○	○	○
La asociación de nuestra imagen a un particular atributo característico de nuestra institución	○	○	○	○	○	○	○	○

35. Valore del 1 (muy malo) al 7 (muy bueno) el grado en que su universidad ha logrado en los siguientes aspectos:

	1	2	3	4	5	6	7	N/C
Variaciones positivas de los ingresos por financiaciones vinculadas a proyectos/programas específicos con respecto a los de hace 5 años	○	○	○	○	○	○	○	○
Aumento del número de acciones con organismos financiadores públicos y/o privados con respecto a hace 5 años	○	○	○	○	○	○	○	○

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ADVERTENCIA: Si usted ya da por finalizada la encuesta y no desea seguir o modificar ninguna pregunta haga clic en el botón Listo del cuestionario y la encuesta se dará por finalizada automáticamente. Tenga presente que no podrá volver a acceder a ella. Muchas gracias

Annex IV
Cover letter

Estimado/da Dr./Dra. (Faculty) or Sr./Sra. (Adminsitrative Staff and exetrnal memebers) "Name and surname" – "Management position",

En primer lugar permita que me presente, soy M. del Carmen Casablancas Segura, profesora titular de escuela universitaria y actualmente estoy realizando mi tesis doctoral en el departamento de Economía de la Empresa de la Universitat Autònoma de Barcelona, tesis doctoral dirigida por el Dr. Joan Llonch Andreu i la Dra. Maria del Carmen Alarcón-del-Amo.

Dicha tesis, que lleva por título "Strategic Marketing and Stakeholder Orientations in the Spanish Public Universities: an empirical analysis", tiene como objetivo determinar y someter a prueba mediante análisis empírico un modelo conceptual que contempla los principales antecedentes y consecuencias de la orientación a los *stakeholders*, desde sus dos perspectivas, "reactiva" y "pro-activa", en el contexto de las universidades públicas españolas. Además de las contribuciones científicas esperadas, confiamos que esta tesis proporcione evidencias empíricas sobre la orientación de la universidad pública española con respecto a la gestión estratégica, al enfoque del marketing, a la gestión de los *stakeholders* y la gestión de las capacidades dinámicas.

Una parte esencial de la tesis se sustenta en los resultados de una encuesta realizada a las autoridades académicas, cargos de gestión universitarios y representantes sociales con responsabilidad, experiencia y vinculación directa en el proceso de toma de decisiones estratégico de las universidades públicas españolas, abarcando tres categorías distintas, profesorado, personal de administración y servicios y miembros externos.

El cuestionario es anónimo y voluntario, y le llevará alrededor de 20 minutos contestarlo. Soy muy consciente del poco tiempo del que dispone, probablemente acentuado todavía más por el momento actual de crisis y limitaciones presupuestarias, pero le estaría muy agradecida si pudiera atender la presente encuesta. Si desea dar respuesta al cuestionario tienen su acceso a través del siguiente link:

https://www.surveymonkey.com/s.aspx?sm=Z5WdIojm7biqO_2fcidPWQJw_3d_3d

Este vínculo está relacionado con esta encuesta y con su dirección de correo electrónico en forma exclusiva. No reenvíe este mensaje.

Reciba de antemano mi más sincero agradecimiento por su colaboración, atención e inestimable ayuda al desarrollo de la tesis.

En cumplimiento de la Ley Orgánica 15/1999, de 13 de diciembre de Protección de Datos de Carácter Personal (LOPD), como responsable del fichero le informo de las siguientes consideraciones: Los datos quedarán incorporados a un fichero cuya finalidad es la realización de la tesis doctoral. A su vez, si no desea recibir más correos electrónicos enviados, haga clic en elvínculo de abajo y su dirección será automáticamente eliminada de la lista de correo.

https://www.surveymonkey.com/optout.aspx?sm=Z5WdIojm7biqO_2fcidPWQJw_3d_3d

Si le surge alguna duda o desea consultar algún aspecto, no dude en contactar conmigo: M. Del Carmen Casablancas Segura (carme.casablancas@uab.cat)

Annex V
Chi-square goodness of fit test

For a chi-square goodness of fit test, the hypotheses take the following form.

- H_0 (null hypothesis): The data are consistent with a specified distribution.
- H_a(alternative hypothesis): The data are *not* consistent with a specified distribution.

Ni = Observed frequency

Pp = Universe percentages

N = ∑ Ni

Table AV.1 Gender test

- H_0 : The proportion of female and male is 27.5% and 72.5%, respectively.
- H_a: At least one of the proportions in the null hypothesis is false.

Gender	Ni	Pp	N*Pp	Ni-(Ni*Pp)	$(Ni-(Ni*Pp))^2$	$(Ni-(Ni*Pp))^2/N*Pp$
Female	649	27.50%	590.7	58.30	3,398.89	5.75
Male	1,499	72.50%	1557.3	-58.30	3,398.89	2.18
	2,148				χ^2 =	**7.94**

$\chi^2 = 7.937$

degrees of freedom = 1; critical value from chi-square distribution (probability ≤ 0.05) = 3.84

we reject the null hypothesis

Table AV.2 University size test

- H_0 : The proportion of Extra-Large, Large, Medium, and Small is 22.5% , 43.7%, 25.8% and 8.0%, respectively.
- H_a: At least one of the proportions in the null hypothesis is false.

Size	Ni	Pp	N*Pp	Ni-(Ni*Pp)	$(Ni-(Ni*Pp))^2$	(Ni-(Ni*Pp))2/N*Pp
Extra-Large	496	22.50%	488.03	7.98	63.60	0.13
Large	974	43.70%	947.85	25.15	632.37	0.67
Medium	520	25.80%	559.60	-39.60	1,568.32	2.80
Small	180	8.00%	173.52	6.48	41.99	0.24
	2,170	**100.00%**			χ^2 =	**3.842**

$\chi^2 = 3.842$

degrees of freedom = 3; critical value from chi-square distribution (probability ≤ 0.05) = 7.81

we do not reject the null hypothesis

Table AV.3 University Seniority test

- H_0 : The proportion of Senior, Modern, and Young is 40.7% , 31.0%, 25.8% and 23.8%, respectively.
- H_a: At least one of the proportions in the null hypothesis is false.

Seniority	Ni	Pp	N*Pp	Ni-(Ni*Pp)	$(Ni-(Ni*Pp))^2$	(Ni-(Ni*Pp))2/N*Pp
Senior	894	40.70%	882.78	10.22	104.39	0.12
Modern	659	31.00%	672.39	-13.39	179.29	0.27
Young	617	28.30%	613.83	3.17	10.07	0.02
	2,170	**100.00%**			χ^2 =	**0.401**

$\chi^2 = 0.401$

degrees of freedom = 2; critical value from chi-square distribution (probability ≤ 0.05) = 5.99

we do not reject the null hypothesis

Table AV.4 University structure test

- H_0 : The proportion of Faculty, Administrative Staff, and External members is 76.4% , 9.8%, and 13.8%, respectively.
- H_a: At least one of the proportions in the null hypothesis is false

Structure	Ni	Pp	N*Pp	Ni-(Ni*Pp)	$(Ni-(Ni*Pp))^2$	(Ni-(Ni*Pp))2/N*Pp
Faculty	1,738	76.40%	1,641.07	96.93	9,395.04	5.72
Administrative staff	318	9.80%	210.50	107.50	11,555.39	54.89
External members	92	13.80%	296.42	-204.42	41,789.17	140.98
	2,148	**100.00%**			χ^2 =	**201.597**

$\chi^2 = 201.597$

degrees of freedom = 2; critical value from chi-square distribution (probability ≤ 0.05) = 5.99

we reject the null hypothesis

Table AV.5 Knowledge area test

- H_0 : The proportion of Science, Health Science, Social Science, Humanities and Engineering and Architecture is 22.6% , 11.7%, 30.10%, 15.7% and 19.9%, respectively.
- H_a: At least one of the proportions in the null hypothesis is false

Knowledge	Ni	Pp	N*Pp	Ni-(Ni*Pp)	$(Ni-(Ni*Pp))^2$	(Ni-(Ni*Pp))2/N*Pp
Science	417	22.60%	485.45	-68.45	4,685.13	9.65
Health science	254	11.70%	251.32	2.68	7.20	0.03
Social science	721	30.10%	646.55	74.45	5,543.10	8.57
Humanities	369	15.70%	337.24	31.76	1,008.95	2.99
Engineering & arch.	387	19.90%	427.45	-40.45	1,636.36	3.83

Knowledge	Ni	Pp	N*Pp	Ni-(Ni*Pp)	$(Ni-(Ni*Pp))^2$	(Ni-(Ni*Pp))2/N*Pp
	2,148	**100.00%**			χ^2 =	**25.073**

$\chi^2 = 25.073$

degrees of freedom = 4; critical value from chi-square distribution (probability ≤ 0.05) = 9.49

we reject the null hypothesis

Table AV.6 Faculty's knowledge area test

- H_0 : The data are consistent with a specified distribution (See Pp table below).
- H_a: The data are *not* consistent with a specified distribution.

Knowledge	Ni	Pp	N*Pp	Ni-(Ni*Pp)	$(Ni-(Ni*Pp))^2$	(Ni-(Ni*Pp))2/N*Pp
Science	374	22.60%	392.79	-18.79	352.99	0.90
Health Science	230	11.70%	203.35	26.65	710.44	3.49
Social Science	517	30.10%	523.14	-6.14	37.68	0.07
Humanities	282	15.70%	272.87	9.13	83.43	0.31
Engineering & arch.	335	19.90%	345.86	-10.86	117.98	0.34
	1,738	**100.00%**			χ^2 =	**5.110**

$\chi^2 = 5.110$

degrees of freedom = 4; critical value from chi-square distribution (probability ≤ 0.05) = 9.49

we reject the null hypothesis

Table AV.7 Autonomous community test

- H_0 : The data are consistent with a specified distribution (See Pp table below).
- H_a: The data are *not* consistent with a specified distribution.

Communities	Ni	Pp	N*Pp	Ni-(Ni*Pp)	$(Ni-(Ni*Pp))^2$	(Ni-(Ni*Pp))2/N*Pp
Andalucía	381	19.60%	421.01	-40.01	1,600.64	3.80
Aragón	70	2.70%	58.00	12.00	144.10	2.48
Astúrias	38	1.70%	36.52	1.48	2.20	0.06
Cantabria	30	1.70%	36.52	-6.52	42.46	1.16
Cataluña	417	14.30%	307.16	109.84	12,063.95	39.28
Castilla La-Mancha	49	2.10%	45.11	3.89	15.15	0.34
Castilla y León	138	7.90%	169.69	-31.69	1,004.38	5.92
Extremadura	23	1.50%	32.22	-9.22	85.01	2.64
Galicia	155	7.00%	150.36	4.64	21.53	0.14
Islas Baleares	30	1.20%	25.78	4.22	17.84	0.69
Islas Canarias	82	4.20%	90.22	-8.22	67.50	0.75

Communities	Ni	Pp	N*Pp	Ni-(Ni*Pp)	$(Ni-(Ni*Pp))^2$	(Ni-(Ni*Pp))2/N*Pp
Madrid	290	16.50%	354.42	-64.42	4,149.94	11.71
Murcia	79	3.30%	70.88	8.12	65.87	0.93
Navarra	18	1.10%	23.63	-5.63	31.67	1.34
País Vasco	81	3.10%	66.59	14.41	207.71	3.12
Rioja	20	0.90%	19.33	0.67	0.45	0.02
Valencia	247	11.20%	240.58	6.42	41.27	0.17
	2,148	**100.00%**			$\chi^2 =$	**74.554**

$\chi^2 = 74.554$

degrees of freedom = 16; critical value from chi-square distribution (probability ≤ 0.05) = 26.30

we reject the null hypothesis

Table AV.8 University test

- H_0 : The data are consistent with a specified distribution (See Pp table below).
- H_a: The data are *not* consistent with a specified distribution

University	Ni	Pp	N*Pp	Ni-(Ni*Pp)	$(Ni-(Ni*Pp))^2$	(Ni-(Ni*Pp))2/N*Pp
EHU	81	0.031	67,24	13,76	189,37	2.82
UA	65	0.023	49,89	15,11	228,40	4.58
UAB	78	0.026	56,39	21,61	466,82	8.28
UAH	33	0.014	30,37	2,63	6,94	0.23
UAL	13	0.009	19,52	-6,52	42,52	2.18
UAM	56	0.027	58,56	-2,56	6,57	0.11
UB	105	0.036	78,08	26,92	724,47	9.28
UBU	24	0.014	30,37	-6,37	40,53	1.33
UC3M	36	0.016	34,70	1,30	1,68	0.05
UCA	27	0.020	43,38	-16,38	268,30	6.18
UCLM	48	0.021	45,55	2,45	6,01	0.13
UCM	78	0.049	106,28	-28,28	799,81	7.53
UCO	29	0.017	36,87	-7,87	61,98	1.68
UDC	39	0.020	43,38	-4,38	19,18	0.44
UdG	32	0.015	32,54	-0,54	0,29	0.01
UDL	35	0.013	28,20	6,80	46,28	1.64
UGR	82	0.038	82,42	-0,42	0,18	0.00
UHU	30	0.016	34,70	-4,70	22,13	0.64
UIB	30	0.012	26,03	3,97	15,78	0.61
UJAE	44	0.019	41,21	2,79	7,78	0.19
UJI	24	0.013	28,20	-4,20	17,61	0.62
ULL	45	0.025	54,23	-9,23	85,10	1.57
ULPGC	37	0.017	36,87	0,13	0,02	0.00
UM	56	0.022	47,72	8,28	68,59	1.44
UMA	49	0.023	49,89	-0,89	0,79	0.02
UMH	28	0.016	34,70	-6,70	44,94	1.30
UNAV	17	0.011	23,86	-6,86	47,05	1.97
UNEX	22	0.014	30,37	-8,37	69,99	2.30
UNIA	9	0.003	6,51	2,49	6,22	0.96
UNIC	32	0.017	36,87	-4,87	23,75	0.64
UNIL	25	0.017	36,87	-11,87	140,97	3.82
UNIO	38	0.017	36,87	1,13	1,27	0.03

University	Ni	Pp	N*Pp	Ni-(Ni*Pp)	$(Ni-(Ni*Pp))^2$	(Ni-(Ni*Pp))2/N*Pp
UNIR	20	0.009	19,52	0,48	0,23	0.01
UNIZ	69	0.027	58,56	10,44	108,93	1.86
UPC	75	0.023	49,89	25,11	630,66	12.64
UPCT	26	0.011	23,86	2,14	4,58	0.19
UPF	43	0.013	28,20	14,80	219,13	7.77
UPM	63	0.041	88,93	-25,93	672,31	7.56
UPO	23	0.012	26,03	-3,03	9,17	0.35
UPV	62	0.029	62,90	-0,90	0,81	0.01
URJC	31	0.017	36,87	-5,87	34,49	0.94
URV	52	0.017	36,87	15,13	228,83	6.21
US	77	0.039	84,59	-7,59	57,62	0.68
USAL	34	0.023	49,89	-15,89	252,40	5.06
USC	66	0.029	62,90	3,10	9,60	0.15
UV	73	0.032	69,41	3,59	12,90	0.19
UVA	56	0.026	56,39	-0,39	0,16	0.00
UVIG	52	0.020	43,38	8,62	74,30	1.71
	2,169	**100.00%**			$\chi^2=$	**107.918**

$\chi^2 = 107.918$

degrees of freedom = 47; critical value from chi-square distribution (probability ≤ 0.05) = 67.5

we reject the null hypothesis

Table AV.9 Management positions test

- H_0 : The data are consistent with a specified distribution (See Pp table below).
- H_a: The data are *not* consistent with a specified distribution.

Positions	Ni	Pp	N*Pp	Ni-(Ni*Pp)	$(Ni-(Ni*Pp))^2$	(Ni-(Ni*Pp))2/N*Pp
Department director	855	33.60%	708.62	146.38	21,425.93	30.24
Dean	262	9,62%	202.89	59.11	3,494.49	17.22
Area director	203	6,23%	131.39	71.61	5,127.89	39.03
Deputy of rector	174	7.95%	167.67	6.33	40.13	0.24
Vice-rector	135	5,6%	118.10	16.90	285.47	2.42
Chair director	117	7.55%	159.23	-42.23	1,783.33	11.20
Institute director	96	9.79%	206.47	-110.47	12,203.86	59.11
Managing director	59	2.61%	55.04	3.96	15.64	0.28
Vice-manager	41	1.14%	24.04	16.96	287.55	11.96
External counsellors	38	9.34%	196.98	-158.98	25,274.83	128.31
Manager	27	6.70%	14.13	12.87	165.63	11.72
Other faculty	20	1.12%	23.62	-3.62	13.11	0.56
Secretary soc. coun	20	6.20%	13.08	6.92	47.94	3.67
Ombudsman	17	6.30%	13.29	3.71	13.79	1.04
Other staff administration	14	9.10%	19.19	-5.19	26.96	1.40
Secretary-general	11	6.70%	14.13	-3.13	9.80	0.69

Positions	Ni	Pp	N*Pp	Ni-(Ni*Pp)	(Ni-(Ni*Pp))^2	(Ni-(Ni*Pp))2/N*Pp
Rector	7	6.70%	14.13	-7.13	50.84	3.60
President soc. coun.	5	6.60%	13.92	-8.92	79.56	5.72
Other external members	4	4.30%	9.07	-5.07	25.69	2.83
Vice-president social council	4	1.80%	3.80	0.20	0.04	0.01
	2,109	**100.00%**			χ^2 =	**331.243**

$\chi^2 = 331.243$

degrees of freedom = 19; critical value from chi-square distribution (probability ≤ 0.05) = 30.14

we reject the null hypothesis

Table AV.10 Faculty's managerial positions test

- H_0 : The data are consistent with a specified distribution (See Pp table below).
- H_a: The data are *not* consistent with a specified distribution.

Faculty	Ni	Pp	N*Pp	Ni-(Ni*Pp)	(Ni-(Ni*Pp))^2	(Ni-(Ni*Pp))2/N*Pp
Other faculty	20	1.40%	24.04	-4.04	16.31	0.68
Rector	8	0.90%	15.45	-7.45	55.55	3.59
Vice-rector	135	7.20%	123.62	11.38	129.41	1.05
Secretary general	11	0.90%	15.45	-4.45	19.83	1.28
Deputy of the rector	175	10.40%	178.57	-3.57	12.73	0.07
Ombudsman	17	0.80%	13.74	3.26	10.65	0.78
Dean	262	12.40%	212.91	49.09	2,410.02	11.32
Institute director	96	12.60%	216.34	-120.34	14,482.20	66.94
Department head	855	43.40%	745.18	109.82	12,060.87	16.19
Managing director	21	0.30%	5.15	15.85	251.19	48.77
Chair director	117	9.70%	166.55	-49.55	2,455.10	14.74
Total	**1,717**	**100.00%**			χ^2 =	**165.402**

$\chi^2 = 165.402$

degrees of freedom = 10; critical value from chi-square distribution (probability ≤ 0.05) = 18.31

we reject the null hypothesis

Table AV.11 Administration staff's manager positions test

- H_0 : The data are consistent with a specified distribution (See Pp table below).
- H_a: The data are *not* consistent with a specified distribution.

Administration	Ni	Pp	N*Pp	Ni-(Ni*Pp)	(Ni-(Ni*Pp))^2	(Ni-(Ni*Pp))2/N*Pp
Manager	27	6.70%	20.03	6.97	48.54	2.42

Vice-manager	40	11.30%	33.79	6.21	38.60	1.14
Area director	204	62.20%	185.98	18.02	324.79	1.75
Managing director	11	10.70%	31.99	-20.99	440.71	13.78
Other administration	17	9.10%	27.21	-10.21	104.22	3.83
Total	**299**	**100.00%**			χ^2 =	**22.917**

$\chi^2 = 22.917$

degrees of freedom = 4; critical value from chi-square distribution (probability ≤ 0.05) = 9.49

we reject the null hypothesis

Table AV.12 External members' managerial positions test

- H_0 : The data are consistent with a specified distribution (See Pp table below).
- H_a: The data are *not* consistent with a specified distribution.

External members	Ni	Pp	N*Pp	Ni-(Ni*Pp)	(Ni-(Ni*Pp))^2	(Ni-(Ni*Pp))2/N*Pp
President social council	4	5.30%	5.25	-1.25	1.56	0.30
Vice-president social council	4	1,50%	1.49	2.52	6.33	4.26
Secretary social council	20	4.80%	4.75	15.25	232.50	48.93
External counsellors	37	74.40%	73.66	-36.66	1,343.66	18.24
Managing director	27	10.50%	10.40	16.61	275.73	26.52
Other external members	7	3.50%	3.47	3.54	12.50	3.61
Total	**99**	**100.00%**			χ^2 =	**101.857**

$\chi^2 = 101.857$

degrees of freedom = 5; critical value from chi-square distribution (probability ≤ 0.05) = 11.07

we reject the null hypothesis

Table AV.13 Faculty category test

- H_0 : The data are consistent with a specified distribution (See Pp table below).
- H_a: The data are *not* consistent with a specified distribution.

Category	Ni	Pp	N*Pp	Ni-(Ni*Pp)	(Ni-(Ni*Pp))^2	(Ni-(Ni*Pp))2/N*Pp
CU	619	40.31%	692.58	-73.58	5,414.36	7.82
TU	860	48.77%	837.83	22.17	491.65	0.59
Professor emeritus	5	0.12%	1.98	3.02	9.13	4.61
CEU	43	2.65%	45.51	-2.51	6.31	0.14
TEU	48	3.39%	58.18	-10.18	103.57	1.78
Faculty non-tenured *	81	3.16%	54.22	26.78	717.21	13.23
Other non-tenured **	62	1.61%	27.70	34.30	1,176.26	42.46
Total	**1,718**	**100.00%**			χ^2 =	**70.623**

* *Catedrático*, Associate Doctor; ** Assistant, *Profesor Colaborador*, Associate

$\chi^2 = 70.623$

degrees of freedom = 6; critical value from chi-square distribution (probability ≤ 0.05) = 12.59

we reject the null hypothesis

Table AV.14 Main managerial structures test

- H_0 : The proportion of governing team, managerial team, deans, and Heads of departments is 50.8% , 12.2%, 14.5%, and 59.8%, respectively.
- H_a: At least one of the proportions in the null hypothesis is false.

Managerial	Ni	Pp	N*Pp	Ni-(Ni*Pp)	(Ni-(Ni*Pp))^2	(Ni-(Ni*Pp))2/N*Pp
Governing team	328	22.50%	386.10	-58.10	3,375.61	8.74
Managerial team	271	12.20%	209.35	61.65	3,800.48	18.15
Dean	262	14.50%	248.82	13.18	173.71	0.70
Department head	855	50.80%	871.73	-16.73	279.83	0.32
Total	**1,716**	**100.00%**			χ^2 =	**2.916**

$\chi^2 = 27.916$

degrees of freedom = 3: critical value from chi-square distribution (probability ≤ 0.05) = 7.81

we reject the null hypothesis

Table AV.15 Ranking positions test

- H_0 : The proportion of first quartile, second quartile, third quartile, and fourth quartile is 35.2% , 29.0%, 20.9%, and 14.9%, respectively.
- H_a: At least one of the proportions in the null hypothesis is false.

Ranking	Ni	Pp	N*Pp	Ni-(Ni*Pp)	(Ni-(Ni*Pp))^2	(Ni-(Ni*Pp))2/N*Pp
First quartile	854	35.20%	760.67	93.33	8,710.12	11.45
Second quartile	629	29.00%	626.69	2.31	5.34	0.01
Third quartile	400	20.90%	451.65	-51.65	2,667.62	5.91
Fourth quartile	278	14.90%	321.99	-43.99	1,935.03	6.01
Total	**2,161**	**100.00%**			χ^2 =	**23.375**

$\chi^2 = 23.375$

degrees of freedom = 3; critical value from chi-square distribution (probability ≤ 0.05) = 7.81

we reject the null hypothesis

Table AV.16 Faculty gender test

- H_0 : The proportion of female and male is 38.8% and 61.2%, respectively.
- H_a: At least one of the proportions in the null hypothesis is false.

Faculty gender	Ni	Pp	N*Pp	Ni-(Ni*Pp)	$(Ni-(Ni*Pp))^2$	(Ni-(Ni*Pp))2/N*Pp
Female	482	38.80%	674.34	-192.34	36,996.21	54.86
Male	1,256	61.20%	1,063.66	192.34	36,996.21	34.78
Total	**1,738**	**100.00%**			$\chi^2 =$	**89.645**

$\chi^2 = 89.645$

degrees of freedom = 1; critical value from chi-square distribution (probability ≤ 0.05) = 3.84

we reject the null hypothesis

Table AV.17 Administrative staff gender test

- H_0 : The proportion of female and male is 59.8% and 40.2%, respectively.
- H_a: At least one of the proportions in the null hypothesis is false.

Administrative	Ni	Pp	N*Pp	Ni-(Ni*Pp)	$(Ni-(Ni*Pp))^2$	(Ni-(Ni*Pp))2/N*Pp
Female	147	59.80%	190.16	-43.16	1,863.13	9.80
Male	171	40.20%	127.84	43.16	1,863.13	14.57
Total	**318**				$\chi^2 =$	**24.372**

$\chi^2 = 24.372$

degrees of freedom = 1; critical value from chi-square distribution (probability ≤ 0.05) = 3.84

we reject the null hypothesis

Annex VI
Sample data characteristics

Figure AVI.1 Period of faculty's management

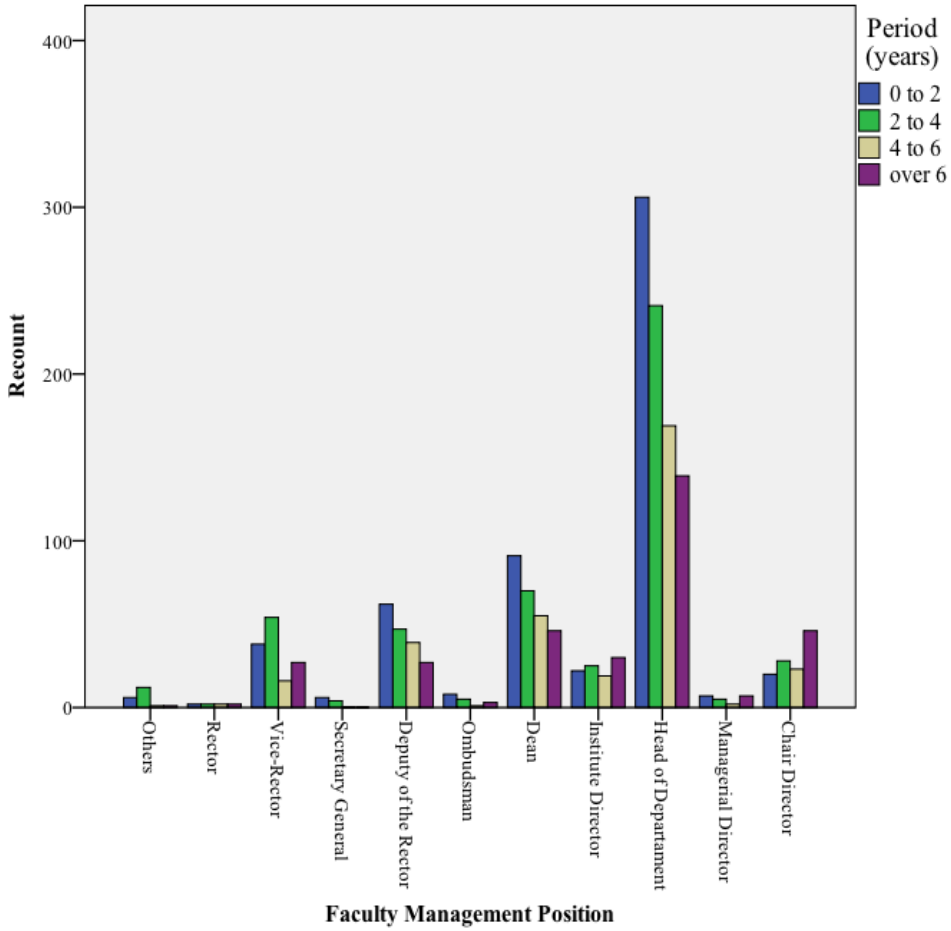


Figure AVI.2 Period of administrative staff's management

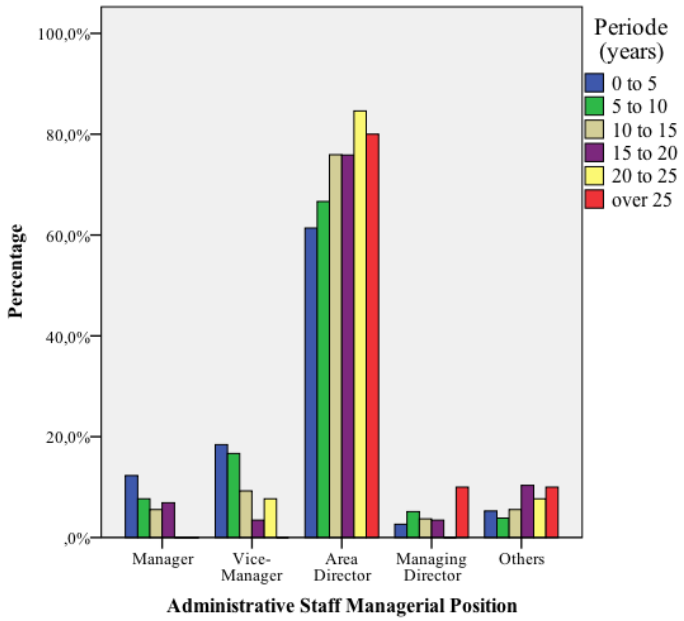
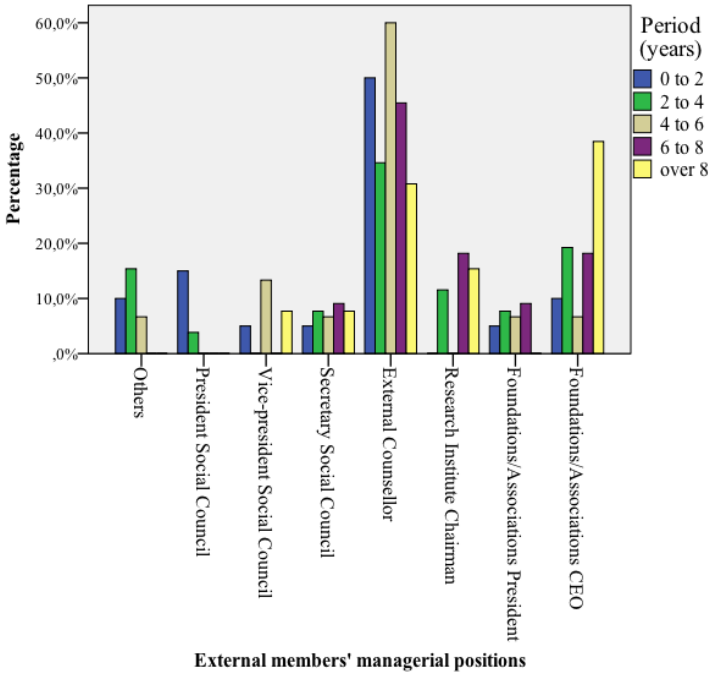


Figure AVI.3 Period of External members' management position



Annex VII
Crosstabs

Table AVII.1 Crosstabs gender and university structure

			University structure			Total
			Faculty	Administrative staff	External members	
Gender	Female	Count	482a	147b	20a	649
		Expected Count	525	96	28	649
		% within gender	74.3%	22.7%	3.1%	100.0%
		% within structure	27.7%	46.2%	21.7%	30.2%
		% of total	22.4%	6.8%	0.9%	30.2%
	Male	Recount	1,256a	171b	72a	1,499
		Expected Count	1,213	222	64	1,499
		% within gender	83.8%	11.4%	4.8%	100.0%
		% within structure	72.3%	53.8%	78.3%	69.8%
		% of total	58.5%	8.0%	3.4%	69.8%
Total		Count	1,738	318	92	2,148
		Expected Count	1,738	318	92	2,148
		% within gender	80.9%	14.8%	4.3%	100.0%
		% within structure	100.0%	100.0%	100.0%	100.0%
		% of total	80.9%	14.8%	4.3%	100.0%

Each subscript letter denotes a subset of University Structure categories whose column proportions do not differ significantly from each other at the 0.5 level.

Pearson Chi-square value = 46.876 (d.f.2) p=0.000

Table AVII.2 Crosstabs gender and knowledge area

			Knowledge area					Total
			Health science	Science	Engineering &arch.	Social science	Humanities	
Gender	Female	Count	92a	95b	48c	268a	146a	649
		Expected Count	76.7	126.0	116.9	217.8	111.5	649.0
		% within gender	14.2%	14.6%	7.4%	41.3%	22.5%	100.0%
		% within know.	36.2%	22.8%	12.4%	37.2%	39.6%	30.2%
		% of total	4.3%	4.4%	2.2%	12.5%	6.8%	30.2%
	Male	Count	162a	322b	339c	453a	223a	1.499
		Expected Count	177.3	291.0	270.1	503.2	257.5	1.499
		% within gender	10.8%	21.5%	22.6%	30.2%	14.9%	100.0%
		% within know.	63.8%	77.2%	87.6%	62.8%	60.4%	69.8%
		% of total	7.5%	15.0%	15.8%	21.1%	10.4%	69.8%
Total		Count	254	417	387	721	369	2,148
		Expected Count	254	417	387	721	369	2,148
		% within gender	11.8%	19.4%	18.0%	33.6%	17.2%	100.0%
		% within know.	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
		% of total	11.8%	19.4%	18.0%	33.6%	17.2%	100.0%

Each subscript letter denotes a subset of Knowledge Area categories whose column proportions do not differ significantly from each other at the 0.5 level.

Pearson Chi-square value = 105.350 (d.f.4) p=0.000

Table AVII.3 Crosstabs gender and governance structures

			Governance structures					
			DD	DE	GT	MT	Others	Total
Gender	Female	Count	224a	76a,b	127c	115b	91a	633
		Expected Count	256.5	78.6	81.3	98.7	117.9	633.0
		% within gender	35.4%	12.0%	20.1%	18.2%	14.4%	100.0%
		% within structures	26.2%	29.0%	46.9%	35.0%	23.2%	30.0%
		% of total	10.6%	3.6%	6.0%	5.5%	4.3%	30.0%
	Male	Count	631a	186a,b	144c	214b	302a	1,477
		Expected Count	598.5	183.4	189.7	230.3	275.1	1,477
		% within gender	42.7%	12.6%	9.7%	14.5%	20.4%	100.0%
		% within structures	73.8%	71.0%	53.1%	65.0%	76.8%	70.0%
		% of total	29.9%	8.8%	6.8%	10.1%	14.3%	70.0%
Total		Count	855	262	271	329	393	2.110
		Expected Count	855	262	271	329	393	2.110
		% within gender	40.5%	12.4%	12.8%	15.6%	18.6%	100.0%
		% within structures	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
		% of total	40.5%	12.4%	12.8%	15.6%	18.6%	100.0%

Each subscript letter denotes a subset of Knowledge Area categories whose column proportions do not differ significantly from each other at the 0.5 level.

Departments (DD); Deans (DE); Governing teams (GT); Managing teams (MT)

Pearson Chi-square value = 55.317 (d.f.4) p=0.000

Table AVII.4 Crosstabs gender and age

			Age (years)					
			x ≤ 29	30 ≤ x ≤ 39	40 ≤ x ≤ 49	50 ≤ x ≤ 59	x ≥ 60	Total
Gender	Female	Count	4a,b	44b	241a	284a	59c	632
		Expected Count	2.1	27.7	223.0	275.1	104.1	632.0
		% within gender	.6%	7.0%	38.1%	44.9%	9.3%	100.0%
		% within age	57.1%	47.8%	32.5%	31.1%	17.1%	30.1%
		% of total	.2%	2.1%	11.5%	13.5%	2.8%	30.1%
	Male	Count	3a,b	48b	500a	630a	287c	1,468
		Expected Count	4.9	64.3	518.0	638.9	241.9	1,468
		% within gender	.2%	3.3%	34.1%	42.9%	19.6%	100.0%
		% within age	42.9%	52.2%	67.5%	68.9%	82.9%	69.9%
		% of total	.1%	2.3%	23.8%	30.0%	13.7%	69.9%
Total		Count	7	92	741	914	346	2,100
		Expected Count	7	92	741	914	346	2,100
		% within gender	.3%	4.4%	35.3%	43.5%	16.5%	100.0%
		% within age	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
		% of total	.3%	4.4%	35.3%	43.5%	16.5%	100.0%

Each subscript letter denotes a subset of Knowledge Area categories whose column proportions do not differ significantly from each other at the 0.5 level.

Pearson Chi-square value = 46.654a (d.f.4) p=0.000

a 2 cells (20.00%) have expected count less than 5. The minimum expected count is 2.11.

Table AVII.5 Crosstabs gender and structure of the university

			Structure of the university			Total
			Faculty	Administrative staff	External members	
Age (years)	x ≤ 29	Count	3a	1a	3b	7
		Expected Count	5.7	1.0	.3	7.0
		% within age	42.9%	14.3%	42.9%	100.0%
		% within structure	.2%	.3%	3.4%	0.30%
		% of total	.1%	.0%	.1%	.3%
	30 ≤ x ≤ 39	Count	67a	20b	5a,b	92
		Expected Count	74.9	13.3	3.8	92.0
		% within age	72.8%	21.7%	5.4%	100.0%
		% within structure	3.9%	6.6%	5.7%	4.4%
		% of total	3.2%	1.0%	.2%	4.4%
	40 ≤ x ≤ 49	Count	586a	131b	24a	741
		Expected Count	603.0	107.3	30.7	741.0
		% within age	79.1%	17.7%	3.2%	100.0%
		% within structure	34.3%	43.1%	27.6%	35.3%
		% of total	27.9%	6.2%	1.1%	35.3%
	50 ≤ x ≤ 59	Count	757a	124a	33a	914
		Expected Count	743.8	132.3	37.9	914.0
		% within age	82.8%	13.6%	3.6%	100.0%
		% within structure	44.3%	40.8%	37.9%	43.5%
		% of total	36.0%	5.9%	1.6%	43.5%
	x ≥ 60	Count	296a	28b	22a	346
		Expected Count	281.6	50.1	14.3	346.0
		% within age	85.5%	8.1%	6.4%	100.0%
		% within structure	17.3%	9.2%	25.3%	16.5%
		% of total	14.1%	1.3%	1.0%	16.5%
Total		Count	1,709	304	87	2,100
		Expected Count	1,709	304	87	2,100
		% within age	81.4%	14.5%	4.1%	100.0%
		% within structure	100.0%	100.0%	100.0%	100.0%
		% of total	81.4%	14.5%	4.1%	100.0%

Each subscript letter denotes a subset of Knowledge Area categories whose column proportions do not differ significantly from each other at the 0.5 level.

Pearson Chi-square value = 54.304a (d.f.8) p=0.000

a 3 cells (20.00%) have expected count less than 5. The minimum expected count is .29.

Table AVII.6 Crosstabs gender and university size

			University size				
			Extra-Large	Large	Medium	Small	Total
Age(years)	x ≤ 29	Count	2a	2a	2a	1a	7
		Expected Count	3.1	1.7	1.6	.6	7.0
		% within age	28.6%	28.6%	28.6%	14.3%	100.0%
		% within size	.2%	.4%	.4%	.6%	.3%
		% of total	.1%	.1%	.1%	.0%	.3%
	30 ≤ x ≤ 39	Count	42a,b	25a,b	13b	12a	92
		Expected Count	41.3	22.1	21.0	7.7	92.0
		% within age	45.7%	27.2%	14.1%	13.0%	100.0%
		% within size	4.5%	5.0%	2.7%	6.9%	4.4%
		% of total	2.0%	1.2%	.6%	.6%	4.4%
	40 ≤ x ≤ 49	Count	321a	203b	138c	79b	741
		Expected Count	332.4	177.8	169.0	61.8	741.0
		% within age	43.3%	27.4%	18.6%	10.7%	100.0%
		% within size	34.1%	40.3%	28.8%	45.1%	35.3%
		% of total	15.3%	9.7%	6.6%	3.8%	35.3%
	50 ≤ x ≤ 59	Count	408a,b	213a,b	226b	67a	914
		Expected Count	410.0	219.4	208.5	76.2	914.0
		% within age	44.6%	23.3%	24.7%	7.3%	100.0%
		% within size	43.3%	42.3%	47.2%	38.3%	43.5%
		% of total	19.4%	10.1%	10.8%	3.2%	43.5%
	x ≥ 60	Count	169a	61b	100a	16b	346
		Expected Count	155.2	83.0	78.9	28.8	346.0
		% within age	48.8%	17.6%	28.9%	4.6%	100.0%
		% within size	17.9%	12.1%	20.9%	9.1%	16.5%
		% of total	8.0%	2.9%	4.8%	.8%	16.5%
Total		Count	942	504	479	175	2,100
		Expected Count	942	504	479	175	2,100
		% within age	44.9%	24.0%	22.8%	8.3%	100.0%
		% within size	100.0%	100.0%	100.0%	100.0%	100.0%
		% of total	44.9%	24.0%	22.8%	8.3%	100.00%

Each subscript letter denotes a subset of Knowledge Area categories whose column proportions do not differ significantly from each other at the 0.5 level.

Pearson Chi-square value = 42.410a (d.f.12) p=0.000

a 4 cells (20.00%) have expected count less than 5. The minimum expected count is .58.

Table AVII.7 Crosstabs age and seniority of the university

			Seniority of the university			
			Senior	Modern	Young	Total
Age (years)	x ≤ 29	Count	2a	1a	4a	7
		Expected Count	2.9	2.1	2.0	7.0
		% within age	28.6%	14.3%	57.1%	100.0%
		% within seniority	.2%	.2%	.7%	.3%
		% of total	.1%	.0%	.2%	.3%
	30 ≤ x ≤ 39	Count	32a	28a	32a	92
		Expected Count	37.9	27.9	26.2	92.0
		% within age	34.8%	30.4%	34.8%	100.0%
		% within seniority	3.7%	4.4%	5.4%	4.4%
		% of total	1.5%	1.3%	1.5%	4.4%
	40 ≤ x ≤ 49	Count	255a	218a	268b	741
		Expected Count	305.2	224.8	211.0	741.0
		% within age	34.4%	29.4%	36.2%	100.0%
		% within seniority	29.5%	34.2%	44.8%	35.3%
		% of total	12.1%	10.4%	12.8%	35.3%
	50 ≤ x ≤ 59	Count	412a	270b	232b	914
		Expected Count	376.5	277.2	260.3	914.0
		% within age	45.1%	29.5%	25.4%	100.0%
		% within seniority	47.6%	42.4%	38.8%	43.5%
		% of total	19.6%	12.9%	11.0%	43.5%
	x ≥ 60	Count	164a	120a	62b	346
		Expected Count	142.5	105.0	98.5	346.0
		% within age	47.4%	34.7%	17.9%	100.0%
		% within seniority	19.0%	18.8%	10.4%	16.5%
		% del total	7.8%	5.7%	3.0%	16.5%
Total		Count	865	637	598	2,100
		Expected Count	865	637	598	2,100
		% within age	41.2%	30.3%	28.5%	100.0%
		% within seniority	100.0%	100.0%	100.0%	100.0%
		% of total	41.2%	30.3%	28.5%	100.0%

Each subscript letter denotes a subset of Knowledge Area categories whose column proportions do not differ significantly from each other at the 0.5 level.

Pearson Chi-square value = 54.496a (d.f.18) p=0.000

a 3 cells (20.00%) have expected count less than 5. The minimum expected count is 1.99.

Table AVII.8 Crosstabs endogamy and university structures

			University structures			Total
			Faculty	Administrative staff	External members	
Endogamy	Yes	Count	1.264a	161b	41b	1,466
		Expected Count	1.192	216	58	1,466
		% within endogamy	86.2%	11.0%	2.8%	100.0%
		% within structures	73.9%	51.9%	49.4%	69.7%
		% of total	60.1%	7.7%	1.9%	69.7%
	No	Count	447a	149b	42b	638
		Expected Count	518.8	94.0	25.2	638.0
		% within endogamy	70.1%	23.4%	6.6%	100.0%
		% within structures	26.1%	48.1%	50.6%	30.3%
		% of total	21.2%	7.1%	2.0%	30.3%
Total		Count	1,711	310	83	2,104
		Expected Count	1,711	310	83	2,104
		% within endogamy	81.3%	14.7%	3.9%	100.0%
		% within structures	100.0%	100.0%	100.0%	100.0%
		% of total	81.3%	14.7%	3.9%	100.0%

Each subscript letter denotes a subset of University Structure categories whose column proportions do not differ significantly from each other at the 0.5 level.

Pearson Chi-square value = 76.610 (d.f.2) p=0.000

Table AVII.9 Crosstabs endogamy and knowledge area

			Knowledge Area					Total
			Health science	Science	Engineering architecture	Social science	Humanities	
Endogamy	Yes	Count	193a	266b	279a,c	488b,c	240b	1,466
		Expected Count	172.8	283.6	263.4	494.0	252.2	1,466
		% within endogamy	13.2%	18.1%	19.0%	33.3%	16.4%	100.0%
		% within know.	77.8%	65.4%	73.8%	68.8%	66.3%	69.7%
		% of total	9.2%	12.6%	13.3%	23.2%	11.4%	69.7%
	No	Count	55a	141b	99a,c	221b,c	122b	638
		Expected Count	75.2	123.4	114.6	215.0	109.8	638.0
		% within endogamy	8.6%	22.1%	15.5%	34.6%	19.1%	100.0%
		% within know.	22.2%	34.6%	26.2%	31.2%	33.7%	30.3%
		% of total	2.6%	6.7%	4.7%	10.5%	5.8%	30.3%
Total		Count	248	407	378	709	362	2,104
		Expected Count	248	407	378	709	362	2,104
		% within endogamy	11.8%	19.3%	18.0%	33.7%	17.2%	100.0%
		% within know.	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
		% of total	11.8%	19.3%	18.0%	33.7%	17.2%	100.0%

Each subscript letter denotes a subset of University Structure categories whose column proportions do not differ significantly from each other at the 0.5 level.

Pearson Chi-square value = 16.637 (d.f.4) p=0.000

Table AVII.10 Crosstabs endogamy and faculty's knowledge area

			Faculty's knowledge area					Total
			Health science	Science	Engineering architecture	Social science	Humanities	
Endogamy	Yes	Count	184a	243b	258a	386a,c	193b,c	1,264
		Expected Count	167.7	271.1	243.8	376.8	204.6	1,264
		% within endog.	14.6%	19.2%	20.4%	30.5%	15.3%	100.0%
		% within faculty	81.1%	66.2%	78.2%	75.7%	69.7%	73.9%
		% of total	10.8%	14.2%	15.1%	22.6%	11.3%	73.9%
	No	Count	43a	124b	72a	12a,.c	84b,c	447
		Expected Count	59.3	95.9	86.2	133.2	72.4	447.0
		% within endog.	9.6%	27.7%	16.1%	27.7%	18.8%	100.0%
		% within faculty	18.9%	33.8%	21.8%	24.3%	30.3%	26.1%
		% of total	2.5%	7.2%	4.2%	7.2%	4.9%	26.1%
Total		Count	227	367	330	510	277	1,711
		Expected Count	227	367	330	510	277	1,711
		% within endog.	13.3%	21.4%	19.3%	29.8%	16.2%	100.0%
		% within faculty	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
		% of total	13.3%	21.4%	19.3%	29.8%	16.2%	100.0%

Each subscript letter denotes a subset of University Structure categories whose column proportions do not differ significantly from each other at the 0.5 level.

Pearson Chi-square value = 23.802 (d.f.4) p=0.000

Table AVII.11 Crosstabs endogamy and autonomous communities

			Autonomous Community																
			AND	ARA	CLM	CYL	CAT	VAL	MAD	EXT	GAL	MUR	AST	NAV	ISC	PVA	CAN	RIO	ISB	Total
Endogamy	Yes	Count	255a	61b	20c,d	104be.fg	246h	187e,f,g,i,j	195a	17abefgh.j	109a,g,j	51a,h,i,	32b,f,	12adeghij	64abefgij	67b,e,f	20aeghij	5c	21aefghij	1,466
		Expected Count	259.9	48.1	33.4	91.3	285.7	168.6	200.0	15.3	105.9	53.0	25.1	12.5	57.1	55.7	20.2	13.2	20.9	1,466
		% within endogamy	17.4%	4.2%	1.4%	7.1%	16.8%	12.8%	13.3%	1.2%	7.4%	3.5%	2.2%	.8%	4.4%	4.6%	1.4%	.3%	1.4%	100.0%
		% within commun.	68.4%	88.4%	41.7%	79.4%	60.0%	77.3%	67.9%	77.3%	71.7%	67.1%	88.9%	66.7%	78.0%	83.8%	69.0%	26.3%	70.0%	69.7%
		% of total	12.1%	2.9%	1.0%	4.9%	11.7%	8.9%	9.3%	.8%	5.2%	2.4%	1.5%	.6%	3.0%	3.2%	1.0%	.2%	1.0%	69.7%
	No	Count	118a	8b	28c,d	27b, e,f,g	164h	55efg.j	92a	5abfghij	43a,g,j	25a,h,,j	4b,f	6adeghij	18abefgij	13b,e,f	9aeghij	14c	9aefghij	638
		Expected Count	113.1	20.9	14.6	39.7	124.3	73.4	87.0	6.7	46.1	23.0	10.9	5.5	24.9	24.3	8.8	5.8	9.1	638.0
		% within endogamy	18.5%	1.3%	4.4%	4.2%	25.7%	8.6%	14.4%	.8%	6.7%	3.9%	.6%	.9%	2.8%	2.0%	1.4%	2.2%	1.4%	100.0%
		% within commun.	31.6%	11.6%	58.3%	20.6%	40.0%	22.7%	32.1%	22.7%	28.3%	32.9%	11.1%	33.3%	22.0%	16.3%	31.0%	73.7%	30.0%	30.3%
		% of total	5.6%	.4%	1.3%	1.3%	7.8%	2.6%	4.4%	.2%	2.0%	1.2%	.2%	.3%	.9%	.6%	.4%	.7%	.4%	30.3%
Total		Count	373	69	48	131	410	242	287	22	152	76	36	18	82	80	29	19	30	2,104
		Expected Count	373	69	48	131	410	242	287	22	152	76	36	18	82	80	29	19	30	2,104
		% within endogamy	17.7%	3.3%	2.3%	6.2%	19.5%	11.5%	13.6%	1.0%	7.2%	3.6%	1.7%	.9%	3.9%	3.8%	1.4%	.9%	1.4%	100.0%
		% within commun.	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
		% of total	17.7%	3.3%	2.3%	6.2%	19.5%	11.5%	13.6%	1.0%	7.2%	3.6%	1.7%	.9%	3.9%	3.8%	1.4%	.9%	1.4%	100.0%

Each subscript letter denotes a subset of University Structure categories whose column proportions do not differ significantly from each other at the 0.5 level

Pearson Chi-square value = 95.258 (d.f.16) p=0.000

Figure AVII.1 Endogamy and autonomous communities

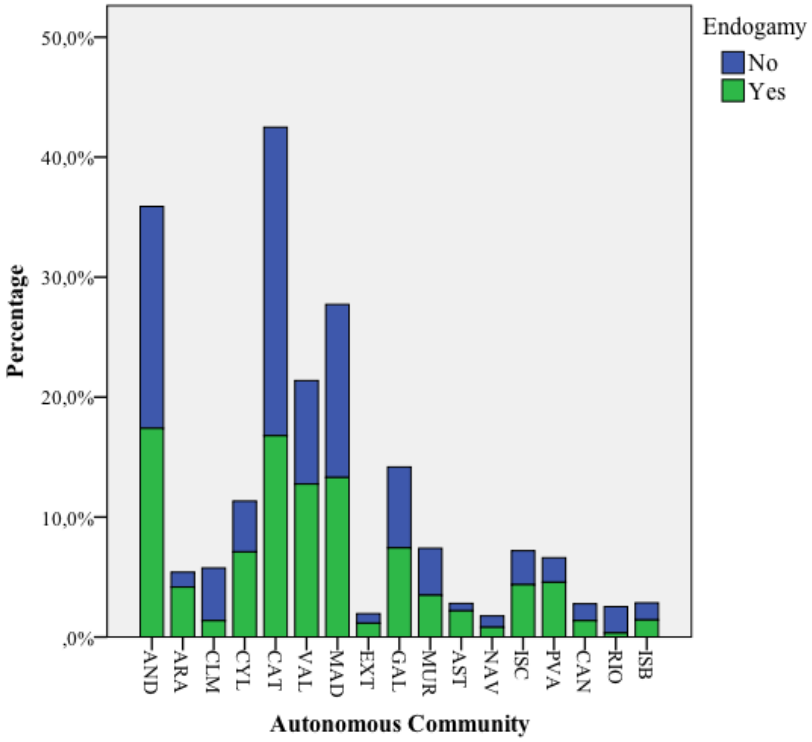


Table AVII.12 Crosstabs endogamy and university

			University																						
			UA	UAL	UAH	UAB	UAM	UB	UBU	UCA	UNICA	UC3M	UCLM	UCM	UDC	UCO	UNEX	UdG	UGR	UHU	UIB	UNIA	UJAEN	UJI	ULL	UNIRI
Endogamy	No	Count	19	7	16	19	15	21	13	5	9	22	28	4	15	9	5	19	8	13	9	9	27	9	4	14
		Expected Count	19.7	3.6	10.0	22.4	16.7	30.9	6.7	8.2	8.8	10.6	14.3	22.7	11.8	8.8	6.4	9.4	23.3	8.5	9.1	2.7	12.7	6.1	13.6	5.8
		% within endogamy	3.0%	1.1%	2.5%	3.0%	2.4%	3.3%	2.0%	.8%	1.4%	3.4%	4.4%	.6%	2.4%	1.4%	.8%	3.0%	1.3%	2.0%	1.4%	1.4%	4.2%	1.4%	.6%	2.2%
		% within university	29.2%	58.3%	48.5%	25.7%	27.3%	20.6%	59.1%	18.5%	31.0%	62.9%	59.6%	5.3%	38.5%	31.0%	23.8%	61.3%	10.4%	46.4%	30.0%	100.0%	64.3%	45.0%	8.9%	73.7%
		% of Total	.9%	.3%	.8%	.9%	.7%	1.0%	.6%	.2%	.4%	1.0%	1.3%	.2%	.7%	.4%	.2%	.9%	.4%	.6%	.4%	.4%	1.3%	.4%	.2%	.7%
	Yes	Count	46	5	17	55	40	81	9	22	20	13	19	71	24	20	16	12	69	15	21	0	15	11	41	5
		Expected Count	45.3	8.4	23.0	51.6	38.3	71.1	15.3	18.8	20.2	24.4	32.7	52.3	27.2	20.2	14.6	21.6	53.7	19.5	20.9	6.3	29.3	13.9	31.4	13.2
		% within endogamy	3.1%	.3%	1.2%	3.8%	2.7%	5.5%	.6%	1.5%	1.4%	.9%	1.3%	4.8%	1.6%	1.4%	1.1%	.8%	4.7%	1.0%	1.4%	0.0%	1.0%	.8%	2.8%	.3%
		% within university	70.8%	41.7%	51.5%	74.3%	72.7%	79.4%	40.9%	81.5%	69.0%	37.1%	40.4%	94.7%	61.5%	69.0%	76.2%	38.7%	89.6%	53.6%	70.0%	0.0%	35.7%	55.0%	91.1%	26.3%
		% of Total	2.2%	.2%	.8%	2.6%	1.9%	3.8%	.4%	1.0%	1.0%	.6%	.9%	3.4%	1.1%	1.0%	.8%	.6%	3.3%	.7%	1.0%	0.0%	.7%	.5%	1.9%	.2%
Total		Count	65	12	33	74	55	102	22	27	29	35	47	75	39	29	21	31	77	28	30	9	42	20	45	19
		Expected Count	65.0	12.0	33.0	74.0	55.0	102.0	22.0	27.0	29.0	35.0	47.0	75.0	39.0	29.0	21.0	31.0	77.0	28.0	30.0	9.0	42.0	20.0	45.0	19.0
		% within endogamy	3.1%	.6%	1.6%	3.5%	2.6%	4.8%	1.0%	1.3%	1.4%	1.7%	2.2%	3.6%	1.9%	1.4%	1.0%	1.5%	3.7%	1.3%	1.4%	.4%	2.0%	1.0%	2.1%	.9%
		% within university	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
		% of Total	3.1%	.6%	1.6%	3.5%	2.6%	4.8%	1.0%	1.3%	1.4%	1.7%	2.2%	3.6%	1.9%	1.4%	1.0%	1.5%	3.7%	1.3%	1.4%	.4%	2.0%	1.0%	2.1%	0.90%

			University																							
			ULPG	UNIL	UDL	UMA	UMH	UM	UNIO	UPO	EHU	UPCT	UPC	UPM	UPV	UPF	UNAV	URJC	URV	USAL	USC	US	UV	UVA	Univ	UNIZ	Total
Endogamy	No	Count	14	4	20	11	15	9	4	17	13	18	23	15	9	33	6	22	28	5	5	7	4	6	23	8	638
		Expected Count	11.2	7.6	10.3	14.9	8.5	16.4	10.9	7.0	24.3	7.3	22.4	18.5	17.9	12.7	5.2	9.1	15.5	9.7	19.1	22.7	21.8	16.4	15.2	20.6	638.0
		% within endog.	2.2%	.6%	3.1%	1.7%	2.4%	1.4%	.6%	2.7%	2.0%	2.8%	3.6%	2.4%	1.4%	5.2%	.9%	3.4%	4.4%	.8%	.8%	1.1%	.6%	.9%	3.6%	1.3%	100.0%
		% within university	37.8%	16.0%	58.8%	22.4%	53.6%	16.7%	11.1%	73.9%	16.3%	75.0%	31.1%	24.6%	15.3%	78.6%	35.3%	73.3%	54.9%	15.6%	7.9%	9.3%	5.6%	11.1%	46.0%	11.8%	30.3%
		% of Total	.7%	.2%	1.0%	.5%	.7%	.4%	.2%	.8%	.6%	.9%	1.1%	.7%	.4%	1.6%	.3%	1.0%	1.3%	.2%	.2%	.3%	.2%	.3%	1.1%	.4%	30.3%
	Yes	Count	23	21	14	38	13	45	32	6	67	6	51	46	50	9	11	8	23	27	58	68	68	48	27	60	1,466
		Expected Count	25.8	17.4	23.7	34.1	19.5	37.6	25.1	16.0	55.7	16.7	51.6	42.5	41.1	29.3	11.8	20.9	35.5	22.3	43.9	52.3	50.2	37.6	34.8	47.4	1,466.0
		% within endog.	1.6%	1.4%	1.0%	2.6%	.9%	3.1%	2.2%	.4%	4.6%	.4%	3.5%	3.1%	3.4%	.6%	.8%	.5%	1.6%	1.8%	4.0%	4.6%	4.6%	3.3%	1.8%	4.1%	100.0%
		% within university	62.2%	84.0%	41.2%	77.6%	46.4%	83.3%	88.9%	26.1%	83.8%	25.0%	68.9%	75.4%	84.7%	21.4%	64.7%	26.7%	45.1%	84.4%	92.1%	90.7%	94.4%	88.9%	54.0%	88.2%	69.7%
		% of Total	1.1%	1.0%	.7%	1.8%	.6%	2.1%	1.5%	.3%	3.2%	.3%	2.4%	2.2%	2.4%	.4%	.5%	.4%	1.1%	1.3%	2.8%	3.2%	3.2%	2.3%	1.3%	2.9%	69.7%
Total		Count	37	25	34	49	28	54	36	23	80	24	74	61	59	42	17	30	51	32	63	75	72	54	50	68	2104
		Expected Count	37.0	25.0	34.0	49.0	28.0	54.0	36.0	23.0	80.0	24.0	74.0	61.0	59.0	42.0	17.0	30.0	51.0	32.0	63.0	75.0	72.0	54.0	50.0	68.0	2104.0
		% within endog.	1.8%	1.2%	1.6%	2.3%	1.3%	2.6%	1.7%	1.1%	3.8%	1.1%	3.5%	2.9%	2.8%	2.0%	.8%	1.4%	2.4%	1.5%	3.0%	3.6%	3.4%	2.6%	2.4%	3.2%	100.0%
		% within university	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
		% of Total	1.8%	1.2%	1.6%	2.3%	1.3%	2.6%	1.7%	1.1%	3.8%	1.1%	3.5%	2.9%	2.8%	2.0%	.8%	1.4%	2.4%	1.5%	3.0%	3.6%	3.4%	2.6%	2.40%	3.2%	100.0%

Each subscript letter denotes a subset of University Structure categories whose column proportions do not differ significantly from each other at the 0.5 level

Pearson Chi-square value = 453.069a (d.f.47) p=0.000; **a** 2 cells (20.00%) have expected count less than 5. The minimum expected count is 2.73.

Figure AVII.2 Endogamy and university

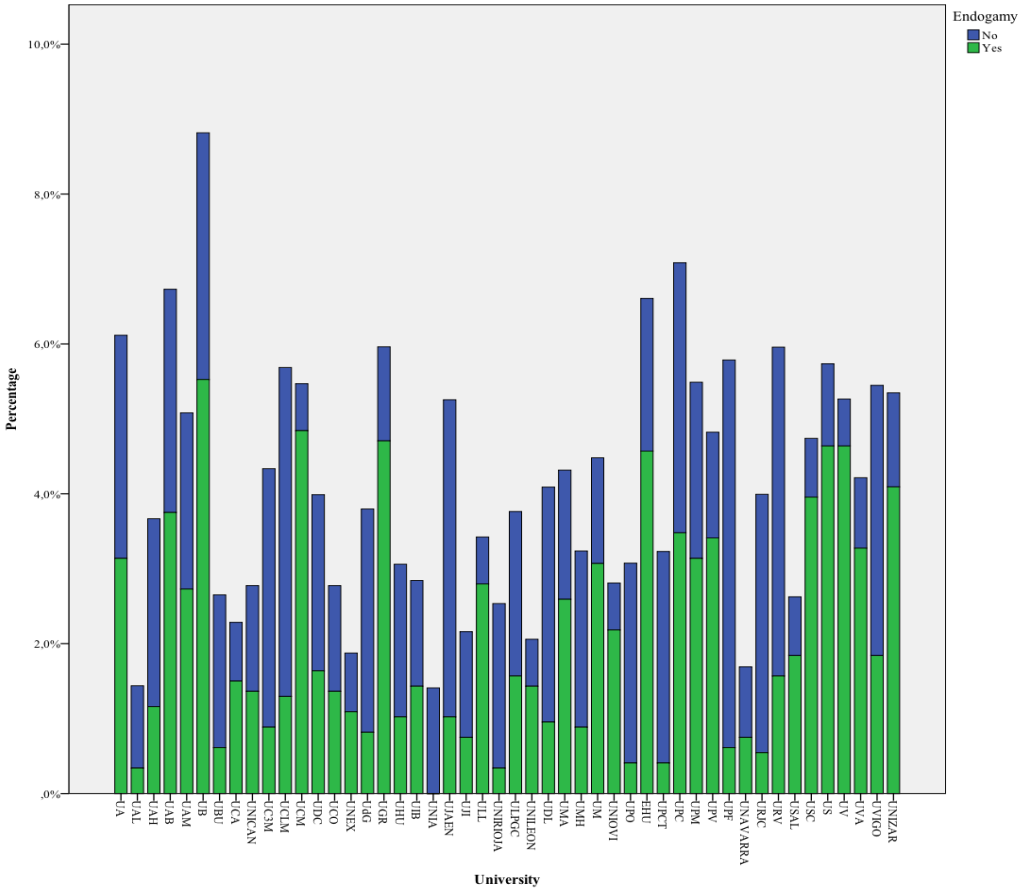


Table AVII.13 Crosstabs endogamy and seniority of the university

			Seniority of the university			Total
			Senior	Modern	Young	
Endogamy	Yes	Count	752a	457b	257c	1,466
		Expected Count	603.4	446.6	416.0	1,466
		% within endogamy	51.3%	31.2%	17.5%	100.0%
		% within seniority	86.8%	71.3%	43.0%	69.7%
		% of total	35.7%	21.7%	12.2%	69.7%
	No	Count	114a	184b	340c	638
		Expected Count	262.6	194.4	181.0	638.0
		% within Endogamy	17.9%	28.8%	53.3%	100.0%
		% within Seniority	13.2%	28.7%	57.0%	30.3%
		% of total	5.4%	8.7%	16.2%	30.3%
Total		Count	866	641	597	2,104
		Expected Count	866	641	597	2,104
		% within endogamy	41.2%	30.5%	28.4%	100.0%
		% within seniority	100.0%	100.0%	100.0%	100.0%
		% of total	41.2%	30.5%	28.4%	100.0%

Each subscript letter denotes a subset of University Structure categories whose column proportions do not differ significantly from each other at the 0.5 level.

Pearson Chi-square value = 321.831 (d.f.2) p=0.000

Table AVII.14 Crosstabs endogamy and university size

			Size				
			Large	Medium	Extra-Large	Small	Total
Endogamy	Yes	Count	723a	272b	424c	47d	1,466
		Expected Count	659.1	349.8	335.1	121.9	1,466
		% within endogamy	49.3%	18.6%	28.9%	3.2%	100.0%
		% within size	76.4%	54.2%	88.1%	26.9%	69.7%
		% of total	34.4%	12.9%	20.2%	2.2%	69.7%
	No	Count	223a	230b	57c	128d	638
		Expected Count	286.9	152.2	145.9	53.1	638.0
		% within endogamy	35.0%	36.1%	8.9%	20.1%	100.0%
		% within size	23.6%	45.8%	11.9%	73.1%	30.3%
		% of total	10.6%	10.9%	2.7%	6.1%	30.3%
Total		Count	946	502	481	175	2,104
		Expected Count	946	502	481	175	2,104
		% within endogamy	45.0%	23.9%	22.9%	8.3%	100.0%
		% within size	100.0%	100.0%	100.0%	100.0%	100.0%
		% of total	45.0%	23.9%	22.9%	8.3%	100.0%

Each subscript letter denotes a subset of University Structure categories whose column proportions do not differ significantly from each other at the 0.5 level.

Pearson Chi-square value = 306.991 (d.f.3) p=0.000

Table AVII.15 Crosstabs age and network use

			Networks use				
			None	Personal	Professional	Professional personal	Total
Age (years)	x ≤ 29	Count	2a	1a	0a	4a	7
		Expected Count	1.3	1.9	.5	3.4	7.0
		% within age	28.6%	14.3%	0.0%	57.1%	100.0%
		% within networks	.5%	.2%	0.0%	.4%	.3%
		% of total	.1%	.0%	0.0%	.2%	.3%
	30 ≤ x ≤ 39	Count	10a	13a	6a,b	61b	90
		Expected Count	16.9	23.9	5.9	43.3	90.0
		% within age	11.1%	14.4%	6.7%	67.8%	100.0%
		% within networks	2.5%	2.3%	4.4%	6.0%	4.3%
		% of total	.5%	.6%	.3%	2.9%	4.3%
	40 ≤ x ≤ 49	Count	104a	186b	48,b,c	404c	742
		Expected Count	139.4	196.7	48.5	357.4	742.0
		% within age	14.0%	25.1%	6.5%	54.4%	100.0%
		% within networks	26.4%	33.5%	35.0%	40.0%	35.4%
		% of total	5.0%	8.9%	2.3%	19.3%	35.4%
	50 ≤ x ≤ 59	Count	161a	257a	67a	426a	911
		Expected Count	171.2	241.5	59.5	438.8	911.0
		% within age	17.7%	28.2%	7.4%	46.8%	100.0%
		% within networks	40.9%	46.2%	48.9%	42.2%	43.4%
		% of total	7.7%	12.3%	3.2%	20.3%	43.4%
	x ≥ 60	Count	117a	99b	16b,c	115c	347
		Expected Count	65.2	92.0	22.7	167.1	347.0
		% within age	33.7%	28.5%	4.6%	33.1%	100.0%
		% within networks	29.7%	17.8%	11.7%	11.4%	16.5%
		% of total	5.6%	4.7%	.8%	5.5%	16.5%
Total		Count	394	556	137	1.010	2,097
		Expected Count	394	556	137	1.010	2,097
		% within age	18.8%	26.5%	6.5%	48.2%	100.0%
		% within networks	100.0%	100.0%	100.0%	100.0%	100.0%
		% of total	18.8%	26.5%	6.5%	48.2%	100.0%

Each subscript letter denotes a subset of Knowledge Area categories whose column proportions do not differ significantly from each other at the 0.5 level.

Pearson Chi-square value = 94.774[a] (d.f.12) p=0.000

a 4 cells (20.00%) have expected count less than 5. The minimum expected count is .46.

Annex VIII
Abbreviations

Table AVIII.1 University names

Abbr.	University name
EHU	Euskal Herriko Unibertsitatea
UA	Universitat d'Alacant
UAB	Universitat Autonoma de Barcelona
UAH	Universidad de Alcala
UAL	Universidad de Almeria
UAM	Universidad Autonoma de Madrid
UB	Universitat de Barcelona
UBU	Universidad de Burgos
UC3M	Universidad Carlos III de Madrid
UCA	Universidad de Cadiz
UCLM	Universidad de Castilla-La Mancha
UCM	Universidad Complutense de Madrid
UCO	Universidad de Cordoba
UDC	Universidade da Coruna
UdG	Universitat de Girona
UDL	Universitat de Lleida
UEXT	Universidad de Extremadura
UGR	Universidad de Granada
UHU	Universidad de Huelva
UIB	Universitat de les Illes Balears
UJAEN	Universidad de Jaen
UJI	Universitat Jaume I
ULEON	Universidad de Leon
ULL	Universidad de La Laguna
UM	Universidad de Murcia
UMA	Universidad de Malaga
UMH	Universidad Miguel Hernandez
UNAV	Universidad Publica de Navarra
UNIA	Universidad Internacional de Andalucía
UNICAN	Universidad de Cantabria
UNIOVI	Universidad de Oviedo
UNIRIOJA	Universidad de La Rioja
UNIZAR	Universidad de Zaragoza
UPC	Universitat Politecnica de Catalunya
UPCT	Universidad Politecnica de Cartagena
UPF	Universitat Pompeu Fabra
UPGC	Universidad de las Palmas de Gran Canaria
UPM	Universidad Politecnica de Madrid
UPO	Universidad Pablo de Olavide
UPV	Universidad Politecnica de Valencia

Abbr.	University name
URJC	Universidad Rey Juan Carlos
URV	Universitat Rovira i Virgili
US	Universidad de Sevilla
USAL	Universidad de Salamanca
USC	Universidad de Santiago de Compostela
UV	Universitat de Valencia
UVA	Universidad de Valladolid
UVIGO	Universidade de Vigo

Table AVIII.2 Autonomous communities

Abbr.	Autonomous community
AND	Andalucía
ARA	Aragón
AST	Asturias
CAN	Cantabria
CAT	Cataluña
CLM	Castilla - La Mancha
CYL	Castilla y León
EXT	Extremadura
GAL	Galicia
ISB	Islas Baleares
ISC	Canarias
MAD	Madrid
MUR	Murcia
NAV	Navarra
PVA	País Vasco
RIO	La Rioja
VAL	Comunidad Valenciana