UNIVERSITY OF TWENTE.
Enschede/Barcelona - 9 October 2015

Performance-based funding for higher education in the Netherlands and Catalonia: A neo-institutional explanation

Master thesis: Public Administration
(specialization Public Management)
Author: Carolien Somi (s1196928)
Faculty: Management and Governance

Supervisor: Prof. dr. R. (René) Torenvlied
Second reader: Dr. H. (Harry) de Boer

Preface

With this thesis, my time as a master student Public Management at the University of Twente will come to an end. My interest was aroused to take a look into the world of performance-based funding in two different countries (region). The report is produced by thoroughly research to have done in the literature and documents. Also, interviews were conducted with managers of universities in Catalonia and directors/managers of the government of Catalonia.

In this preface, I would like to make use of the opportunity to thank various people. First of all, my thanks go to my first supervisor prof. dr. R. Torenvlied. Mr. Torenvlied gave me the opportunity to participate in this extreme interesting research and to expand this research abroad. He supported me with essential feedback and critical advices. In cases when I was insecure, Mr. Torenvlied always gave me the feeling that I had to be more confident and that I was on the right track. Mr. Torenvlied motivated me in different aspects. I also want to thank Dr. H. de Boer, my second supervisor, who also supported me with advices and feedback. I indicated that I wanted to expand the research abroad. Subsequently, Dr. de Boer introduced me to my supervisor in Catalonia Ms. Alicia Betts, where I am extremely thankful for. Mr. Torenvlied and Mr. de Boer opened doors for me; I could not open by myself. They motivated me and let me be a part of an existing research of CHEPS. Many thanks to both of my supervisors.
Mr. de Boer assured me that Catalonia was the right place to collect my data. Nothing has been more true. Ms. Alicia Betts and the colleagues at ACUP made me feel like home in a country that was foreign for me and helped me to collect the right data. They also offered me a place at their office and were helpful in many aspects. I never regretted the choice I made to go to Catalonia and to collect my data there. Thereby, I also want to thank my supervisor in Catalonia, Ms. Alicia Betts. Even when Ms. Betts was busy, she found time to give me advices and was always available to answer my questions. Mr. Josep M. Vilalta and Ms. Alicia Betts managed to bring me in contact with the managers/directors of the Government of Catalonia and managers of different Catalan universities. This was extremely important for the research. Thank you Ms. Alicia Betts, Mr. Josep Vilalta and the colleagues at ACUP for what you have done for me.
Further, I want to thank all the respondents who participated in this study. They found time for an interview and provided me documents. Finally, I want to thank my family and friends for their understanding of the many hours and months that the thesis demanded from me. My parents always taught me to focus on my study and get the best out of myself. I have seen that working hard will be rewarded, which gives me a positive view on the future.

Carolien Somi

Enschede/Barcelona, October 2015

Abstract

Performance-based funding systems in the Netherlands and Spain (Catalonia) are the main subject of this study. The main questions are: '*How can we explain that the Netherlands and Spain (Catalonia) have chosen different forms of PBF systems for their higher education institutions* and *what are the consequences of these chosen forms of PBF systems for the performance agreements made by the HEIs within these countries?*' To provide an answer to these two main questions the study is split in two parts. The first part describes the chosen PBF systems and the second part explains the variation in adopted PBF systems between and within the countries (region). Academic literature, relevant documents and data gathered from interviews were important sources for the study.

Several countries work with performance-based funding systems for their HEIs. PBF systems are policy instruments that aim to improve efficiency and effectivity in higher education. One can observe a lot of variation in PBF systems across countries, while the countries' ultimate goal behind PBF systems is similar. This study showed that there are numerous differences in the adopted PBF systems between Catalonia and the Netherlands. The following differences can, among other things, be observed: the rationales behind the establishment of the systems differ (the instrumental goals); in the Netherlands there are individual PAs in contrast to a uniform PBF system in Catalonia; the PBF procedures differ; and there is an ex-ante funding in the Netherlands opposite to ex-post funding in Catalonia. There are also similarities in the adopted PBF systems between the two countries (region): a part of the existing core funding of the government to HEIs is based on performance indicators and we speak in both cases of gentleman's agreements. In the case of Catalonia, there is a uniform PBF system applied to all universities. This is different in the Netherlands where HEIs can include, among other things, own chosen additional indicators in the individual PAs. This led to some variation in the individual PAs between HEIs within the Netherlands.
I use the theory of new-institutionalism to explain the differences, with (1) coercive mechanisms; ((in) formal pressures) and (2) mimetic mechanism as the explanatory variables. Based on empirical data: the variation in adopted PBF systems between and within the Netherlands and Catalonia can be explained by institutional characteristics (coercive mechanisms). We can assume that the different dominant state traditions (state model and administration culture) in both countries (region) have influence on the different chosen forms of PBF systems by the countries (region). We can also assume that the variation in the individual PAs between HEIs within the Netherlands is, among other things, a result of the minimum to moderate coercive character of the Dutch legal framework for HE and the high influence of the Dutch universities in the formulation of the objectives and indicators. The opposite is true in Catalonia. The very coercive character of the legal framework for HE and the limited influence of the Catalan universities in the formulation of the objectives and indicators can explain the chosen uniform PBF system for HEIs. The consequences of the chosen PBF system in the Netherlands for the PAs are (in comparison to the case of Catalonia): HEIs have more influence on the design and form of the PAs resulting in more variation in the PAs of HEIs; Dutch HEIs perceive PAs as a joined effort; and we expect a higher effectivity of the PAs.

Content

List of figures

List of tables

List of abbreviations

HE: Higher education
HEIs: Higher education institutions
PBF: Performance-based funding
PAs: Performance agreements
CAT: Catalonia
SP: Spain
NL: Netherlands
UB: University of Barcelona
UaB: Universitat Autonoma de Barcelona
UPC: Universitat Politecnica de Catalunya
UPF: Universitat Pompeu Fabra
UdG: Universitat de Girona
UdL: Universitat de Lleida
URV: Universitat Rovira i Virgili
UOC: Universitat Oberta de Catalunya (Open University)
URL: University Ramon Llull
UIC: International University of Catalonia
UAO CEU: University Abat Ceu
EUR: Erasmus University Rotterdam
RUG: University of Groningen
TU Delft: Delft University of Technology
LEI: Leiden University
UM: Maastricht University
UT: University of Twente
UU: Utrecht University
UvA: University of Amsterdam
TU/e: Eindhoven University of Technology
RU: Radboud University Nijmegen
TiU: Tilburg University
VU: VU University Amsterdam
WUR: Wageningen University
PThU: Protestant Theological University
TUA: Theological University Apeldoorn
UvH: University for Humanistic Studies

1 Introduction

This chapter first highlights the background of the research. Then the focus is on the main questions and sub questions and attention is paid to the research approach. Finally, the last section of this chapter gives an outline of the paper.

1.1 Research problem

Various countries in Europe work in some way with a form of performance-based funding (PBF) in higher education. The European Universities Association (EUA) analyzed the extent to which funding of European universities is based on performance indicators. The EUA concluded that this funding mechanism exist to some extent throughout whole Europe (ScienceGuide, 2015).

New Public Management (NPM) highlights accountability, decentralization, efficiency, excellence and service orientation (Ferlie, Ashburner, Fitzgerald & Pettigrew, 1996).Performance-based funding systems are policy instruments that intend to improve efficiency and effectivity in higher education. Different governments introduced performance-based instruments as a means to make the higher education institutions focus on specific outcomes and reward them financially for performance that is consistent with priorities of the government (CHEPS, 2015, p. 4). CHEPS (2015, p. 5) put forward that there is a lot of variation across systems and countries in the design, the implementation of and the processes around models of performance-based funding and performance agreements (PAs). In various countries, the government uses funding formulas to determine the amount of budget that will be provided to higher education institutions (CHEPS, 2015, p. 8). These formulas often function based on the results achieved in the current past: an 'ex-post approach'. On the other hand, performance agreements often involve the rewarding of higher education institutions based on expected performance of the institutions in the (short-term) future: an 'ex-ante approach' (CHEPS, 2015, p. 8).
Research showed that some countries implement the allocation of direct funding on the base of a formula that uses a mix of input and output criteria (Jongbloed, 2008). Specific for research budgets, competitive funding has evolved as an important allocation mechanism. In addition, some governments work with specific performance contracts based on strategic objectives (Jongbloed, 2008, p. 25). Hicks (2011) states that at least fourteen countries introduced performance-based research funding systems (PRFSs) in 2010, though different variants of these systems. For example, the United Kingdom launched the Research Assessment Exercise (RAE) in 1986 and Spain introduced the system *sexenio* in 1989. Both systems are national systems using performance indicators for higher education funding (Hicks, 2011, p. 252). Liefner (2003) studied forms of resource allocation in different universities and their impacts on the universities' performance. Outcomes of this research confirm that changes in resource allocation influence activity level and type of activities the academics engage in. However, this is only the case for the success of universities on the short-term (Liefner, 2003, pp. 484-486). Rabovsky (2012, pp. 694-695) found out that performance-funding policies did not have considerable influence on state budgets and have limited impact on institutional priorities.

The rhetoric linked with performance-based funding policies can be based on market based competition, resource dependency or the institutions' accountability to the society (Dougherty and Reddy, 2011). The logic behind these endeavors is similar and associated with the conception that by

binding money to particular performance, states will be capable to influence the higher education institutions' behavior in an expected way. So, while the governments' ultimate goal behind the introduction of funding based on performance indicators is similar, different forms of PBF systems are chosen. This issue gives rise to questions as: Which forms of performance-based funding systems for higher education institutions are adopted by different countries? Which factors influence the different chosen forms of PBF systems for HEIs? What are the effects of performance-based funding for HEIs? This study seeks answers to such questions by focusing on the different performance-based funding systems for HEIs in Catalonia and the Netherlands.

1.2 Research questions

The rationale of performance funding is that funds should flow to institutions where performance is manifest. Well-'performing' institutions should receive more funding than lesser performing institutions, which would provide performers with a competitive edge and would stimulate less performing institutions to perform. Output should be rewarded, not input (Herbst, 2007, p. 90).

The main questions of this study are:

- **A** *How can we explain that the Netherlands and Spain (Catalonia) have chosen different forms of PBF systems for their higher education institutions?*
  B *What are the consequences of these chosen forms of PBF systems for the performance agreements made by the HEIs within these countries?*

Sub questions help us to provide answers to the main questions:

- Sub question 1 *What are the differences and similarities in the adopted performance-based funding systems between and within the Netherlands and Spain (Catalonia)?*
- Sub question 2 *To what extent can the variation in the adopted performance-based funding systems between and within the Netherlands and Spain (Catalonia) be explained by institutional characteristics?*
- Sub question 3 *To what extent can the variation in the adopted performance-based funding systems between and within the Netherlands and Spain (Catalonia) be explained by characteristics of the higher education institutions?*

1.3 Research approach

The theory of new-institutionalism highlights the importance of the institutional environment that effects institutions in various aspects. Institutions respond to expectations from the environment in order to increase, inter alia, their survival chances. This behavior of the institutions leads to the homogeneity process 'isomorphism' that forces institutions to copy others that face similar environmental conditions. Institutional isomorphism distinguishes between three fundamental mechanisms that underlie isomorphism: (1) coercive isomorphism, (2) mimetic isomorphism, and (3) normative isomorphism. In this master thesis, I use the theory of new-institutionalism. Hypotheses for performance-based budgeting are deductively derived from the theory, which are subsequently tested in the contexts of higher education in Spain (Catalonia) and the Netherlands. The hypotheses are tested by means of data collected from interviews, academic literature, document analysis and observations (Babbie, 2010, pp. 51-52). In this way we gain more insight in the mechanisms that explain differences and similarities in performance-based budgeting in higher education between and within countries (regions). On the basis of document analysis, interviews and academic literature, a description is provided of the performance-based funding systems for higher education

institutions in the Netherlands and Spain (Catalonia). In addition, the variation in the adopted performance-based funding systems between and within the countries (region) is explained by institutional characteristics and characteristics of the higher education institutions.

1.4 Outline of the thesis

This master thesis consists of seven chapters. The second chapter elaborates the theory of new-institutionalism and the hypotheses that are derived from the theory. The third chapter discusses the methodology with a focus on the research design, case selection, data collection methods and data analysis. The fourth chapter presents the performance-based funding system for higher education institutions in Spain (Catalonia). Also, the context of PBF in Spain (Catalonia) is highlighted. In the fifth chapter attention is paid to the performance-based funding system for higher education institutions in the Netherlands. Moreover, the focus is on the context of PBF in the Netherlands. In chapter six, the variation in the adopted performance-based funding systems between and within the Netherlands and Spain (Catalonia) is explained by institutional characteristics and characteristics of the higher education institutions. At last, chapter seven presents the conclusions, limitations and recommendations.

2 Theoretical framework

The first section gives an introduction to the theory of new institutionalism. This section elaborates the main characteristics and the strengths of this theory. Within this theory, three mechanisms of isomorphic institutional change are central: (1) coercive isomorphism, (2) mimetic isomorphism, and (3) normative isomorphism. This study focuses on: (1) coercive mechanisms (formal and informal pressures) and (2) mimetic mechanism; to explain variation in adopted PBF systems. The second section describes the mentioned mechanisms separately. After the elaboration of each mechanism, hypotheses derived from the theory are set out that are tested in this research. For a clear overview of all the hypotheses for the 'variation within countries (region)' and 'variation between countries (region)' see appendix 1.

2.1 An introduction to the theory of new-institutionalism

The theory of new-institutionalism recognizes that organizations function in an environment that consists of other organizations, 'the institutional environment'. Organizations comply with expectations from the institutional environment in order to obtain legitimacy and increase their survival chances. The theory of new-institutionalism focuses on the process of homogeneity of organizations in an organizational field. An organizational field refers to multiple organizations that produce the same kind of services/products, in the accumulation, form an institutional area (DiMaggio & Powell, 1983, p. 148). Once an organizational field is established, there will emerge forces that lead organizations to become more like each other. This homogeneity process is called isomorphism which forces rational actors to copy others that face similar environmental conditions. Isomorphism can be distinguished between competitive- and institutional isomorphism (DiMaggio & Powell, 1983, p. 149). The focus in this research is on institutional isomorphism which refers to homogeneity of organizations driven by: (1) coercive isomorphism (formal and informal rules), (2) mimetic isomorphism (imitation as a result of uncertainty), and (3) normative isomorphism (influence of professionalized standards) (DiMaggio & Powell, 1983, p. 150).

Strengths of the theory of sociological new-institutionalism

The theory of sociological new-institutionalism has his origin within the subfield of organizational theory. A main strength of the theory of sociological institutionalism is that it developed an extensive conception of why specific institutional forms or procedures might be chosen by organizations. This conception is broader than e.g. the conception developed by the rational choice institutionalists, which simply argue that a particular practice might be chosen on the base of a simple efficiency calculation. Sociological institutionalists argue that organizations adopt particular institutional forms or procedures as a result of forms of processes linked with the transmission of cultural practices to enhance social legitimacy (Hall & Taylor, 1996, p. 950). Otherwise stated, organizations apply particular institutional forms or procedures because these forms and procedures are considered as being important and highly valued within a particular cultural environment (Hall & Taylor, 1996, p. 952). Obtaining 'legitimacy' and increasing survival chances is central within this approach.
In addition, the theory of sociological institutionalism specifies extensively the ways in which the institutional environment can influence the individuals' preferences or identities. It provides an explanation in which way individuals (even individuals that are highly instrumental) choose a strategy from culturally-specific repertoires (Hall & Taylor, 1996, pp. 954-955). DiMaggio and Powell (1991, p.

11) argue that the institutional environment not simple only limits options, but it establishes the criteria by which individuals find out what their preference are. So, cognitive frameworks limit actions but also generate an actor's preferences.
Furthermore, the sociological institutionalists' description of the social structure is comprehensive and global. It pervades all political aspects and aspects of social life in all states (Finnemore, 1996, p. 327). This approach provides also a rich and very detailed theoretical framework in comparison to other theoretical frameworks as constructivism. The substantive content of social structures is specified by sociological institutionalists. They not only argue that the social structure is of importance, but they also explain what the social structure implies. The world culture (the social structure) is often specified by these scholars as including specific characteristics of Western and Weberian culture which resulted in hypotheses that could be tested empirically (Finnemore, 1996, p. 327). At last, the focus of the sociological institutionalists is on the emerging of forces that lead organizations to become more like each other. Organizational and behavioral similarities are, among other things, caused by world cultural norms (Finnemore, 1996, p. 326). This conception of sociological institutionalists is supported by strong evidence that showed presence of global homogeneity processes (Finnemore, 1996, p. 328).

2.2 Mechanisms explaining isomorphism

2.2.1a Coercion: formal pressures

Coercive isomorphism derives from formal and informal pressures on organizations by the institutional environment and by cultural expectations in the society (DiMaggio & Powell, 1983, p. 150). These pressures can be experienced as a persuasion, force or an invitation to unite in conspiracy. Examples of formal pressures are: rules, laws and penalties (Scott & Davis, 2007, p. 259). Coercion can be applied in a direct way but also indirectly by making the access to resources dependent on conformity and compliance of the organizations.
The existence of a common legal environment influences various aspects of the behavior and structure of an organization. Weber emphasized the extreme effect of complicate, rationalized system of contract law that stands in need of the necessary organizational controls to recognize and take into account the legal commitments. Other technical and legal preconditions of the state, as annual reports and requirements for financial reporting that safeguard qualification to obtain funds or federal contract, also form organizations (DiMaggio & Powell, 1983, p. 150).
Pfeffer and Salancik (1978, pp. 188-224) have deliberated how organizations confronted with uncontrollable interdependence seek to use the social system´s greater power and its government to provide needs or erase difficulties. These scholars noticed that these politically constructed environments have two main characteristics: politics do not directly experience the aftereffects of their actions and the decisions of politics are applied to various organizations which lead to inflexible decisions. Meyer and Rowan (1977) put forward that in the case rationalized states expand their dominance over multiple social arenas, the structures of organizations reflect more institutionalized and legitimated rules by and within the state. For example, universities are considered as repositories of national identity and culture (Horta, Huisman, & Heitor, 2008, p. 148). As a consequence, organizations are more and more homogenous, which shows that isomorphism occurs. Other factors that support isomorphism are: capital centralization and coordination of philanthropy throughout direct authority relationships (DiMaggio & Powell, 1983, pp. 150-151).

Further, DiMaggio and Powell (1983) argue that the extent of the structural impact on particular organizations is dependent on the resources received from central and powerful organizations. This argument is more or less in line with the resource dependency theory that predicts that organizational autonomy is reached when organizations have a more plural resource basis. Consequently, this will possibly lead to a greater organizational diversification. In accordance with the mentioned logic, public organizations are more effected by coercive isomorphism than private organizations, as a result of their financial relationship with the state (Cai & Yan, 2011, p. 58). When organizations are subject to outside coercive auditing, evaluation and regulation, the organizations are mostly reacting defensively toward isomorphic alteration. In case these outside pressures evolve, organizations have a tendency to find a way to eliminate or diffuse the pressures by adjusting their practices. Changing the practices in line with established structures and routines by the government agencies or the law, is the easiest way to secure the organization's survival. In this way, conflict decreases (Frumkin & Galaskiewicz, 2004, pp. 285-286).
The basis of legitimacy here is the enactment with rules and laws. The behavior of organizations is accepted if the organization adheres to rules and the law. The performance of the duties of organizations should therefore conform to the rules and the law (Scott & Davis, 2007, p. 259).

Derived from the theory, we hypothesize for **'variation within countries (region)'** that:

- *Hypothesis 1: The less coercive the national legal framework for higher education (e.g. laws related to education and funding) within the countries (region), the more variation we observe in the performance agreements of the higher education institutions.*

This hypothesis is based on imposed formal pressures (rules and laws) on organizations by the institutional environment. The institutional environment is in this case the more powerful state of the countries/region. The HEIs dependent on the state. Organizations are formed by the law and rules imposed by the state; they have to abide the national legal framework. The national legal frameworks for higher education apply to all higher education institutions identical. In case the national legal framework related to (performance-based) funding and education in a particular country is very coercive and extensive, there is no space for HEIs to adopt e.g. different indicators and/or set different ambitions for particular indicators in the individual performance agreements. The reverse is then also true; when a national legal framework related to (performance-based) funding and education is minimal coercive and limited on this topic, HEIs can adopt different indicators and/or set different ambitions for indicators in the individual performance agreements.

2.2.1b Coercion: informal pressures

After the elaboration of formal pressures on higher education institutions, coercive isomorphism also indicates that there are informal pressures on HEIs from the institutional environment. Informal pressures should be viewed as cultural expectations in the society, with culture as main factor. It is of importance to focus here on the historical-institutional context of the state and its administration of both countries (Kickert, 2008, p. 223). It is expected that the state tradition of a particular country influences the form and the content of the chosen PBF system in that country. In general, four state tradition types are distinguished in comparative politics and administration. These state tradition types are: the Napoleonic type of state, the Germanic type of state, the Anglo-Saxon type of state and the Scandinavian type of state (Kickert, 2008, p. 223).

	Anglo-Saxon (no state)	*Germanic (organicist state)*	*French (Napoleonic state)*	*Scandinavian (mixture Anglo-Saxon and Germanic)*
Is there a legal basis for the 'State'	No	Yes	Yes	Yes
State-society relations	Pluralistic	Organicist	Antagonistic	Organicist
Form of political organisation	Limited federalist	Integral / organic federalist	Jacobean, 'one and indivisible'	Decentralised unitary
Basis of policy style	Incrementalist 'muddling through'	Legal corporatist	Legal technocratic	Consensual
Form of decentralisation	'State power' (US); local government (UK)	Cooperative federalism	Regionalised unitary state	Strong local autonomy
Dominant approach to discipline of public administration	Political science /sociology	Public law	Public law	Public law (Sweden); organisation theory (Norway)
Countries	UK US Canada (but not Quebec) Ireland	Germany Austria Netherlands Spain after 1978 Belgium after 1988	France Italy Spain (until 1978) Portugal Quebec Greece Belgium (until 1988)	Sweden Norway Denmark

Table 1: Types of State Traditions in line with Loughlin (1993, p. 231).

Four distinctive state traditions

Four different state traditions of democracies can be distinguished. With the concept of tradition is meant 'a set of cultural practices and institutions that compose of a set of specific expectations about particular behavior' (Perez-Diaz, 1993). Important to note is that the four traditions are described in general. A distinction can be made between the following state tradition types: 1. Anglo-Saxon (No state) 2. Germanic (Organicist state) 3. Napoleonic (Antagonistic state) and 4. Scandinavian (mix of an Anglo-Saxon and Germanic state tradition) (see table 1). One should have in mind that these four distinctive state traditions are simplifications of the complex reality. However, it can be practical to distinguish between a dominant and subordinate logic in the social systems´ organization. A dominant logic refers to the most significant characteristics of the system that affect the others parts of the system. A subordinate logic points out the characteristics of the subordinate system that possibly challenge the dominant logic (Keating & Loughlin, 2013, p. 47). A state can have different elements of different state traditions. The distinction in table 1 shows only the dominant logics of state traditions that can be applied to a particular state. The Germanic and Napoleonic state traditions are the most common state traditions in Europe. Both forms are described in more detail below.

A Germanic state tradition

First of all, a characteristic of the Germanic state tradition is that the state forms an outstanding entity. The government is divided into different departments and agencies, whereby the government´s authority is perceived as not being divisible and negotiable. Within this state tradition, political systems are federal; several governments at different levels express their state authority. Furthermore, the citizens are seen as a member of a necessarily organic society where citizens have a

more formalized relationship with the state. The social reality is thereby best expressed by the preponderance of corporatist presentation patterns (Lehmbruch, 1991). In line with these interpretations of the society and the state, the state can be characterized as a semi-sovereign state (Katzenstein, 1987).

The main characteristic of the state within the Germanic state tradition is that it is a legal state, also expressed as a *Rechtstaat.* Even though the state has remarkable authority and power, these elements are limited by its own set laws. This restriction is an important reason to support the fact that the state is a semi-sovereign state. In this case, the law becomes an important factor in the state, as being the fundamental expression of the internal authority in the state. The use of legal forms will lead to legitimacy, which is seen as a central factor for the success of implemented policies by the government.

In the same line, (civil) servants of the state within the Germanic state tradition, are not just simple employees of the state. The (civil) servants are to some extent public figures of the centrality and power of the state (Keating & Loughlin, 2013, pp. 48-49). The relationship between the (civil) servants and the state's power is, among other things, expressed through the importance of legal training that (civil) servants have to follow for an adequate qualification for the job. For the reason that the state is central in the political life, the (civil) servants must also have a legal foundation and firm moral (Keating & Loughlin, 2013, p. 49). From the perspective of regionalism, the important factor in a particular Germanic state is the predominance of a federal form of decentralization. In Germanic tradition kind of states there is a division of labour between the legislating *Bund*/*Federal* level of government and the implementing *Land* level of government. Even though a distinction is made between the levels of government, *the Land* is mostly identified as the regional level of government in modern European territorial politics (Keating & Loughlin, 2013, p. 49).

B Napoleonic state tradition

The Napoleonic state tradition was initiated in France and in various southern European countries that developed characterized of this tradition during the enforcement of the French rule in the nineteen century (Loughlin, 1993). Similar to the Germanic tradition, within a Napoleonic state tradition there is an indivisible and unitary state authority (Hayward, 1983). In point of fact, one of the main reasons for some countries to establish a state in line with the Napoleonic state tradition was to create a real nation and thereby conquer divisions within the society. For example, the building of a nation state more or less succeed in France. However, in countries as Belgium and Spain, this nation building process has not been achieved. At most, the integration in the society that was developed through this nation building process was effective for a certain time, whereby it eliminated the divisions in the society (Keating & Loughlin, 2013, p. 52). Except of the various similarities between the Napoleonic state tradition and the Germanic state tradition, there are also important differences between both forms. The most significant one is that although both forms emphasize the unitary of the state and the state's authority, there is a strong difference in how they perceive the state-society relationship. Where the Germanic state tradition is committed to a more federal way of governing, the Napoleonic state tradition is more based on a direct application of the state's authority over its citizens (Keating & Loughlin, 2013, p. 52). Differences in choices about the way authority is applied can be a result of the complications to govern a particular society with various historical social divisions and cultural aversion to government authority. Examples of countries in need of a real state authority are: Spain, Portugal, Italy and Greece (Keating & Loughlin, 2013, p. 52). In the Napoleonic state tradition the state has a central power position. The state's

central power position is shown in his important role in the economic and social development of the country. Within this tradition, the government´s power of publicly possessed companies and the government's planning effects the development of the private economy. This role for the state is not applied in the Germanic tradition. Even though the state in the Germanic tradition has a central role in the development of the state in various aspects, there remains a real division between the private and public sectors (Keating & Loughlin, 2013, p. 53).
Another aspect of the centralization of the state in the Napoleonic tradition is reflected in the constitutional regimes´ relative fragility. Hayward (1983) put forward that constitutions are for the French a more ´periodical literature´; even though the state as such has endured, the regimes have changed by relatively dramatic disorders. Political change within the Napoleonic state tradition is more revolutionary than it is incremental (Huntington, 1968).
In case a Napoleonic state wants to decentralized, it mostly applies a more regionalized unitary state model. A suited example here is Italy, which established a model of two forms of regions in the 1948 Constitution. These two forms of regions were: the ´special´ region (mostly the geographically or linguistically distinct areas) and the ´ordinary´ region (this is mostly the rest). Though, the Italian state still had the financial and legal control over all regions. This approach is followed by other countries as Portugal and France. Spain was also affected by the Italian model in its 1978 constitutions. It distinguished between the ´special´ (the autonomous communities) and ´ordinary´ regions. The ´special´ regions that developed relatively fast were: Catalonia, the Basque Country, Galicia and Andalucía (Keating & Loughlin, 2013, pp. 53-54).

Derived from the theory, we hypothesize for **'variation between countries (region)'** that:

- *Hypothesis 2: The more cultural differences between the countries (region), the more variation we observe in the PBF systems between the countries (region).*

This hypothesis is based on imposed informal pressures on organizations by the institutional environment. The institutional environment is in this case the more powerful state of the countries/region. Organizations are formed by informal pressures which are mostly cultural expectations in the society. Four state tradition models are distinguished. Each of these state traditions leads to different cultural expectations of the society. With tradition is meant: a set of cultural practices and institutions that consist of a set of specific expectations about particular behavior (Perez-Diaz, 1993). For example, the Napoleonic state tradition leads to different expectations of the society than this is the case in a Germanic state tradition. Subsequently, this will lead to different chosen forms of PBF systems for higher education institutions by the countries.

2.2.2 Mimetic behavior

Mimetic isomorphism is the attainment of conformity by means of imitation (DiMaggio & Powell, 1983, pp. 151-152). Mimetic isomorphism is one of the processes where a particular organization changes over time to be more similar to other institutions in the same environment.
Mimetic behavior is often a consequence of ambiguous goals, insufficient technological knowledge and/or when the environment develops symbolic uncertainty. Modeling others is often a reaction to uncertainty. The uncertain organization will model others as it is seen as a convenient source of practices (DiMaggio & Powell, 1983, p. 151). Mimetic isomorphism can also arise by a so called 'obligatory action' as stated in the March model (March, 1981, pp. 221-226). In line with March's model; when enough social actors implement the things in a particular way, that specific course of action becomes more institutionalized or taken for granted by the institutions. As a consequence, the

social actors implement that particular course of action automatically. When enough of one type of organizations adopts a particular course of action, then other similar organizations will also imitate them. Organizations often model similar size organizations in their organizational field or organizations that they receive more successful/legitimate than their organization (DiMaggio & Powell, 1983, p. 151). Both forms of imitation will be described below in more detail.

First mimetic process: imitating organizations of similar size

It is assumed that organizations model others in their population that are similar in terms of strategy, structure, constraints and resources. Organizations that could be identified of similar size are quite similar in their strategy and structure; they depend on the same environmental resources and are influenced by identical structural constraints (Hannan and Freeman, 1977). Results of conducted research showed that when organizations grow, they show more discontinuities (Kimberly and Miles, 1980). This result suggests that in various organizational populations, small organization may have basically a different form than large organizations. Organizations are more likely to interact more intensively with organizations of similar size or form functioning in the same niche/environment (Hannan and Freeman, 1977 and Haveman, 1993, p. 597).

Interactions between particular institutions are likely to be localized along the particular size of the organizations, because organizations of different forms are, inter alia, in need of different resources (Haveman, 1993, p. 597). It is stated that organizational size effects the pattern and structure of social interaction, because the more organizational members, the lower the ability of organizational members to have one-on-one interactions with each of the other members (Durkheim, 1933, p. 262). This size-localized model also points out that organizations of medium size are facing the most extreme competition. Small organizations tend to compete with other small organizations and to a lesser degree with organizations of medium size. Large organizations tend to compete with other large organizations and to a lesser degree with organizations of medium size. At last, the medium-size organization competes with other medium-size organizations and to a lesser degree with both small and large organizations. Organizations of medium size are facing a higher risk to fail than small or large organizations. This argument about competition is supported by evidence (Haveman, 1993, p. 597). In line with the resource-partitioning model, it is argued that large organizations dispose of the advantages of generalism, the small organizations capture the advantages of specialism and the medium-sized organizations does not have both of these mentioned advantages (Meyer, 1990).

This size-localized model of organizational interaction can be applied to the mimetic organizational change process by taking into account what organizational size implies from an institutional perspective. Organizations regard the actions of similar size organizations and thereby it is most likely that they model the strategies of these organizations (Scott, 1992: 258, n. 2).

Second mimetic process: imitating successful organizations

The second mimetic process includes organizations imitating other organizations in their population that are perceived as successful. Innovate leaders are often be found to be wealthy and large organizations. Small organizations often model these ‘leaders’, whereby they learn from the leaders’ experiences and become organizations that are favorable viewed by the society (Shipan & Volden, 2008, p. 843). Evidence is found for this argument (Burns and Wholey, 1993). Though, in some cases it is hard to identify which organizations are most prestigious, visible and most successful. Various criteria can be used to evaluate the performance of organizations e.g. profitability, stability, growth, output quality, survival, satisfaction of the participant (Scott, 1992, pp. 342-362). In any industry,

those organizations that are most profitable, will often be the models for the rest of the organizations in that particular field (Haveman, 1993, p. 598). Except of profitability, size is another factor that confers prestige and visibility. In Western societies, growth is highly valued which subsequently is linked to the value placed on large size of organizations. Then it is reasonable to assume that organizations of large size will operate as role models for other in their population operating organizations. Evidence is found in line with this argument. Based on the work of DiMaggio and Powell (1983), Mezias and Lant (1994) argue that institutional rules as 'imitating large organizations' drive changes in the strategies of organizations. Their conducted research showed that imitating the largest organizations in a particular population was a successful institutional rule. Survival chances of organizations increased when these organizations, under conditions of ambiguity, competition, environmental variability and costly search, imitated large organizations. A reason for this can be that large size is linked with visibility, and more visible organizations are expected to serve as role models for others (Scott, 1992: 258, n. 2 and Haveman, 1993, p. 599).

Derived from the theory, we hypothesize for **'variation within and between countries (region)'** that:

- *Hypothesis 3: The larger the average size of higher education institutions within the countries (region), the more variation we observe in the performance agreements of the higher education institutions within the countries (region).*

This hypothesis is based on the second mimetic process that states that organizations imitate those organizations that are perceived as more successful. Size and profitability are assumed to be the significant indicators here of successfulness of a particular organization. As the focus in this research is on public organizations, more specific HEIs, size of the organizations is the leading indicator of successfulness. Hypothesis 3 states that large sized HEIs do not imitate other HEIs, because they are already successful. The larger the average size of HEIs within a country (region), the more variation in the individual PAs between the HEIs within the country (region). Comparing the countries (region) on average size of HEIs, shows if there are differences in the adopted PBF systems between the countries (region). The country (region) with the largest average size of HEIs displays most variation in the individual PAs between HEIs within the country (region). So, hypothesis 3 can be applied for variation within and between the countries (region).

3 Methodology

This chapter presents the research methods. This methodological chapter discusses the research design (with an important role for the developed analytic framework), the case selection and time span and the data collections methods and data analysis.

3.1 Research methods

3.1.1 Research design

To provide an answer to the main questions, the research is split in a descriptive and an explanatory part. Before both parts and the chosen research methods are described, it is important to have a look at table 2 that presents our developed analytical framework. This analytical framework is based on appendix 2 'An introduction to PBF systems and performance agreements' and the theory of new-institutionalism. The developed analytical framework shows in the columns the investigated countries (region) and in the rows the characteristics of the PBF systems (first part of the table), the institutional characteristics (second part of the table) and the characteristics of the HEIs (third part of the table). Both countries (region) are examined on these different characteristics. This analytical framework is of importance for both the descriptive and explanatory part of this research which are described below.

	Spain (Catalonia)	The Netherlands
Characteristics PBF systems -Rationales (instrumental goals) -Distinction made with regard to the structure of HEIs -Specific individual PAs or a uniform PBF system -Ex-ante or ex-post funding -Gentlemen's agreements or legally binding -Qualitative and/or quantitative measures -Existing budgets or additional budgets -PBF procedures -Mandatory indicators and/or additional indicators -Kind of mandatory indicators -Clear stated achievement percentages for indicators -Other characteristics		
Institutional characteristics -Regulatory framework and governance of the HEIs -State tradition		
Characteristics HEIs -Mimetic behavior of different sized HEIs (look or have consultation with other HEIs)		

Table 2: Analytical framework

Descriptive part

First, a description is provided of the PBF systems for HEIs in Catalonia and the Netherlands (sub question 1). The scientific literature shows different characteristics of PBF systems; see appendix 2. The chosen forms of PBF systems by both countries (region) are described in terms of the literature. On the basis of different characteristics, a description of both PBF systems is provided; to have an overall, comprehensive and clear view of the PBF systems in both countries (region). These characteristics (selected from the literature) are summed up in the first part of table 2. In addition, for the case of the Netherlands (because of the applied individual PAs with each university), excel documents show the baselines and set ambitions for 2015 for each established performance indicator. For the case of Catalonia, different tables present the performance indicators. This gives a more specific and detailed description of the adopted PBF systems.

After I had collected all data, I described the PBF systems and completed the main characteristics in the first part of table 2; to provide a clear overview of the systems. Subsequently, a comparison was made between the PBF systems of the countries (region) and between the individual PAs of the HEIs within the countries (region). This study is a nested cross-sectional study (Babbie, 2010, p. 106) where the chosen PBF systems for HEIs were compared on one fixed point in time. So, nesting occurred on a single point of time. Academic literature, relevant documents of the higher education institutions and data obtained from interviews (see appendix 11 and 12 for the format of the interviews) were important sources to provide an answer to the first sub question.

Explanatory part

After I had completed the descriptive part, I executed and elaborated the explanatory part (sub questions 2 and 3). In the descriptive part, the PBF systems were determined (which is the dependent variable). After I had determined the differences and similarities in the adopted PBF systems between and within the countries (region), I used explanatory variables to explain the differences. These explanatory variables are: coercive mechanisms ((in) formal pressures) and mimetic mechanism, which are derived from the theory of new-institutionalism (Chapter 2 of this thesis). Characteristics of the country/region (coercive mechanisms) and characteristics of the HEIs (mimetic mechanisms) are the explanatory variables (sub questions 2 and 3).
The selected research methods for this section were: academic literature, document analysis, interviews (see appendix 11 en 12 for the interviews format) and observations. Academic literature was important for different aspects of the research (e.g. to explain concepts and theory). Document analysis is the study of recorded human communication such as books, documents and letters (Babbie, 2010, p. 333). Document analysis is a method for data collection involving the analysis of the content of written documents in order to draw conclusions (Babbie, 2010, p. 333). Universities and the government of Catalonia were asked to provide relevant documents. Documents are a reliable source and provide an explicit explanation. Interviews (Babbie, 2010, p. 254) are used as a complement to document analysis. Different questions were asked related to the descriptive and explanatory variables to managers of different public universities in Catalonia and managers/ directors of the government of Catalonia. These actors were reached by email and they were asked to participate in this research. I chose to conduct oral interviews instead of written interviews, because in this way, one could directly ask for more clarity when the answer of the interviewee was vague (Babbie, 2010, p. 286). Moreover, in oral interviews, a question can be asked in a different way

if the respondent does not understand the question (Babbie, 2010, p. 286). Further, observations were done for the variable organizational size.

After I had collected all data, I described the explanatory variables in both countries (region). Subsequently, the second and third parts of table 2 were completed. Then, explanatory analyses were implemented of each independent variable in conjunction with the dependent variable. On the basis of the found data, for each formulated hypothesis was decided if it should be rejected/accepted. For rejection/acceptation of the hypotheses a distinction was made for the comparison between the countries (region) and within a particular country. Finally, the conclusions, limitations and recommendations were elaborated.

Limitations of the chosen research methods

In light of reliability and validity, it is important to focus on the limitations of the chosen research methods and the way I have counteracted these limitations:

- A limitation of document analysis is that a research is, inter alia, dependent on the documents that managers/directors provide. I have tried to eliminate this limitation by means of asking in several ways for certain documents (Babbie, 2010, p. 344).
- Another limitation of document analysis and academic literature is that what is searched is not described in the documents and articles. I have counteracted this limitation by conducting interviews in addition to documents and articles analyses (Babbie, 2010, p. 344).
- In interviews, problems can arise when people lie or are affected by the interviewer (Babbie, 2010, p. 300). I have tried to eliminate this limitation by taking a natural and objective attitude and trying to ask for explicit explanations.
- At last, in interviews one is often strayed from the subject. I have tried to counteract this limitation by clarifying and emphasizing in advance the main topics (Babbie, 2010, p. 287).

3.1.2 Case selection and time span

The units of analysis are two countries (region), namely the Netherlands and Spain (Catalonia). The universities within each selected country (region) are investigated for their adopted form of individual performance agreements. The system of performance-based funding is nested within countries (region). For the Netherlands, all universities are investigated as they concluded individual performance agreements with the Dutch government. For the case of Spain (Catalonia), where a uniform system of performance-based funding is applied to all the universities, specific interviews were conducted with the Rovira I Virgili University, Pompeu Fabra University, Open University of Catalonia and the University of Barcelona. All public Catalan universities were approached to participate in this research. The four mentioned universities wanted to contribute to this research about performance-based funding. Interviews were also conducted with managers/directors of the government of Catalonia. The research focuses on one academic year.

3.1.3 Data collection methods and data analysis

Qualitative research is aimed at obtaining in-depth information, while quantitative research is focused on obtaining numerical information (Babbie, 2010, p. 394). This study is mainly a qualitative research. I used the qualitative data collection method (Babbie, 2010, p. 394): existing literature, documents and interviews (with open-ended questions) are central in the research.

After I had collected all the data, I combined, described and analysed the data. Data from different articles, documents and interviews were read and combined. The interviews were audio-recorded, after the permission of the participants. After, these recordings were listened and the interviews were elaborated. Then, I determined which fragments (texts that belong together) could be distinguished in these elaborated interviews. These fragments were coded to get a better overview of the interview (Babbie, 2010, p. 338). The main topics in the elaborated interviews were studied in detail. Additionally, relevant documents and articles related to the PBF systems of both countries (region) were also studied on the important topics**.** After I had studied all the important subjects in both interviews and documents and articles, I tried to sketch the best possible picture of the PBF systems for HEIs in both countries (region) and of the different explanatory variables. The analytical table presented in table 2, shows in a clear way the similarities and differences in the PBF systems for HEIs and on the explanatory variables between and within the Netherlands and Spain (Catalonia).

4 The PBF system for higher education institutions in Catalonia

This chapter describes the performance-based funding system of Catalonia and the performance-based contracts of the higher education institutions in Catalonia. The first section, focuses on the chosen form of PBF system for HEIs by Catalonia. The relevant aspects are: the structure of the HE system in Catalonia, the funding mechanism in the Catalan HE system and the PBF system in the Catalan university system. The second section focuses on the explanatory variables: coercive mechanism (formal pressure), coercive mechanism (informal pressure) and mimetic mechanism. The mechanisms are applied to the case of Catalonia. Finally, the third section gives an overview of (the context of) PBF in Catalonia.

4.1 The chosen PBF system for HEIs by Catalonia

4.1.1 Structure of the tertiary education system in Catalonia

For the structure of the tertiary education system in Spain (as a whole), see appendix 3. We focus here on the structure of the tertiary education system in Catalonia. There are 12 universities in Catalonia, distinguished into 8 public and 4 private universities. Of this total amount, 9 universities (5 public and 4 private) are located in the province of Barcelona. The other three universities are located in Tarragona, Girona and Lleida. One of the public universities that is located in the province of Barcelona is a distance-learning university (see figure 1 and table 3 for an overview) (OECD, 2010, p. 56). For the profiles of the Catalan universities, see appendix 6.

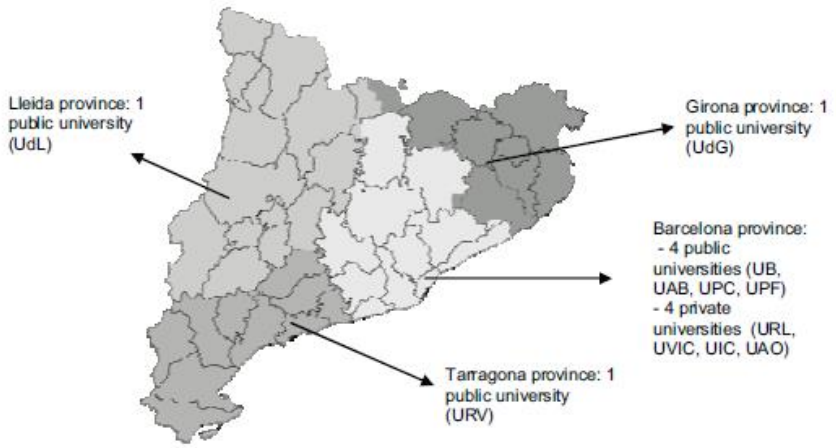

Figure 1: Overview universities in Catalonia, Spain (OECD, 2010, p. 57)

University	*Ownership*	*Region*
University of Barcelona	Public	Barcelona
Autonomous University of Barcelona	Public	Barcelona
Polytechnic University of Catalonia	Public	Barcelona
University Pompeu Fabra	Public	Barcelona
University of Girona	Public	Girona
University of Lleida	Public	Lleida
University Rovira i Virgili	Public	Tarragona
University Ramón Lull	Private	Barcelona
Open University of Catalonia	Public[8]	Headquarters in Barcelona
University of Vic	Private	Barcelona
International University of Catalonia	Private	Barcelona
University Abat Oliba	Private	Barcelona

Table 3: Overview universities in Catalonia (university-ownership-region) (Catalonia's Regional Steering Committee, 2010, p. 21).

The universities in Catalonia function in a co-ordinated system. The following elements play an essential role in this context (OECD, 2010, p. 58):

- The implemented funding model by the Department of Universities of the Regional Government of Catalonia for Public Universities serves as an instrumental tool for the management of the university system.
- The Quality Assurance Agency of Catalonia (AQU) provides an instrumental tool for the development and improvement of the education provided by the Catalan universities.
- The Public universities in Catalonia established the Association of Catalan Public Universities (ACUP). In practice, ACUP functions also under the name of 'University of Catalonia'. This association focuses on the development of a strategic plan for promoting and improving Catalan universities.

4.1.2 Funding mechanism in the Catalan tertiary education system

For the funding mechanism in the Spanish tertiary education system, see appendix 3. We focus here on the funding mechanism in the Catalan tertiary education system.
The autonomous communities are responsible for the public funding of higher education. Different competences are delegated to the Catalan government, including the control of dividing funding among the universities in the autonomous community of Catalonia. The Catalan University Plan and the University Funding programme are described in the LUC as the basic instruments for arranging the Catalan university system. Three types of funding mechanism are taken into account: general, open competition and complementary (by means of contract programmes). The idea behind funding of higher education institutions is that it increases equity, sufficiency, efficiency and effectiveness (Catalonia's Regional Steering Committee, 2010, p. 25).

The public universities of Catalonia (with exception of UOC), the Ministry of Education and Universities and the Ministry of Economy and Finances signed a proposal for a new funding system in 2006. This funding proposal foresaw that in 2010 the Spanish universities would more or less double their ordinary public funding compared to 2003 (Catalonia's Regional Steering Committee, 2010, p. 26). Further, as a reaction to the EU target to devote 3% of GDP to R&D activities and to stimulate the implementation of the EHEA in Catalan universities, the Government of Catalonia approved to allocate additional funding for the time span 2007-2010 conditioned to the achievement of strategic targets. In line with this agreement, between 2007-2010 the public funding of the universities would increase from €523 million in 2003 to € 1.032 million euro in 2010 (Catalonia's Regional Steering Committee, 2010, p. 26). Table 4 shows the funding resources for the Catalan public universities.

(millions €)	2003	2004	2005	2006	2007	2008	2009	2010
Prevision LUC	522.9	559.5	604.3	652.6	698.3	747.1	799.4	855.4
Special research agreements	7.3	7.7	8.3	8.7	9.1	9.3	9.8	10.3
Ordinary improvements (2004-2006)		19.2	2.4	21.0				
Additional improvement (2007-2010)					57.0	90.9	130.4	176.2
Not conditioned					40.0	40.0	40.0	40.0
Conditioned to objectives					17.0	50.9	90.4	136.2
Total	**530.2**	**586.4**	**615.0**	**682.3**	**764.4**	**847.3**	**939.6**	**1041.9**

Table 4: The funding resources for the public universities in Catalonia (Catalonia's Regional Steering Committee, 2010, p. 26).

4.1.2a The introduction of programme-contracts in the Catalan university system

Since 1997, a part of university public funding is based on performance by means of contract programme mechanism. Programme-contracts for a period of 4 years were introduced; it contained funding for HEIs based on a range of objectives. This shows a significant change in the approach of co-ordination and funding of the Catalan university. The government of the Catalonia came to an agreement with the universities to introduce a complementary system based on objectives for the university institutions, with evaluation of the results attained and funding based these results. This complementary system was perceived as an additional funding mechanism to the existing basic funding system. In 2000 and 2002, adjustments were introduced in the objective-based funding mechanisms, to increase competition and thereby quality and efficiency in areas as research and teaching (Catalonia's Regional Steering Committee, 2010, pp. 26-27 and Vilalta, 2001, pp. 10-14): Subsequently, the Catalan government applied a new system to allocate university financing, based on the following elements (Catalonia's Regional Steering Committee, 2010, p. 28 and File, 2006, p. 46):

- *Fixed funding;* similar for all the universities. This fixed funding covers the minimum structural expenses of a university that are necessary for its functioning.
- *Basic funding*; is based on common objective parameters and provides resources for the university's ordinary academic activity and linked functioning expenditures.
- *Derived funding*; these are funding intended for expenditures resulted from employment of research and teaching staff.
- *Strategic funding*; which are associated to specific quality objectives in connection with the strategy of the university.
- *Competitive funding*; for particular areas, especially research.

The funding derived from the programme-contracts is included within *the strategic allocation* to each university. The programme-contracts set out specific objectives in four different strategic areas (File, 2006, p. 47):

1. Teaching (the learning process and the education itself).
2. Research and technology-knowledge transfer.
3. University-society relations.
4. Internal organisation and management within the university to improve quality and accountability.

Two types of programme contracts can be distinguished in the Catalan higher education system (Vilalta & Brugué, 2005, p. 281):

-Type A: (programme) contracts for a four-year term. These specific contracts are mostly signed with universities that are well-established.

-Type B: (pre-) contracts for a three-year term. These specific contracts are mostly signed with universities that are recently established and are focused on solving the lack of material and human resources (not very ordinary present-day).

Each programme contract was based on the Government's specific university and research policy objectives and the individual university's Strategic Plan. From these two sources, diverse objectives were set out for each Catalan university. For every objective, basic lines of actions, a set of instruments and tools for the implementation of the objectives and diverse indicators, were determined. For each formulated indicator, the situation prior of the contract period and the values

that have to be attained for each determined contract year and at the end of the programme contract period were set out (Vilalta & Brugué, 2005, p. 281).
Subsequently, the extents to which the objectives are achieved are evaluated by means of these prior determined (mostly quantitative) indicators. Each programme contract involved an own weighting system. Different weights were linked to the diverse indicators within each objective. The objectives related to teaching, learning and research were given high priority and were perceived as most important objectives (Vilalta & Brugué, 2005, p. 283). The achievements are evaluated by the Autonomous Region of Catalonia and the representatives of the specific involved university (Monitoring Committee). After, the specific public funding is determined in line with the extent to which the objectives have been achieved. This system involves provision for an annual review of the established objectives conforms an evaluation of the contract's results, the development of the HE policy of the government and the universities' priorities (Catalonia's Regional Steering Committee, 2010, p. 28). See table 5 for an example of a programme-contract. Table 6 shows established objectives between the Ministry and different Catalan universities for the period 2002-2005.

	1997	2000
University graduates	3.418	5.126
University professors with PhD	45,3%	49,7%
Number of students in continuing education courses	4.672	8.296
Students with experience at business (practicum)	3.540	6.156
Average time for students to start working	---	2 months
Incomes by R+D activities	4.288	5.430
Research impact	320	535
Percentage of research self-financing	45,0%	52,15
Mass media impact at university activities	1.898	3.411
Incomes by companies agreements	1.509	2.345
International mobility at professors (in months)	82 months	210 months
Members at the University Association Friendship	1.304	2.627

Table 5: The programme contract between the ministry and the Technical University of Catalonia for the period 1997-2000 (Vilalta & Brugué, 2005, p. 287).

Objective	UAB	UB	UdG	UdL	UPC	UPF	URV
Improvement of the quality of education provided and effectiveness and efficiency of the system	X	X	X	X	X	X	X
Improvement of measures to attract and enrol new students	X	X	X		X		X
Improvement of research and in attracting competitive external funding	X	X	X	X	X	X	X
Development of mechanisms for technology-knowledge transfer and for promotion of R&D&I	X	X	X	X	X	X	X
Promotion of high-quality third cycle education and employment for doctoral graduates	X	X	X	X	X	X	X
Strengthening active career guidance for graduates and fostering links with former students	X	X	X	X	X	X	
Consolidating the use of Catalan and improving the university's linguistic competence in third languages	X	X			X	X	X
Participation in regional development via closer links between universities and local society				X	X		X
Strengthening the international dimension of academic activities, university mobility programmes and development cooperation	X	X	X	X	X	X	X
Improvement of the quality of management processes and optimisation of human and material resources, with support of ICTs	X	X	X	X	X	X	X

Table 6: Formulated objectives of the Programme Contracts between the Ministry – different Catalan universities for the period 2002-2005 (Vilalta & Brugué, 2005, p. 289).

4.1.2b Performance-based funding in the Catalan university system since 2008 (in practice)

A The performance-based funding system in Catalonia since 2008

Before an elaboration is provided of the PBF system for the public universities in Catalonia (since 2008), it is important to note that the Open University of Catalonia is different compared to the other public universities in Catalonia. For the Open University of Catalonia applies a different PBF system (see appendix 4 for information on this system).

The focus is here on the PBF system that applies to all other public universities. Of the total funding of the government to the universities: 85% is basic funding which is the same for all the universities; 8% is funding based on performance; 5% is funding based on cooperation with other universities; and 2% includes a programme from the government which applies for teachers (Interview Rovira i Virgili University, 2015 and Interview Catalan Government, 2015a).

However, some kind of performance-based indicators are also included in the basic 85% funding; but these are more indirect indicators (Interview Catalan government, 2015b). In our context, we focus on the 8% percent, the funding based on performance in a direct way. These 8% is divided in the following variables (Interview Catalan government, 2015a):

- Research variables; improvement of R&D: 45%
- Teaching variables; improvement of teaching: 35%
- Management variables; improvement in management: 20%

The system focuses on objectives and indicators in the three mentioned areas. The funding based on performance is established to increase the accountability and transparency of universities. From 2008, no individual performance agreements are concluded between the government and an individual university (Interview Catalan government, 2015a). In the time before 2008, each university had different needs and the particular state of the university differed. Subsequently, it was hard to have general parameters at that time, so there were specific targets for each university (depending on the state of the material for the funding programme) (Interview Catalan government, 2015b). At the moment, the Autonomous Community of Catalonia works in line with a more general system for all the Catalan universities (2008-current). The Catalan government works differently for the three mentioned variables, as the research variables are competitive variables and the others are non-competitive (Interview Catalan government, 2015a).

Role of research variables in the funding system

To start with the research variables, table 7 shows the objectives and indicators for research (as shown this is 45% of the funding based on performance). Table 8 takes a closer look at some indicators. These tables show how the indicators are measured, namely in terms of volume, quality and progress. The government evaluates every year what each university has achieved in terms of the research variables. On the basis of established indicators that apply to all universities (as shown in the figures), the achieved results of the universities are evaluated. The research variables are competitive, which means that the achievements of a university are compared to the achievements of other universities. Funding is based on this comparison. This is different from the teaching and management variables that are explained in more detail below (Interview Catalan government, 2015a).

Role of teaching variables in the funding system

For the teaching variables (as shown this is 35% of the funding based on performance) the government works according to a particular system. First, a kind of general 'pie' is established that is based on results of the universities in previous years. In this 'pie', the maximum amount is determined that each university can get in terms of funding based on performance in the teaching variables. The amount of this maximum part of a 'pie' a university can get is based on four variables (Interview Catalan government, 2015a):

- *Enrolled new students (20%)*
- *Registered credits (20%)*
- *Overcome credits (30%)*
- *Graduates (30%)*

For example, based on these four variables it is calculated that the University of Barcelona gets a maximum 32% of the total funding of the government based on performance in the teaching variables. All the universities have to focus on the same objectives and related indicators (see table 9) relative to their previous position (which shows the difference with the research variables) to receive the funding. Each university starts at a particular baseline for a particular teaching indicator. The government of Catalonia takes multiple steps in deciding if a university has achieved a particular indicator to the maximum and thereby providing in the end the established maximum funding to the university. The following steps are taken by the government to determine to what extent a university achieves a particular teaching indicator (this example is about the teaching indicator ´reduction abandonment´) (see also table 10) (Interview Catalan government, 2015a):

1. For each education programme the university offers is determined ´what is the percentage of students that stopped with this particular education programme´.
2. Subsequently, the government works in a kind of quartile system that orders ´the percentage of students that stopped with a particular education programme´. This quartile system is as followed: Q1: 9,67%, Q2: 12,73% and Q3: 15,19%. For example, the amount of students that stopped in the education programme *Public Administration* was 10%. This indicates that this education programme is ranked in Q2 (because this ranges from 9,67% - 12,73%). This ranking is done for all the offered education programmes by the university. Then, the number of education programmes in each ranking is added e.g. in Q1 there are 54 education programme ranked and in Q2 there are 20 education programmes ranked.
3. After, for each ranking in the quartile system a particular weight is given: Q1 = 1,2, Q2 = 1, Q3 = 0,8 and Q4 = 0.
4. The weight of each ranking and the number of education programmes that fall into that certain ranking are then multiplied with each other. For example, the weight of Q1 was 1,2 and the number of education programme that fall into that ranking was 54. 1,2 is then multiplied with 54 which give an amount of 64,80. This is done for all the four quartiles in the system.
5. The calculations of step 4 are then added up for all the four quartiles, which gives a particular number (in our example: 92,80).
6. In order to be able to compare the universities, the government works with percentages. The result in step 5 is divided by the total of education programmes that are ranked. This gives 92,80/119 = 77,98%.

These six steps are taken for all the teaching indicators. The result of the university in the example for the indicator ´reduction abandonment´ is then 77,98%; this shows that a maximum of 100 percent is not reached. Subsequently, the maximum weight of 25,1% in the total funding of teaching variables for the indicator ´reduction abandonment´ is not achieved. This leads to not getting the 32% part of the ´pie´ that is calculated in the beginning (in terms of maximum funding for teaching variables). To get the maximum funding, the university has to perform better on the indicator ´reduction abandonment´ by having a lower percentage of 'students who stop´ in the different education programmes. More education programmes have to be ranked in the quartile of Q1: 9,67% (where a higher weight is given to and so more funding) (Interview Catalan government, 2015a).

The government evaluates every year the achieved results of each university for each teaching indicator. So, when a university achieves for each indicator the maximum, they can get the maximum slide of the 'pie'. In our example, the University of Barcelona can get a maximum of 32% of the total funding of the government based on performance in the teaching variables. When the university performs less, they receive only a part of the established percentage. The remaining money will return to the Catalan funding system. The universities still receive the money but in an indirect way e.g. to implement some kind of specific programmes. The government calculates and provides the amount that the university gets every year in September (Interview Catalan government, 2015a).

Role of management variables in the funding system

Similar to the teaching variables, the following steps are taken for the distribution of funds based on the management variables (Interview Catalan government, 2015a):

1. On basis of the amount of a subsidy fixed basic distribution model, the maximum amount of funds for each university is determined.

2. Assessment of the indicators (see table 11); here is determined which part of total funds will be distributed to a university when the university scores 100% in the achievement of the indicators.

					Weight on the indicator		
Objective	**Weight**	**Sub objective**	**Indicator**	**Weight**	**Volume**	**Quality**	**Progress**
Enhance research capacity	**13,5% (30%)**	**Increase the involvement of PDI in R & D**	**1.1 Sections of live research**	**8,482%**	**70%**	**25%**	**5%**
		PDI participation in recognized groups	**1.2 PDI belonging to research groups recognized by the Generalitat de Catalunya (SGR groups)**	**0,000%**	**70%**	**30%**	**0%**

		PDI participating and leading European projects and major projects	1.3 Participation and leadership of European projects and major projects	3,534%	25%	70%	5%
Improve the ability to attract competitive resources	18% (40%)	Increase revenue by competitive procedures	2.1 Project income of competitive public calls	18,848%	70%	25%	5%
Increase knowledge transfer	13,5% (30%)	Increasing university funding without competitive procedures	3.1 Revenues from non-competitive projects R & D + i (contracts and services)	11,309%	70%	25%	5%
		Increase the knowledge degree protection	3.2 Income from license agreements and patents	1,414%	45%	50%	5%
		Creation of spin-off	3.3 University spin-offs created	1,414%	45%	50%	5%
	45% (100% only in R & D)			45% (in the total funding based on performance)			

Table 7: Competitively funds (since 2008) for research objectives and indicators distributed between 7 public universities according to the weight of the following elements (Document 1 Catalan government, 2014).

Indicator	Volume	Quality	Progress
1.1 Sections of live research	live sections	Sections living / potential	Var. Quality
1.3 Participation and leadership of European projects and major projects	Projects in which the University participates	Projects coordinated by the university	Var. Volumen
2.1 Project income of competitive public calls	Revenue from competitive public calls	Revenue from competitive public calls / PDI doctor TC	Var. Volumen
3.1 Revenues from non-competitive projects R & D + i (contracts and services)	Income from agreements and services	Income from agreements and services / PDI to TC	Var. Volumen
3.2 Income from license agreements and patents	Revenue from contracts and licenses	Revenue from contracts and licenses / Income uncompetitive	Var. Volumen
3.3 University spin-offs created	Spin-off created	Spin-off created / noncompetitive income	Var. Volumen

Table 8: Some established research indicators and their volume, quality and progress (since 2008) (Document 2 Catalan government, 2014).

	Weight
Improve efficiency rate	5,4%
reduction abandonment	25,1%
Improve performance	25,1%
Increase teachers dedication	10,0%
Reduce the number of studies is less than 30. (approx.). New	22,4%
Improve language skills	12,0%
Total	100%

Table 9: Teaching indicators (since 2008) (Document 3 Catalan government, 2014).

	Cutoffs				
Q1:	9,67%				
Q2:	12,73%				
Q3:	15,19%				
		Weight of the quartiles	**Studies**	**Weight x studies**	
		1,2	54	64,80	
		1	20	20,00	
		0,8	10	8,00	
		0	35	0,00	
		Total:	**119**	92,80	
		Valuation period:	**77,98% (92,80/119)**		

Table 10: Calculation of the achievement of the indicator 'reduction abandonment' (since 2008) (Document 4 Catalan government, 2013).

Budgeting by programs	Concrete and measurable objectives, with indicators of valuation, actions and responsibility.	**0,8%**
Establishment of budget programs	Analysis of deviations and advertising results.	**1,2%**
Memory, balance sheet and income economic-patrimonial results consolidated university group	According to the methodology collects General instruction Intervention account consolidation.	**2,0%**
Proportion of data files UNEIX sent on time.		**3,0%**
Actions to achieve the strategic objectives and financial balance.	Development of generic remaining / Memory of strategic actions.	**93,0%**
		100,0%

Table 11: Management indicators (since 2008) (Document 5 Catalan government, 2014).

B The government's view on the performance-based funding system for HEIs

The negotiations between the Catalan government and the Catalan universities

Various collective negotiations between the government and all the universities took place at the beginning of the PBF system. There are no/minimal negotiations between the actors at the moment (the system is now in operation for a while) (Interview Catalan government, 2015a). All negotiations are collective; there are more or less no individual negotiations between the government and each university. Each year in February, the government has a general meeting with all the managers or general-directors of the public universities and the Open University in the context of (performance-based) funding (Interview Catalan government, 2015b). However, in some cases the government negotiates with a university individually on the subject of performance-based funding. These negotiations have a more technical nature; to agree and review the indicators that are established and to ensure that they are measured well (Interview Catalan government, 2015b).

Future developments of the PBF system for higher education institutions in Catalonia

The government of Catalonia announced that they were working on a new funding system. The idea was to put it in practice in 2016. However, the elections of September make things uncertain (Interview Catalan government, 2015b). The current government of Catalonia holds the opinion that they need to move ahead, which means different directions as the following examples:

1. First, teaching and research in universities should be balanced in a more proper way (more like 50/50). The government is not able to distinguish the universities in Catalonia in universities and universities of applied sciences (like the Netherlands). However, the government of Catalonia is of opinion that they are certainly able to divide it in a way that some universities should be more research oriented and others more professional oriented. So, in the new proposed funding system, the government allows that some schools move into a professional or a more research direction (Interview Catalan government, 2015b).
2. In the current funding system there is some fixed amount of funding that is provided to all the universities. The government came to the conclusion that this fixed amount was too big; the smaller universities were better funded than the big universities (Interview Catalan government, 2015b).
3. Universities should be more internationally competitive focused on research objectives-indicators. The Catalan universities should also attract more foreign students and researchers (Interview Catalan government, 2015a).

C The universities' view on the performance-based funding system for HEIs

The negotiations between the Catalan government and the Catalan universities

The Pompeu Fabra University states that when there are general negotiations with all the universities, the influence of Pompeu Fabra University is limited because this university only represents 7% of the whole system (when you measure this system in terms of registered students). Pompeu Fabra University is very different from the rest of the Catalan universities in research. For instance, Pompeu Fabra University receives from the European Research Council an amount twice as large compared to the other Catalan Public universities; at the same time this university is so tiny compared to those other Catalan Public universities (Pompeu Fabra University, 2015).

Rovira i Virgili University points out that at the beginning of the (performance-based) funding system in 2008, there were a lot of negotiations with the government and all the universities together.

The PBF system was compared with other countries. The directors of all the universities and the government negotiated about different aspects and took decisions about important aspects.
They decided, among other things, how to divide the 8% funding based on performance indicators into 45% research variables, 35% teaching variables and 20% management variables. This university states that only for the teaching variables and the management variables, there were some individual negotiations about the specific position of a university. Universities had to send their planning including information about how to reach the variables of management and teaching. Subsequently, the government reviewed this. Rovira I Virgili University put forward that for the research variables, all important elements were established and there are/were minimal negotiations (Rovira i Virgili University, 2015).
The University of Barcelona also argues that there are no negotiations every year between the government and the universities; there were only negotiations at the beginning of the system. The negotiations are more collective with all the universities. This university claims that in some cases, the universities negotiate individually with the government e.g. when a particular indicator is not the best way to measure an objective. In line with the government of Catalonia, UB states that these individually negotiations were more negotiations on a technical level (University of Barcelona, 2015).

Future developments of the PBF system for higher education institutions in Catalonia
Pompeu Fabra University states that there should be more flexibility in e.g. the hiring system or promotion system. There is too much inflexibility in the current system. Another advice of the Pompeu Fabra University is to get rid of laws that limit the core aspects of the universities. Each university has to create proper laws, individual laws. This university argues that the government should grant more autonomy to the universities, with a supervision of the Parliament. The universities have to be more different; which is not possible in the current system that applies to all the universities equal (Pompeu Fabra University, 2015).
Rovira I Virgili University is of opinion that it is good that a part of the budget of the government is based on performance objectives. PBF creates more incentives for the universities to perform well and to be better. Though, this university suggests that more real objectives and linked indicators should be established. In the current system, the results a university has to achieve to get the maximum funding, is not specific stated. This university also argues that PBF should be more than 8% of the total funding . PBF should be seen as an 'extra' funding that universities will spend on other things than the ordinary expenses (Rovira i Virgili University, 2015).
The University of Barcelona thinks that the PBF system of the government has to distinguish between different universities. There should not be two funding systems, but some differences and characteristics of the universities have to be taken into account in the current system. The University of Barcelona agrees with the system of PBF; universities are more stimulated to improve some aspects of the intern processes. However, distinguishing between the smaller and bigger universities is important; 'you cannot treat these universities in the same way' (Interview University of Barcelona, 2015). At last, UB suggests that performance-based funding should be a bigger part of the total funding of the government to the universities (University of Barcelona, 2015).

4.2 The context of PBF in Catalonia

After providing a description of the PBF system for HEIs in Catalonia, we focus now on describing the explanatory variables (mentioned in Chapter 2.2.) for the case of Catalonia. The first part of this section elaborates the regulatory framework and governance of the Spanish and Catalan tertiary education system (coercive mechanism: formal pressures). In the second part, the state traditions are applied to the Spanish (Catalan) case (coercive mechanism: informal pressures). In the last part of this section, the focus is on the mimetic behavior of Catalan universities (mimetic mechanism).

Before the mechanisms are elaborated, it is important to note that the forms of these mechanisms in Spain (Catalonia) are influenced by the country´s public administration system and economy. A look at appendix 7, gives the reader an idea of what these characteristics look like in Spain (Catalonia).

4.2.1 Regulatory framework and governance of the tertiary education system

A Regulatory framework and governance of the Spanish tertiary education system

The 1978 (post-Franco) Spanish Constitution established the autonomy of universities and freedom of teaching as fundamental rights of the universities. The University Reform Act (LRU) of 1983 granted the autonomous status to the universities (though only within a regulatory framework) and transmitted considerable central system level governance responsibilities to the regional government. The most important characteristics of the LRU were (Mora and Vidal, 2005 and Jongbloed, De Boer, Enders & File, 2010, p. 573):

- More autonomy was granted to the universities with the capacity to develop their own curricula and programmes.
- Professors were a part of each university and did not belong anymore to a national body.
- Regional governments were granted the responsibilities for the universities.
- The higher education institutions began to get public credits as a lump sum and get more capabilities in allocating funds more internally.

The autonomous regions of Spain were granted wide responsibilities for HE involving, inter alia: the establishment of public universities and the identification of the private universities; financing the public HEIs, technology and science policies; and planning and co-ordination the university study programmes supply. However, the central government has the responsibilities over: the activities related to the standardization and issuing of academic and professional degrees; the establishment of basic university staff legal regulations; the general promotion and coordination of technical and scientific research; and the specification of the internal governance setting for public universities. This shows that it is important to have in mind that the university's autonomy in Spain is restricted within the mentioned framework (Jongbloed, De Boer, Enders & File, 2010, p. 573).

A new University Act, called the LOU act, was introduced in 2001. This act granted more responsibilities to the Spanish autonomous regions. In particular, the LOU act introduced specific adjustments to the legal structure of higher education involving the following aspects (Mora and Vidal, 2005 and Jongbloed, De Boer, Enders & File, 2010, p. 574):

- The inclusion of particular lay persons (in all cases a minority group) into the running of the university (Social Council).
- The rector is elected by a direct vote.
- The representation of the academic staff in the collegial bodies is increased, whereby the high students' representation is decreased.
- The precondition that academic staff get national qualifications before they are selected by the universities.
- The mandatory post hoc study programmes accreditation by Accreditation (ANECA) and the new National Agency for Quality Assessment.

So the legal framework for the Spanish educational system is determined at the central level. As a consequence, the basic structure of the Catalan tertiary education system is identical to any other place in the country. The Spanish central government is responsible for the entire coordination of the tertiary education system, the control and co-ordination of grants and scholarships and the international and European representation of the Spanish tertiary education system. Other activities, including the funding mechanisms are under the regional regulation. Differences can be observed in the organisation and performance of tertiary education in various regions in Spain, whereby some regions perform better than others (OECD, 2010, pp. 49-50).
A set of constitutional rules, organic laws and royal decrees regulate the Spanish tertiary education institutions. Additionally, the regional governments of the autonomous communities can add complementary legislation within the boundaries of their legal competences (Catalonia's Regional Steering Committee, 2010, p. 14 and OECD, 2010, p. 50). Formally, the Spanish universities are autonomous. However, many restrictions are imposed from the central and regional level e.g.: restrictions on the subject of the internal structure; salaries and the way academic staff is recruited; and the governance model. With regard to the public universities, the (none)- academic staff and the students elect the collegial bodies and the institutional governing positions. Most of the permanent (non)- academic positions and professors are public servants with rights and obligations set by the central Spanish government (OECD, 2010, p. 50 and Catalonia's Regional Steering Committee, 2010, p. 17). The private universities define their own internal rules and governance structure. Though, it has to be assured that the various groups within the university are represented in each internal governing body. Internal governing bodies with responsibility for academic issues should consist of a great part of research and teaching staff (Catalonia's Regional Steering Committee, 2010, p. 16).

Two bodies coordinate the Spanish university system: the Council of Universities *(Consejo de Universidaded)* and the General Conference on University Policy *(Conferencia General de Politica Universitaria).* The latter arranges, among other things, the general directives for the university policy, guarantees coordination with the EHEA and presents a biannual paper of the university system involving e.g. proposals to improve efficiency. The Council of Universities focuses on the academic aspects of the university system in Spain. The Council of Universities encourages academic co-operation, collaboration and coordination within the Spanish university system. It also develops perspectives on university policies which are transmitted to the education authorities.
The governance of the Spanish university system can be characterised as decentralized. The Minister of Education and the General Conference on University Policy set the regulatory framework at national level. The governments of the autonomous communities complement this with additional legislation. The role of the Ministry with regard to the finance of the universities is restricted. The

autonomous communities hold this particular responsibility with the exception of the part of the investment in development and research and the national student scholarships system (Catalonia's Regional Steering Committee, 2010, pp. 14-15).
For extra information about other important actors in developing the university policy at the Spanish central level and internal governance within Spanish HEIs, see appendix 5.

B Regulatory framework and governance of the Catalan tertiary education system

The Catalan Universities' Act (Llei d'Universitats de Catalunya; after this it is called LUC) was passed in 2003 (as the LOU functions as the Spanish Universities Act, the LUC functions as the Catalan Universities Act). The LOU act gives the autonomous regions the opportunity to introduce their own acts. The introduction of the LUC in 2003 was aimed at structuring the university system in Catalonia, boost the university funding and create a regulatory framework for contracting the teaching staff. The important features of the Catalan university system are regulated by LUC e.g. funding, policies aimed at quality assurance, social participation, research, policies focused on academic staff. It is important to note that one of the measures to be adopted comprised a modification of the total budget to increase it eventually up with 30%. This measurement was a direct reaction to the need for extra funds for the application of the Bologna Process and the priorities shifts (which are now focused more on innovation and research conforming to the Lisbon targets) (Catalonia's Regional Steering Committee, 2010, 25).
The Department for Innovation, Universities and Enterprises in the Catalan government is in charge of the issues related to HE in Catalonia, and acts like a Ministry at regional level since 2006. This department includes a particular Commission for Universities and Research which is a representative of the Department in university and research matters. This Commission has the responsibility over directing, planning and executing policies in the mentioned areas (Catalonia's Regional Steering Committee, 2010, 25).

Various Spanish (Catalan) experts indicated that the governance model of the universities has to change. The CYD report shows that increasing the universities autonomy, transparency and evaluation will only be possible with the introduction of other criteria linked to the way the universities should be governed; whereby this element becomes a crucial part of the (governance) reform process (CYD, 2008). The following aspects should be change in the governance model of the universities (OECD, 2010, p. 50):

- Decreasing the level of regulation of the Spanish university system.
- Establish councils or governance broads with an enlarged presence of members that come from outside the particular university.
- Strengthen the executive bodies´ power, more specific the power of the rectors and their management teams.
- The professionalization of the university management should be increased.
- Adjust the functions of the collegiate bodies that represent the academic community e.g. the academic broad of the senate.
- Expand the autonomy of universities on the subject of recruitment of teaching staff.
- The freedom and autonomy of universities should be increased in terms of the access and the choices that are available to students, the teaching offers, the enrolment costs and the fees that the public universities charge.

C The government's view on the regulatory framework and governance structure

Autonomy of the Catalan universities in formulating the objectives and the linked indicators

In first instance, the government set the objectives and the indicators that the universities have to achieve. The government of Catalonia indicates that the universities could give their opinion about these established objectives and indicators to which the government will listen. For the reason that there are only a few public Catalan universities, the government state that the universities can have influence on the system of performance-based funding. However, the government points out that it has more power in setting the objectives-indicators than universities in the negotiations (Catalan government, 2015a and Catalan government, 2015b).

The legal framework related to the PBF system

About the Catalan regulatory framework, the government of Catalonia states that the LUC law is not very restrictive and it is very basic. The LUC considered that there would be individual performance agreements between the government and each university. Though, the government indicates that the LUC is very open and the government can decide on their own what kind of system to implement in the context of PBF (Catalan government, 2015a and Catalan government, 2015b). On the other hand, the government of Catalonia calls the Spanish law very 'restricted' in different aspects as attracting the staff (Catalan government, 2015a). The Catalan government wants to bypass the Spanish law in some cases, but they indicate that this is difficult. For example, in Spain a lot of professors are civil servants and in Catalonia not, what leads to different problems with the law (Catalan government, 2015b).

D The universities' view on the regulatory framework and governance structure

Autonomy of the Catalan universities in formulating the objectives and the linked indicators

Pompeu Fabra University states that some years ago there were some negotiations in the context of formulating the objectives and the indicators. At the moment there are no possible changes in this system; the indicators did not change for several years. This university is of opinion that they have limited influence in establishing objectives and the linked indicators (Pompeu Fabra University, 2015). Rovira i Virgili I University put forward that the government proposes the objectives and the linked indicators, where the university can give her opinion on. This university indicates that the government and universities have equal power in formulating the objectives and the linked indicators (more or less 50/50) (Rovira i Virgili I University, 2015). University of Barcelona indicates that before this system of PBF was applied, the government negotiated with all the universities on this subject. There they listened to the suggestions of the universities and subsequently changed some indicators. Though, once the objectives and linked indicators were established, it was very difficult to change them. A reason for this was that changing one indicator influences the other indicators. In general, University of Barcelona argues that the universities have restricted autonomy in the formulation of the objectives and indicators; the PBF system is more closed (University of Barcelona, 2015). Finally, the University Oberta de Catalunya (Open University) put forward that formulating the objectives and the linked indicators is always a negotiation between the university and the government. The government of Catalonia starts with proposing different indicators and subsequently a negotiation between the parties will start. Normally, this university agrees with the proposed indicators by the government. They are of opinion that they have at least the possibility to discuss this topic with the government (University Oberta de Catalunya, 2015).

The legal framework related to the PBF system

Pompeu Fabra University points out that the Catalan legal system depends on the Spanish legal system. The Catalan legal system can basically offer a few variations. This university is of opinion that the Spanish and Catalan legal systems are very restrictive. If those both systems were removed from their extreme details, this university will perform much better. As this university argues 'the Spanish and Catalan law are extremely coercive, it restricts you in many aspects e.g. the hiring system, promotion system and salaries' (Pompeu Fabra University, 2015). Rovira I Virgil University has problems with the Spanish legal framework. They view this legal framework as very coercive on different aspects. The legal framework in Catalonia is not perceived as that coercive (Rovira I Virgil University, 2015). University of Barcelona argues that the law states that the government has the whole power over the financial model to universities. The only obligation that the government has (imposed by the law) is to ensure the basic financing of the universities. UB indicates that the Spanish and Catalan law do not say something about the way the (performance-based) funding system should be designed. Subsequently, the government of Catalonia designed their system of PBF. The only thing that the law prescribes is about subjects as salaries, the way teaching is offered and the expenses of the universities (University of Barcelona, 2015). At last, the University Oberta de Catalunya is of opinion that the university system is quite regulated. The UOC states that they do not have enough autonomy in terms of putting new offers on the market. The UOC always has to get approval of the government for different actions. They feel like this restriction does not make sense: 'universities should have more autonomy and freedom of decisions in order to improve the quantity and quality of different aspects' (University Oberta de Catalunya, 2015).

4.2.2 The Spanish state model and administration culture

The Spanish state experienced a long authoritarian regime and not succeed in that time in sustaining a stable democratic political system. The Spanish state is also less developed in the context of the economy than other Western European countries. Moreover, politics often were dominated by the conflict between the conservative patrimonial parties and the progressive Liberal. This conflict between the right and left political forces set the base for strong influences of the communists (Kickert, 2008, p. 225). In addition, legalism and formalism strongly dominated in the Spanish administration. The greatest number of civil servants in Spain is administrative lawyers. Historically, formalism and legalism were introduced as a counter equilibrium against political intervention. This still applies in the highly politicized administrations in the Southern European countries. Legalism and formalism are the main reasons for the inefficiency and rigidity of the bureaucracy in the Southern European countries. Management reforms, which are actually based on economic reference frame in terms of efficiency and effectiveness, are incompatible with the legal reference frame in term of legal accountability (Kickert, 2008, pp. 225-226). Though, there remains a legalistic monopoly, because management reforms have to be defined in juridical terms in order to be legally authorized (Kickert, 2006). The most important factor in the Spanish administrations is politicization. This is in contrast to the Nord- Western European countries where qualified professional run a highly professional, neutral and rational administration (Sotiropoulos, 2006). Moreover, the relations between bureaucrats and politicians, political control of administration, party patronage and clientelism and political nominations of officials differ from the political practice in other countries of Western Europe (Kickert, 2008, p. 226).

Until 1978, the Napoleonic state model dominates for the state model of Spain whereby: the state serves the interest of the society; the state is united; the existence of a centralized, uniform,

accountable, hierarchical and controlled administration; there is a cultural homogenization; there is a standardized system; and there are qualified and highly trained state officials which are often organized in corps of professions (Wright, 1990 and Wunder, 1995). Organizations were/are more regulated by a Napoleonic state control form. For example, universities were organized as state agencies which were totally regulated by regulations and laws imposed by the central state (OECD, 2009, p. 60). With regard to the features of the Napoleonic state model, several of these features were imported from the model of France in the time of the nineteenth century. As an illustration of these features: the already mentioned legalism; the significant role of the civil servants ;and the importance of the administrative law which operates as a distinct body regulating the citizens´ duties and rights, protecting the citizen of the excessive action of the public administration and regulating the public life in Spain. The establishment of the Autonomous Communities led to eroding or more developing of some of these features, whereby resources and power over these elements were delegated to the Autonomous Communities (Parrado, 2008 and Colino & Del Pino, 2011, p. 359). After 1978, the state model of Spain showed some features of the Germanic state tradition. Recent transformations in the Spanish state lead to new power redistribution and the traditional state institutions in Spain has been rescaled. Spain established a new modern welfare state to wiggle out the system of the last thirty years. Consequently, the regions and the local governments are now in control of a great part of the public expenditure (approximately >50 %) and also dispose of a high amount of public employees in Spain (approximately 73%). For this reason, the Spanish state system shows a mix of elements of the Germanic state tradition and the Napoleonic state tradition (Loughlin and Peters, 1997 and Colino & Del Pino, 2011, p. 359). However, various features of the Napoleonic state tradition remained deep-rooted in the established Autonomous Communities. Napoleonic characteristics as a centralized administration at the capitals at regional level and legalism continued as important aspects in the Spanish state. The political organization in the Spanish state developed in the direction of a federation. The decentralization form developed thereby from asymmetrical delegation in direction to a form of cooperative federalism with joint revenues and competences in various areas of policy, alongside minimum local autonomy (Aja, 2001). Even though, there has been a delegation process in Spain, the central government kept control. The government kept control in terms of being a restricted legislative actor and having an own implementation network for particular policies as public order, infrastructures, tax collection and infrastructure (Loughlin and Peters, 1997 and Colino & Del Pino, 2011, p. 359).

4.2.3 Mimetic behavior of Catalan universities

Our hypothesis derived from the mimetic mechanism is based on the second mimetic process. This second mimetic process states that organizations imitate those organizations that are perceived as more successful. Size and profitability are assumed to be significant indicators of successfulness of a particular organization. In our study, size of the organizations is the leading indicator of successfulness. The size of all Catalan universities is set out in table 12 based on the following 4 characteristics: amount of students including undergraduate (first and second cycle) and postgraduate (Master and PhD); academic and research staff; faculties and schools; and research centres and institutes. To make more reliable statements based on the gathered data, the characteristics ‘amount of students’ and ‘faculties and schools’ are used for calculations.

A The size of the Catalan universities

Universities Catalonia	Amount of students; including undergraduate (first and second cycle) and postgraduate (Master and PhD)	Academic and research staff (in persons)	Faculties and schools	Research Centres and institutes
University of Barcelona (UB)	56.567	5.312	19	30
Autonomous University of Barcelona (UAB)	34.244	3.629	14	27
Polytechnic University of Catalonia (UPC)	33.894	2.431	17	16
University Pompeu Fabra (UPF)	17.204	558	8	7
University of Girona (UdG)	15.056	1.155	10	11
University of Lleida (UdL)	10.074	997	9	5
University Rovira i Virgili (URV)	14.037	921	12	14
University Oberta de Catalunya (UOC)	43.362	372	-	2
University Ramón Lull	14.661	1.110	14	3
University of Vic	5.909	536	6	4
International University of Catalonia (UIC)	4.401	242	8	5
University Abat Oliba	1.386	<50	5	5

Table 12: Size of the Catalan Universities

Important to note: unless otherwise stated, all data corresponds to the academic year 2012-2013. See Appendix 8 for the references of the numbers of each category (the way the numbers are calculated are also described there).

B The universities' view on imitating other universities

The Pompeu Fabra University (a relative small university; with her total amount of students of 17.204 and 8 faculties and schools) indicates that there are a lot of consultations between the universities. This university has a good relationship with the other Catalan universities; which are formal and informal of nature. The consultations include conversations about the performance e.g. which performance is important and what to do in the future (Pompeu Fabra University, 2015).
Rovira i Virgili I (a relative medium university; with her total amount of students of 14.037 and 12 faculties and schools) argues that at the beginning of the PBF system, this university looked at the other universities and discussed with them about this system. At the moment, this is not the case anymore (Rovira i Virgili I University, 2015). Further, the relative large University of Barcelona (with her total amount of students of 56.567 and 19 faculties and schools) put forward that this university has sometimes consultations with others on the data that is used for the system of PBF. There are some meetings with the universities on this subject (University of Barcelona, 2015). At last, the special case of the University Oberta de Catalunya (Open University) (relative large university; with an amount of 43.362 students) which pointed out that the OUC does not look at the other public Catalan Universities. Though, the government of Catalonia asked this university to be more comparable with the others in terms of ranking of the universities. Subsequently, this university is pushed to have more consultations with the others (University Oberta de Catalunya, 2015).

4.3 Overview of (the context of) PBF in Catalonia

Table 13 shows the main characteristics of the PBF system in Catalonia, the institutional characteristics and characteristics of the Catalan HEIs.

	Catalonia
Characteristics PBF systems	
-Rationales (instrumental goals)	-Increase universities' accountability and transparency.
-Distinction made with regard to the structure of HEIs	-This region only speaks in terms of universities.
-Specific individual PAs or a uniform PBF system	-A uniform PBF system.
-Ex-ante or ex-post funding	-Ex-post funding (provided each year).
-Gentlemen's agreements or legally binding	-Gentlemen's agreements.
-Qualitative and/or quantitative measures	-Most indicators are quantitative.
-Existing budgets or additional budgets	-Existing budgets (PBF is 8%).
-PBF procedures	-PBF procedure: negotiations are at the beginning of the PBF system.
-Mandatory indicators and/or additional indicators	-Only mandatory indicators are applied.
-Kind of mandatory indicators	-Examples are: increase teachers' dedication and improve efficiency rate.
-Clear stated achievement percentages for indicators	-There are no clear stated achievement percentages for indicators. HEIs have to be ranked for the achievements percentage for each indicator in a higher ranking of the quartile system to receive more funding.
-Other characteristics	-Research indicators are competitive. -Teaching indicators are measured in terms of the universities' previous position. -8% funding based on performance is divided in research (45%), teaching (35%) and management variables (20%). -No clear division is made between conditional and selective funding in the PBF percentage.
Institutional characteristics	
-Regulatory framework and governance of the HEIs	-The law is coercive in various aspects of the HEIs. The universities have also minimal to medium autonomy in the formulation of the objectives and the indicators.
-State tradition	-Napoleonic state tradition.
Characteristics HEIs	
-Mimetic behavior of different sized HEIs (look or have consultation with other HEIs)	-HEIs of all sizes have consultations with the other HEIs in Catalonia; relative large universities are not 'leaders' for the smaller ones.

Table 13: Analytical framework completed for Catalonia

5 The PBF system for higher education institutions in the Netherlands

This chapter describes the performance-based funding system of the Netherlands and the performance-based contracts of the higher education institutions in the Netherlands. The first section focuses on the chosen form of PBF system for HEIs by the Netherlands. The relevant aspects are: the structure of the tertiary education system in the Netherlands, the Dutch policy context in the context of HE and the Dutch funding model with a significant role for performance agreements. The second section focuses on the explanatory variables: coercive mechanism (formal pressure), coercive mechanism (informal pressure) and mimetic mechanism. These mechanisms are applied to the case of the Netherlands. Finally, the third section gives an overview of (the context of) PBF in the Netherlands.

5.1 The chosen PBF system for HEIs by the Netherlands

5.1.1 The Dutch higher education system

In the Netherlands is a binary higher education system, which consists of two types of subsectors that are funded by the Dutch government:

1. Research universities (18 in total, including an Open University) (see appendix 9).
2. Universities of Applied Sciences (38 in total).

Of the total amount of students, one third (circa 230.000 students) attends the research universities and two thirds (circa 414.000 students) attends the Universities of Applied Sciences.

3. Private higher education institutions (69 in total).

The private higher education institutions are not publicly funded which also conduct minimal research (CHEPS, 2015, p. 27).

5.1.2 The Dutch policy context related to higher education

The Dutch higher education institutions perform quite well on research achievements and in terms of resources. The scientific publication of the Dutch universities are also of high quality (this is showed by citation impact rates and the amount of grants obtained from funding agencies e.g. of the European Framework Programme). However, the Dutch government showed concerns about the quality of the provided education, with discontent about the relative high student dropout rate and about the rates of finished students. A lack of differentiation is often indicated as a main cause of these negative results. It is argued that there is insufficient differentiation between the higher education institutions (CHEPS, 2015, p. 27).

5.1.3 The Dutch funding model

The Dutch public funding of the research universities and Universities of Applied Sciences was for a long time basically based on a formula funding, consisting of a combination of input funding (the amount of student and historical allocations) and performance-based funding elements (amount of degrees at Bachelor's, Master's and PhD levels).

A The introduction of the performance agreements

In 2012, the publicly funding of higher education institutions has been reformed. Since that year, a small part of funding for Dutch higher education institutions has been based on performance agreements. Before 2012, the funding was insufficiently in line with the strategic goals of the higher education institutions. The national goals were for some institutions too ambitious and thereby not realistic, and for others not challenging enough. The funding model did not challenge the HEIs to make their own strategic choices.

So, the Dutch government started to implement a new form of contract funding. Mainly on the basis of recommendations of the Committee on the Future Sustainability of the Dutch Higher Education System (also called the Veerman Committee), a new contract form came into practice. The then responsible education minister established the Veerman Committee in 2009 (CHEPS, 2015, p. 27). This committee was of opinion that the Dutch higher education institutions were not able to contribute to the government's ambition to be amid the most competitive knowledge economies. Except of a too high dropout rate at the universities, there was a minimum flexibility in the system to serve the different demands of the students and the labour market and student's talent was not challenged enough. The most important recommendation of the committee was that a long-term strategy is required to improve the quality and the variety of the Dutch higher education. Thereby, higher education institutions should be motivated to strengthen their profile on the base of their strengths in research and education, should be encouraged to provide more differentiated programmes and should be given more space for the selection of students. Furthermore, the committee advised a gradual cutback in the part of student-based funding in favour of funding based on mission. A relative good performance of the institution that aligns with the chosen mission of the institutions was to be rewarded (CHEPS, 2015, pp. 27-28).

Mission based funding was operationalised through a performance contract that demands higher education institutions to make clear agreements with the government considering their performances in making their education that they provide better. Thereby a multiple differentiation was to be achieved (CHEPS, 2015, p. 28):

1. Differentiation with regard to structure (research universities versus universities of applied sciences).
2. Differentiation between higher education institutions (a various set of institutional profiles).
3. Differentiation in the matter of educational offerings (motivating students to make a more well-thought choice of a particular degree programme; make it for HEIs possible to choose students to study in their organization and higher education institutions providing their own selection of degree programmes.

The report of the Veerman Committee was to a great extent accepted by different actors: the minister, the higher education institutions, the students, the employer organisations and the parliament. Various points of the committee were adopted in the Strategic Agenda for Higher Education, Research and Science of the ministry that was brought out in July 2011. This Agenda showed the essential to strengthen the strategic dialogue and reform the system of funding. Performance agreements had to be made with the universities individually. The main emphasize was on improving quality and profiling of the higher education institutions (CHEPS, 2015, p. 28).

These activities (performances) were to be rewarded in terms of financial resources. A reserve was made for this component; approximately a percentage of 7% in the Dutch funding model. Decided

was that these 'performance agreements' were an experiment that will be evaluated after a so called first round (period of 2013-2016) before they officially become part of Dutch law (CHEPS, 2015, p. 28).

The two associations (of the universities and the universities of applied sciences) and the Ministry of Education signed a general agreement in December 2011. The universities and the universities of applied sciences promised to sharpen and enhance their profiles and participate into performance agreements to work on the following elements (CHEPS, 2015, p. 28):

- Improving of the performance and quality in education (reduce the student dropout rates, increase the students graduation rates, increase teacher quality, invest in teaching intensity, provide honours education and cut overheads).
- Investing in more variation in their educational offers (in terms of level, breadth, contents, link to strategic preferences in national innovation policy and connected to the European grand challenges).
- Strengthen the research profile (establishing mass and focus in research).
- Strengthen the higher education's status internationally and the research' societal and scientific influence.
- Focus more on knowledge exchange (valorisation) (knowledge should be converted into commercial achievable products, services and processes).

B The performance agreements proposals

The higher education institutions were not bounded to a specific prescribed format for the strategic plan. Though, there were two requirements for the strategic plan: not exceed the maximum of 40 pages and objectives should be defined for 2015 for seven indicators (see below) linked to the goal of improving educational performance (CHEPS, 2015, p. 29).
The Dutch Higher education institutions submitted their proposals (also indicated as a profile document) in May 2012, for a performance agreement for a period of four years with the Dutch ministry. Each higher education institution numerated in the individual proposal their individual ambitions for the period of 2012-2015. These ambitions relate to: improving educational performance, enhancing the universities education and research profile and expanding the influence and application of the universities' research (including academic and practice-oriented research). The proposals included both quantitative and qualitative aims (CHEPS, 2015, p. 29).

As mentioned, the size of the budget for the performance agreements is 7% percent of the total annual Dutch funding for higher education institutions for the period of 2013-2016. This percentage is made up of (CHEPS, 2015, p. 29):

- 5% for a conditional budget. This budget is conditional on the entering of the performance agreement. When the defined 2015 goals are attained, this conditional budget is carried on after 2016.
- 2% for a selective budget. This budget is a competitive fund, where more funding is allocated to universities that submitted the 'best' proposals for the performance agreements. Thereby, 'best' proposals should be interpreted with regard to concentration and differentiation.

The seven indicators that are summed up in each proposal cover subjects as the performance of teaching, committed and superior actions of the universities. The defined indicators in the proposals are (CHEPS, 2015, p. 29 and Review Committee, 2012):

1. Completion rate of Bachelor students.
2. Drop-out rate of students (after the 1st year of a particular study programme).
3. Shift in the study in the first year.
4. A quality or excellence indicator.
5. Teacher quality.
6. Intensity of the education (e.g. the amount of face-to-face hours each week in the first year).
7. Indirect costs (e.g. overhead costs).

There were two ways to indicate the fourth indicator 'education excellence'. First of all, a higher education institution can apply as an excellence indicator 'the students' participation in excellence routes'. These routes can refer to specific routes that are acknowledged in the context of programmes for which a particular institution already was given subsidies. The routes can also regard to routes that still have to be elaborated by the institutions (these kinds of routes have to be explicit mentioned in the proposal). Second, the higher education institution can select from additional other indicators that stand for 'education quality': the results with regard to the scores of the institution in the National Student Survey or the accreditations agency's ratings of a degree programme of the institution (for example by the NVAO agencies) (CHEPS, 2015, p. 29).

C An independent Review Committee

The submitted proposals by the institutions were evaluated by an independent Review Committee (which was appointed in January 2012). This committee gave grounded advices to the Minister of Education after evaluation. The committee's opinion is of main importance; the Minister often signed PAs with those institutions whose proposal has been evaluated positively by the Review Committee (CHEPS, 2015, p. 29). Each proposal was given a score by the Review Committee, on the base of the following criteria (CHEPS, 2015, p. 30):

- The higher education institution's ambition (focused on the level of ambition and on how realistic these ambitions are).
- Alignment of the proposal (the proposal beneficence to inter/national policy targets concerning diversification and fit with the innovation agenda at National and European level).
- Feasibility of the proposal (if the proposals for differentiation and concentration are executable, e.g. in combination with specific plans).

The higher education institutions got a score for each of the mentioned criteria on a five-point ranging from insufficient-excellent. The second criteria, alignment of the proposal with the inter/national policy goals, got a double weight-factor in the cumulated score. The Committee scored the proposals of the higher educational institution in the setting of the examined institution (e.g. the institution's background, regional environment, and the student population) (CHEPS, 2015, p. 30). For the judgements of the review committee on the proposals of the Dutch universities, see appendix 9.

The Review Committee submitted his evaluation to the minister in November 2012. Subsequently, the minister converted these scores into a specific performance budget. As mentioned above, this performance budget composed of: 5% conditional funding and 2% selective funding. Being in possession of a performance agreements was seen as a precondition to get their financial portion (which is based on the enrollments of students) of the 5% conditional funding (over the period 2013-2016). The other budget, the more competitive one (2%), was mostly given to institutions that received very high scores for their proposal.
The minister used various factors to convert the evaluation scores into a performance budget: general scores that illustrate 'excellent', 'very good' and 'good', proposals were converted into the factors 5, 3 and 2 respectively. Thereby, the institutions that got a score of 5, got a performance budget that is 2,5 times higher than institutions that could be of the same size but got a 'good' for their proposal (CHEPS, 2015, p. 30).

Around 66,7% percent of the universities got a higher budget than they would have received if the quality and profile budget had been allocated in the system prior to the performance agreements. Compared to 2012, the university with the largest positive difference in this context received an amount of € 3.5 million more in 2013. The university with the largest negative difference in this context got an amount of € 1.5 million less in 2013 (CHEPS, 2015, p. 30).

D Performance agreements experiences and effects

The Dutch government concluded performance agreements with all public higher education institutions. This means that the proposals of all the higher education institutions were judged positively; they were all of sufficient quality. Further, the Review Committee monitors annually the institutions' progress on the performance objectives. In 2013, the first monitoring report was published (CHEPS, 2015, p. 30 and Review Committee, 2014a). The Review Committee initiated a mid-term review in 2014; to decide if the selective funding of 2% should be pursued in the last two years of the determined period of four years for the performance agreements.
In 2016, the Review Committee will evaluate the higher education institutions on the extent to which the institutions achieved the targets. When a particular higher education institution does not meet some of its goals, it loses a part of its conditional budget for the following four years. When a higher education institution does not meet the established 2015 targets for the seven indicators for quality in education and study success, the institution receives less or none of the conditional funding for the period of 2017-2020 (CHEPS, 2015, p. 31).
The first experiences with these performance agreements show that this instrument should be seen as an innovative approach. Performance agreements are applied, among other things, as a way to distinguish between the HEIs and to improve education quality and student success. As the biggest amount of the budget of a higher education institution is still based on a uniform formula (is partly directed by indicators of performance), a small amount of the budget is allocated conditional on performance. This gives the Dutch Minister of Education the opportunity to award budgets more on quality and to distinguish between the various institutions. In the mid-term review of 2014, the Review Committee stated that the higher education institutions received the instrument of performance agreements positively. These performance agreements operated as an agenda setting instrument and as an external stimulus to achieve change in the institutions (CHEPS, 2015, p. 31 and Review Committee, 2014b).

Consequences of the agreements were that they foresee an instrument for the Dutch Ministry to place significant subjects on the agenda; especially those that are summed up in the report of the Veerman Committee. This shows that the performance agreements have the potential for the minister to address the national agenda. In addition, these performance agreements are to some extent proceed at the level of the institutions. The institutions select goals that are based on indicators; these indicators are to some extent from a list of prescribed indicators and partly based on their own selection of extra indicators and targets (CHEPS, 2015, p. 31). This shows that in the individual PAs, there remained space for the institutions for own interpretation. Higher education institutions were, by means of these performance agreements, indirectly forced to focus more on the teaching quality. The higher education institutions face different difficulties in the context of performance agreements. An example in this context is the question 'in which way to combine the rise of completion rates with the guarantee of a stable inflow of new students'. There are some negative feelings expressed about performance agreements; mostly about the bureaucracy that surrounds the agreements e.g. in terms of the rise of accountability requirements. However, most of the higher education institutions see the performance agreements as a helpful instrument in assisting them to emphasize more on their strengths and to stimulate internal reforms (CHEPS, 2015, p. 31).

The future of the performance agreements is unclear. A recent development in the Dutch support system for student is that students have to contribute more to their education costs. As a consequence of this development, there will be additional financial resources available for the sector HE. The Dutch Parliament accepted these reforms in the student support systems, provided that the extra funds would be invested in improving of the teaching and learning quality. To ensure this main idea, in addition to PAs, the instrument of Quality Agreements is taken into consideration as an instrument to make certain that HEIs work on achieving the stated ambitions (CHEPS, 2015, p. 31). So, the performance agreements and the quality agreements are still in development and it is still not decided if and in which way both instruments will be integrated in the higher education policy. However, what is sure is that in the upcoming years the discussion about the bilateral contracts between the Dutch Ministry and the higher education institutions will go on.

5.1.4 Variation in the PBF system for HEIs within the Netherlands

As mentioned, the universities in the Netherlands concluded individual performance agreements with the Dutch government. The similarities and differences in the individual PAs between HEIs within the Netherlands are described in more detail below.

Similarities in the individual PAs between HEIs within the Netherlands

General similarities

- In the proposals of each Dutch higher education institutions (for both universities and universities of applied sciences) seven indicators are included: completion rate of Bachelor students, drop-out rate of students, shift in the study in the first year, a quality or excellence indicator, teacher quality, intensity of the education and indirect costs (Excel Dutch Universities; Total, 2015).
- There were two ways to apply the indicator quality/excellence, namely by means of WO1 'the students participation in excellence routes' or WO1b 'Students Opinion about the

education programme in general'. Most universities have chosen to apply WO1 for the indicator quality/excellence (Excel Dutch Universities; Total, 2015).

Similarities in the baselines for the mandatory indicators

- The baseline in WO1'the students' participation in excellence routes' is more or less similar for the universities that have chosen this option to indicate the indicator quality/excellence; this is between 1%- 9% (Excel Dutch Universities; Baselines, 2015).
- The baseline in WO1B 'Students Opinion about the education programme in general' is more or less similar for the universities that have chosen this option to indicate the indicator quality/excellence; this is between 80,5%-88% (Excel Dutch Universities; Baselines, 2015).
- The baseline in WO2 'Study success: Drop-out' is more or less similar for all the universities; this is between 11,1%-24,4%. Exceptions are Protestant Theological University (with a baseline of 32%) and Theological University for the Reformed Churches (with a baseline of 0%) (Excel Dutch Universities; Baselines, 2015).
- The baseline in WO3 'Study success: Switch' is more or less similar for all the universities; this is between 3%-13%. This indicator is not applicable for the Protestant Theological University, Theological University Apeldoorn, University for Humanistic Studies and Theological University for the Reformed Churches (Excel Dutch Universities; Baselines, 2015).
- The baseline in WO7 'Measures: Indirect costs' is more or less similar for all the universities; this is between 11,25%-21,8%. Exceptions are Theological University Apeldoorn (with a baseline of 35%), University for Humanistic Studies (with a baseline of 28%) and Theological University for the Reformed Churches (with a baseline of 29,9%)(Excel Dutch Universities; Baselines, 2015).

Similarities in the set Ambition for 2015 for the mandatory indicators

- The set ambition for 2015 for the indicator WO1 'the students participation in excellence routes' is more or less the same for the universities that have chosen this option to indicate the indicator quality/excellence; this is between 5%-13% (Excel Dutch Universities; Ambitions 2015, 2015).
- The set ambition for 2015 for the indicator WO1b 'Students Opinion about the education programme in general' is more or less the same for the universities that have chosen this option to indicate the indicator quality/excellence; this is between 80,5%-85% (Excel Dutch Universities; Ambitions 2015, 2015).
- The set ambition for 2015 for the indicator WO2 'Study success: Drop-out' is more or less similar for all the universities; this is between 13%-25%. An exception is Theological University of the Reformed Churches that has an ambition of 6% (Excel Dutch Universities; Ambitions 2015, 2015).
- The set ambition for 2015 for the indicator WO3 'Study success: Switch' is more or less similar for all the universities; this is between 6%-11% (Excel Dutch Universities; Ambitions 2015, 2015).
- The set ambition for 2015 for the indicator WO6 'Measures: Education Intensity' is similar for all the universities; this is all 0% (Excel Dutch Universities; Ambitions 2015, 2015).
- The set ambition for 2015 for the indicator WO7 'Measures: Indirect costs' is more or less similar for all the universities; this is between 11,25%-21%. Exceptions are Theological University Apeldoorn (with a baseline of 32,5%), University for Humanistic Studies (with a baseline of 25%) and Theological University for the Reformed Churches (with a baseline of 28%) (Excel Dutch Universities; Ambitions 2015, 2015).

Similarities in the additional indicators

- The indicator 'maintain/increase the number of promotions' is adopted by Tilburg university, Radboud University Nijmegen, Eindhoven University of Technology, Maastricht University and Leiden University (Appendix 9, 2015).
- The indicator 'the percentage of public research resources spent on valorization' is adopted by Leiden University, Erasmus University Rotterdam, Utrecht University, Tilburg University and VU University Amsterdam (Appendix 9, 2015).

Differences in the individual PAs between HEIs in the Netherlands

Differences in the baselines for the mandatory indicators

- The baseline in WO4 'Study success: Bachelor effectivity (re-registering returns)' is dissimilar between the universities. For example, the University of Twente has a baseline of 39% and Maastricht University a baseline of 78% (Excel Dutch Universities; Baselines, 2015).
- The baseline in WO5 'Measures: Teacher Quality' is dissimilar between the universities. For example, Utrecht University has a baseline of 60%, Tilburg University a baseline of 4, 5% and Delft University of Technology a baseline of 7% (Excel Dutch Universities; Baselines, 2015).
- The baseline in WO6 'Measures: Education Intensity' is dissimilar between the universities. For example, University of Groningen and Delft University of Technology have a baseline of 0%, Erasmus University Rotterdam has a baseline of 50% and the Protestant Theological University has a baseline of 100% (Excel Dutch Universities; Baselines, 2015).

Differences in the set Ambition for 2015 for the mandatory indicators

- The set ambition for 2015 for the indicator WO4 'Study success: Bachelor effectivity (re-registering returns)' is dissimilar between the universities. For example, Maastricht University set an ambition of 80%, Delft University of Technology and Eindhoven University of Technology set an ambition of 55% and University of Twente set an ambition of 60% (Excel Dutch Universities; Ambitions 2015, 2015).
- The set ambition for 2015 for the indicator WO5 'Measures: Teacher Quality' is dissimilar between the universities. For example, Eindhoven University of Technology set an ambition of 25%, University of Groningen and Leiden University set an ambition of 80% and the University of Twente set an ambition of 45% (Excel Dutch Universities; Ambitions 2015, 2015).

Differences in the additional indicators

- Most of the additional indicators of the universities are different of each other. For example, Erasmus University Rotterdam has adopted additional indicators as 'expansion of the honor programs' and 'increasing of the KP7 grants' and the University of Groningen has adopted additional indicators as 'At least 12 patent licenses per year' and 'introducing of the learning communities in 6 faculties' (Appendix 9, 2015).

5.2 The context of PBF in the Netherlands

After providing a description of the PBF system for HEIs in the Netherlands, we focus now on describing the explanatory variables (mentioned in Chapter 2.2.) for the case of the Netherlands. The first part of this section describes the regulatory framework and governance of the Dutch tertiary education system (coercive mechanism: formal pressures). In the second part, the state traditions are applied to the Dutch case (coercive mechanism: informal pressures). In the last part of this section, the focus is on the mimetic behavior of Dutch universities (mimetic mechanism).

Before the mechanisms are elaborated, it is important to note that the forms of these mechanisms in the Netherlands are influenced by the country´s public administration system and economy. A look at appendix 7, gives the reader an idea of what these characteristics look like in the Netherlands.

5.2.1 Regulatory framework and governance of the tertiary education system

The most important HE act in the Netherlands is the WHW. Different chapters of this act cover, among other things, the Universities, Dutch governmental funding and accountability to the universities, accreditation and staff and personnel. The HE system of the Netherlands is characterized as a binary system composing of two programme types: education that is research-oriented offered by Universities and professional HE offered by Universities of Applied Sciences. The WHW is an extensive legislation that deals with diverse topics. Nevertheless, the WHW still manages to give autonomy to the HEIs within the established legal frameworks. From the establishment of the WHW in 1992, this legislation has dramatically changed; what has an enormous impact on the governance structure of the Dutch Universities and Universities of Applied sciences. The institutional autonomy of the universities is expanded (Huisman & Hendrinks, 2013, pp. 208-209).
The WHW distinguishes between different types of HEIs; there are government-funded Universities of Applied Sciences (*hogescholen*), Universities (*universiteiten*) and a specific HEI for distance learning which is called the Open University (*Open universiteit*). In addition, there are private institutions which are not funded by the Dutch government, also called 'legal entities for higher education' *(rechtspersonen voor hoger onderwijs)* (Huisman & Hendrinks, 2013, p. 210). The Netherlands has thirteen universities which are funded by the government, consisting of ten public Universities and three private Universities. Public and private Universities should be distinguished, because of the different applicable laws. Government-funded Universities conduct research and provide education to students in various disciplines as economics, law, medical and agriculture (Huisman & Hendrinks, 2013, p. 210). In contrast to the Universities; the Universities of Applied Sciences are all private institutions that are funded by the government. These institutions provide theoretical and practical training for students for various professions that require higher vocational qualifications. Universities of Applied Sciences can be characterized as general and specialized institutions. The programmes offered by the Universities of Applied sciences are more practical than this is the case for the Universities (Huisman & Hendrinks, 2013, p. 210).

Formal autonomy of the Dutch universities

The relation between the Dutch government and the HEIs is characterized by high autonomy; the government solely develops the right conditions (European Commission, 2014). Public sector reforms have taken place which were mainly aimed at giving public organizations, including HEIs, more

autonomy from the government. This was a strategy to improve the HEIs' performance (Enders, Weyer, & de Boer, 2013, p. 6). Autonomy refers to the actors having the capacity or ability to rule on their own and being independent from external control (Enders, Weyer, & de Boer, 2013, p. 7).

Low to moderate institutional governance autonomy

Since the act '*Versterking besturing'* was put into effect, the WHW creates only one central contract point for the Government, which was the Governing Board *(instellingsbestuur).* Article 1.1 sub j of the WHW states that the Governing Board of publicly funded institutions is also the Executive Board, unless otherwise noted. In private institutions *(legal entities of HE)* it varies what and who the Governing Board is. The Executive Board *(College van Bestuur)* in a particular publicly funded University executes the administration of the institution. For Universities of Applied Sciences and government-funded private Universities, the Executive Board is that body that is appointed as written in the articles of the institutions. The Universities of Applied Sciences and the government-funded private Universities are both private entities (Huisman & Hendrinks, 2013, p. 214).

The governance of the publicly funded Universities is described in chapter nine of the WHW. The powers and responsibilities within a particular public funded University lies at the Executive Board, unless the law authorized other bodies. The Executive Board has, inter alia, powers in areas as organization structures, in establishing financial statements and budgets, staffing, student policies and the final responsibility for education quality (Huisman & Hendrinks, 2013, pp. 214-215).

The Executive Board in a particular publicly funded University is accountable to the by Minister of Education appointed Supervisory Council *(Raad van Toezicht)*. Different rules apply for government-funded private Universities. The WHW points out that the Executive Board creates the framework of the institution´s governance structure and the degree to which students and employees can engage. While the Executive Board has some space for own interpretation, they still have to work in line with the established legal regime for publicly funded Universities. A maximum conformity with the legal framework is a requirement for funding of the government. The law is inflexible concerning the governance structure of HEIs. Somewhat different regulations apply for the Universities of Applied Sciences e.g. the Minister does not elect in these institutions the members of Supervisory Council (Huisman & Hendrinks, 2013, p. 215). An important difference between Universities of applied Sciences and Universities is that the organizational bodies in research Universities dispose of independently assigned power as deans and faculties. For the private institutions (legal entities of higher education) there are no regulations influencing their organizational concept (Huisman & Hendrinks, 2013, p. 215). To conclude, in general the level of *institutional governance autonomy* of the universities is relatively low to moderate (Enders, Weyer, & de Boer, 2013, p. 12).

Significant autonomy in the context of human resource management

Dutch universities have obtained autonomy in the context of *human resource management*, because the Dutch government minimized the detailed regulations and rules. Dutch universities have the power to decide on their own the amount of academic posts and select persons they prefer. Though, the autonomy of the university remains limited by cause of other mechanism and actors. Different labour conditions as salaries are set by collective negotiations between the unions and the national employer association, followed by negotiations at local level between the local unions and the individual university. The Universities are legally bonded to the national level set Collective Labour Agreements that consist of e.g.: agreements on job appraisals and promotions procedures, minimum and maximum salaries, detailed descriptions of career ladders and positions of staff. Managerial

discretion is also bound to other general legal rules comprising hiring and firing in the public service. An increase in the managerial discretion can be observed, though this is restricted within the national regulations and rules (Enders, Weyer, & de Boer, 2013, p. 11).

Considerable autonomy in managing financial affairs and low financial autonomy
The decision-making capabilities of the Universities on the subject of *managing financial affairs* are significant. The universities can decide in which way the public operational grant is spend, lend money from the capital market, establish the tariffs for the contract activities, transmit resources that are unspent from one year to the following and build up reserves. Furthermore, the Dutch universities can set up and adjust rules for international budget allocation, create their own managerial tools for targets for budget allocation or internal PAs or arrange internal competition for particular budgetary parts. Though, Dutch universities cannot take decisions as regards to tuition fees for Bachelors and Masters Programmes (Enders, Weyer, & de Boer, 2013, p. 12).
The Dutch universities' *financial autonomy* has changed the recent years by cause of a moderate trend regarding diversification of the income. As stated, the universities receive almost two-third of their budget from the government. The universities' dependency on this income flow is high. As shown, there are conditions attached to this income with reference to funding by the number of students and an associated element to subsidize basic funding for research. Income diversification arises due to shifts of governmental money for research to the research council and other bodies working on governmental research programmes. This includes that nowadays the universities are less dependent on the direct funding of the government, while actors as the ministries have obtained control over some portions of the funding to universities (Enders, Weyer, & de Boer, 2013, p. 12).

Low interventional autonomy
At last, Dutch universities dispose of a low interventional autonomy since they are confronted with different requirements related to *ex-post* reporting. They are obliged to have an internal and external evaluation system for research and teaching. The universities have the autonomy to choose the methods concerning the evaluation system, although a national agency will evaluate these chosen methods. Their activities have to be reported in annual reports and audited financial statements. The teaching programmes are accredited by an intermediary agency. Moreover, there are also external research sponsors (as the European Commission of the government) that set their own requirements related to reporting that can differ from loose procedures to strict prescriptions. This is an external control that is laid down on the university (Enders, Weyer, & de Boer, 2013, pp. 12-13).

As shown, in some cases the Dutch universities dispose of a lot of autonomy. However, one should have in mind that formal autonomy does not always reflect the factual autonomy of the Dutch universities. Appendix 10 focuses on this topic.

5.2.2 The Dutch state model and administration culture

First of all, an important feature of the state in the Netherlands is that the Dutch democracy is characterized by consensus (Lijphart, 1984). In the Netherlands there is a multi-party system with proportional elections whereby the government comprises of coalitions including multiple political parties. An example of a coalition in the Netherlands is between the conservative Liberals, the Social-democrats and the Christian-Democrats. A main aspect of the Dutch political culture is the search for consensus and compromises. The existence of a consensus democracy explains for a great part the

political stability in the Dutch society. Furthermore, the Dutch state-society relation is characterized as a neo-corporatist type of democracy. With a neo-corporatist type of democracy is meant that a few persons which are recognized by the state (often groups that are well-organized) represent the interest of the society. These few persons dispose of state authority and implement various public tasks (Williamson, 1989). Moreover, it is important to highlight the Dutch type of society. The Netherlands consist of fragmented social and political subcultures. The pillarization in the Netherlands is a good example of this, which consisted of Catholics, Protestants, Liberals and Socialists (Kickert, 2008, p. 226).

Furthermore, there is a clear sub-national government structure in the Netherlands. Within this country there is a three level system: the central government, the provincial government and the local government (that is composed of municipalities). However, next to these three levels, there are the water broads who are responsible for the quality of the water and the water management. In addition, there are municipality cooperations at the regional level that mostly have important tasks in the context of service delivery or operate as forums of deliberation (Heinelt & Kübler, 2005, p. 135). In spite of the layer system that the Netherlands has, uniformity is central within this state. The relation between the different government levels can be characterized as organic and cooperative. The municipalities in the Netherlands have more or less comparable political structures and tasks. In line with the distinction of state traditions of Loughlin (1993), the Germanic state tradition can be applied for the Dutch state. Also some aspects of the Napoleonic state tradition influenced the Dutch state e.g. the role of the mayor at the municipalities and of the Commissioner of the King at provincial level. Even though the formal state structure of the Netherlands is in line with the Napoleonic state tradition and derives from the years of the Napoleonic occupation, the Constitution of 1848 gave these structures and the actual administrative culture more Germanic organicist influences. The relation between the Dutch state, the provinces and the municipalities is more similar to relations as that in a federation than that of a hierarchical dominant state (Heinelt & Kübler, 2005, p. 135 and Athanassopoulou, 2007, p. 191). This all shows that the Dutch state is more affiliated to the Germanic state tradition. The Dutch decentralized unitary state has the following features (Heinelt & Kübler, 2005, pp. 135-136):

- *The relation between the levels of governments can be described as interdependent.* The relations between the different levels of government are not based on an explicit division of powers and are not undoubtedly hierarchical.
- *The municipalities have an autonomous position.* Municipalities dispose of a general competence. The open households of the provinces and municipalities are constitutionally secured.
- *The provinces apply supervisory powers over the municipalities.* The central government exercises the same powers over the provinces. Supervision means here more approving of local initiatives or leastwise not any resistance, thereby not meaning real ´commanding´.
- *There is a unitary state.* Unitary here is not similar to centralization. The state has a unitary character in terms of the uniformity of the welfare state´s public services e.g. the amount of income compensation is not contingent on the city where someone lives. The local government must adhere to the imposed policy guidelines from the central government.
- *The most used instrument is co-governance.* After deliberation with the local governments and their representative associations, the central government makes and enforces laws. The implementation of these policies is done by the local authorities. Different co- governance types can be distinguished: mechanistic co-governance (barely any possibilities for municipalities to

adjust the national policies) administrative co-governance (municipalities can adapt national policies within rigid restrictions) and political co-governance (municipalities are obliged to develop particular policies but have the freedom to decide about the contents of these policies).

-*There is a system of decentralization*. Municipalities are to a certain level autonomous. In particular policy areas where the municipalities' tasks consist for a great part of implementing central policies, they dispose of a large extent of policy freedom which is based on knowledge, information, local presence and discretionary competencies.

5.2.3 Mimetic behavior of Dutch universities

As mentioned, our mimetic hypothesis is based on the second mimetic process including organizations imitate organizations that are perceived as more successful. In this study, organizational size is the leading indicator of successfulness. The size of all Dutch universities is set out in table 14 based on: amount of students including undergraduate (first and second cycle) and postgraduate (Master and PhD); academic and research staff; faculties and schools; and research centres and institutes. Minimum information is found on the extent to which different sized Dutch universities imitate other different sized Dutch universities. For this reason, mimetic hypothesis 3 for variation within the country cannot be rejected/accepted; the case of the Netherlands is excluded from this perspective.

The size of the Dutch universities

Universities Netherlands	Amount of students; including undergraduate (first and second cycle) and postgraduate (Master and PhD)	Academic and research staff (in persons)	Faculties and schools	Research Centres and institutes
Leiden University (LEI)	21.357	1.147	7	29
University of Groningen (RUG)	28.035	2.059	10	>40
VU University Amsterdam (VU)	24.517	2.978	12	28
Delft University of Technology (TUD)	17.530	2.491	8	23
Eindhoven University of Technology (TU/e)	7.611	1.792	9	8
Erasmus University Rotterdam (EUR)	22.827	1.031	7	20
Maastricht University (UM)	15.924	2.158	6	36
Utrecht University (UU)	29.755	3.528	7	>30
University of Amsterdam (UvA)	29.594	2.486	7	48
Radboud University Nijmegen (RU)	18.101	2.806	7	18
Tilburg University (TiU)	12.952	1.240	5	44
University of Twente (UT)	9.313	1.684	5	26
Wageningen University (WUR)	8.248	1.555,4	6	11

Table 14: Size of the Dutch universities

Important to note: unless otherwise stated, all data corresponds to the academic year 2012-2013. See Appendix 8 for the references of the numbers of each category (the way the numbers are calculated are also described there).

5.3 Overview of (the context of) PBF in the Netherlands

The main characteristics of the PBF system in the Netherlands and the institutional characteristics are completed in the developed analytical framework; see table 15.

	The Netherlands
Characteristics PBF systems	
-Rationales (instrumental goals)	-To improve quality and profiling of HEIs.
-Distinction made with regard to the structure of HEIs	-This country speaks in terms of universities and universities of applied sciences.
-Specific individual PAs or a uniform PBF system	-Individual performance agreements are concluded with the HEIs.
-Ex-ante or ex-post funding	-Ex-ante funding (PAs valid for 4 years).
-Gentlemen's agreements or legally binding	-Gentlemen's agreements.
-Qualitative and/or quantitative measures	-Most indicators are quantitative.
-Existing budgets or additional budgets	-Existing budgets (PBF is 7%).
-PBF procedures	-PBF procedure: the HEIs submit their PA proposals. Subsequently, evaluated by a review committee on the base of different criteria.
-Mandatory indicators and/or additional indicators	-Mandatory and additional indicators are applied. The HEIs can select these additional indicators on their own.
-Kind of mandatory indicators	-Examples are: completion rate of Bachelor students and drop-out rate of students.
-Clear stated achievement percentages for indicators	-There are clear stated achievement percentages for indicators.
-Other characteristics	-Research indicators are measured in terms of the universities' previous position. -Teaching indicators are measured in terms of the universities' previous position. -7% funding is not divided in different percentage for different kinds of indicators. Most mandatory indicators are related to education quality and study success. -PBF is distinguished between 5% conditional funding and 2% selective funding.
Institutional characteristics	
-Regulatory framework and governance of the HEIs	-The law is minimal to moderate coercive. The universities have a high level of autonomy in the formulation of the objectives and the indicators.
-State tradition	-Germanic state tradition.
Characteristics HEIs	
-Mimetic behavior of different sized HEIs (look or have consultation with other HEIs)	- (Not enough information found).

Table 15: Analytical framework completed for the Netherlands

6. Analyses of PBF in Catalonia and the Netherlands

This chapter focuses on explaining the variation in adopted PBF systems between and within the countries (region).The first section addresses the extent to which the variation in the adopted PBF system within the countries (region) can be explained by institutional characteristics and characteristics of the HEIs. The second section discusses the extent to which the variation in the adopted PBF systems between the countries (region) can be explained by institutional characteristics and characteristics of the HEIs.

Table 16 shows the main characteristics of the PBF systems, the institutional characteristics and characteristics of the HEIs; similarities are bold and indicated with a dark blue color, differences are light and indicated with a black color. Table 16 leads us to the answer for the question if the formulated hypotheses for the variation in the adopted PBF systems between and within the countries (region) should be rejected or accepted.

	Spain (Catalonia)	The Netherlands
Characteristics PBF systems		
-Rationales (instrumental goals)	-Increase universities' accountability and transparency.	-To improve quality and profiling of HEIs.
-Distinction made with regard to the structure of HEIs	-This region only speaks in terms of universities.	-This country speaks in terms of universities and universities of applied sciences.
-Specific individual PAs or a uniform PBF system	-A uniform PBF system.	-Individual performance agreements are concluded with the HEIs.
-Ex-ante or ex-post funding	-Ex-post funding (provided each year).	-Ex-ante funding (PAs valid for 4 years).
-Gentlemen's agreements or legally binding	**-Gentlemen's agreements.**	**-Gentlemen's agreements.**
-Qualitative and/or quantitative measures	**-Most indicators are quantitative.**	**-Most indicators are quantitative.**
-Existing budgets or additional budgets	**-Existing budgets (PBF is 8%).**	**-Existing budgets (PBF is 7%).**
-PBF procedures	-PBF procedure: negotiations are at the beginning of the PBF system.	-PBF procedure: the HEIs submit their PA proposals. Subsequently, evaluated by a review committee on the base of different criteria.
-Mandatory indicators and/or additional indicators	-Only mandatory indicators are applied.	-Mandatory and additional indicators are applied. The HEIs can select these additional indicators on their own.
-Kind of mandatory indicators	-Examples are: increase teachers' dedication and improve efficiency rate.	-Examples are: completion rate of Bachelor students and drop-out rate of students.
-Clear stated achievement percentages for indicators	-There are no clear stated achievement percentages for indicators. HEIs have to be ranked for the achievements percentage for each indicator in a higher ranking of the quartile system to receive more funding.	-There are clear stated achievement percentages for indicators.

-Other characteristics	-Research indicators are competitive. **-Teaching indicators are measured in terms of the universities' previous position.** - 8% funding based on performance is divided in research (45%), teaching (35%) and management variables (20%). -No clear division is made between conditional and selective funding in the PBF percentage.	-Research indicators are measured in terms of the universities' previous position. **-Teaching indicators are measured in terms of the universities' previous position.** -7% funding is not divided in different percentage for different kinds of indicators. Most mandatory indicators are related to education quality and study success. -PBF is distinguished between 5% conditional funding and 2% selective funding.
Institutional characteristics **-Regulatory framework and governance of the HEIs** **-State tradition**	 -The law is coercive in various aspects of the HEIs. The universities have also minimal to medium autonomy in the formulation of the objectives and the indicators. -Napoleonic state tradition.	 -The law is minimal to moderate coercive. The universities have a high level of autonomy in the formulation of the objectives and the indicators. -Germanic state tradition.
Characteristics HEIs **-Mimetic behavior of different sized HEIs (look or have consultation with other HEIs)**	 -HEIs of all sizes have consultations with the other HEIs in Catalonia; relative large universities are not 'leaders' for the smaller ones.	 -(Not enough information found).

Table 16: Analytical framework completed for Catalonia and the Netherlands

6.1 Explaining the variation in PBF within the countries (region)

6.1.1 Explaining the variation in PBF within Catalonia

For the variation in the PAs between the HEIs within Catalonia; two hypotheses are important. Hypothesis 1 is derived from the coercive mechanism: formal pressure. Hypothesis 3 is deduced from the mimetic mechanism. We hypothesized that:

- *Hypothesis 1: The less coercive the national legal framework for higher education (e.g. laws related to education and funding) within the countries (region), the more variation we observe in the performance agreements of the higher education institutions.*
- *Hypothesis 3: The larger the average size of higher education institutions within the countries (region), the more variation we observe in the performance agreements of the higher education institutions within the countries (region).*

Hypothesis 1 (variation explained by institutional characteristics): not rejected

No individual performance agreements are applied in Catalonia; there is a uniform PBF system that applies to all the universities. HEIs cannot adopt own chosen indicators or set own ambitions for particular indicators in individual performance agreements in Catalonia.

Documents, articles and interviews showed that the legal framework for the Spanish educational system is established at the central level. The LOU act that is introduced at the Spanish level, gives the autonomous communities in Spain (including Catalonia) more responsibilities in different aspects. Funding mechanisms are counted under the regional regulation and responsibility. The LUC act was introduced at the regional level (Catalonia) that regulates e.g. the funding. Formally, it is stated that the Spanish universities are autonomous. However, various limitations are imposed from both central and regional level. In general, the imposed formal pressures in Spain (Catalonia) can be characterized as moderate to high coercive.

The Catalan universities are of opinion that they are restricted in their actions by the law (mostly by the Spanish law). The Spanish and Catalan law do not suggest something about the design of the (performance-based) funding system. This uniform system is designed by the government of Catalonia. As the universities have minimal to medium autonomy in the formulation of the objectives and the indicators (the government has the final say in this) and the law is very coercive in various aspects of the HEIs, we can assume that this factor has an influence on the chosen uniform PBF system for higher education institutions in Catalonia. Based on the gathered data from documents, articles and interviews, we can assume that hypothesis 1 can be accepted to explain the uniform performance-based funding system for HEIs within Catalonia.

Hypothesis 3 (variation explained by characteristics of the HEIs): rejected

First of all, as already stated, there is no variation in the PAs of HEIs within Catalonia, because of the chosen uniform PBF system. Different universities of different size were interviewed for the case of Catalonia. All universities (except of the special case of University Oberta de Catalunya) indicated more or less that they have consultations with other universities and/or looked in some cases at the other universities in the context of PBF. This shows that the size of the universities did not influence the adoption of different elements (e.g. own set indicators) in the set PBF system in Catalonia. The small, medium and large universities all indicated that there are consultations between the different universities. Thereby, the University of Barcelona (UB) as largest Catalan university, with her total amount of students of 56.567 and 19 faculties and schools, is not the main innovate ´leader´ for the

smaller universities as Pompeu Fabra University that was expected to imitate this ´leader´ in terms of PBF. All universities of different sizes influence each other. Based on the gathered data from documents and interviews, we can assume that hypothesis 3 can be rejected for the case of variation in the adopted PBF system within Catalonia.

6.1.2 Explaining the variation in PBF within the Netherlands

For the variation in the PAs between HEIs within the Netherlands; one hypothesis is of importance. Hypothesis 1 is derived from the coercive mechanism: formal pressure. We hypothesized that:

- *Hypothesis 1: The less coercive the national legal framework for higher education (e.g. laws related to education and funding) within the countries (region), the more variation we observe in the performance agreements of the higher education institutions.*

Hypothesis 1 (variation explained by institutional characteristics): not rejected

There is some variation in the performance agreements of the HEIs within the Netherlands. As shown, the Dutch government concluded individual performance agreements with each Dutch higher education institutions. All these individual PAs include seven similar mandatory indicators. The baselines and the set ambitions in, inter alia, the indicators WO1 'the students' participation in excellence routes', WO2 'Study success: Drop-out', WO3 'Study success: Switch' and WO7 'Measures: Indirect costs' are more or less similar among the universities. Though, baselines and set ambitions differ in indicators as WO4 'Study success: Bachelor effectivity (re-registering returns)' and WO5 'Measures: Teacher Quality'. Most differences can be found in the adopted additional indicators by the universities.

The WHW is the most important higher education act in the Netherlands. The relation between the Dutch government and the HEIs is characterized by a high autonomy; though with the Dutch government as most important actor in setting the rules and providing funding. Analyses of articles and documents showed that the HEIs in the Netherlands dispose of the following levels of autonomy: a low to moderate institutional governance autonomy, a significant autonomy in the context of human resource management and in managing financial affairs, low financial autonomy and low interventional autonomy. Even though it is formally stated that HEIs in the Netherlands have a high level of autonomy, the factual autonomy of the HEIs differs. PBF and the additional individual PAs are perceived as a new way of government control over the HEIs. The autonomy of the higher education institutions has become a part of a new kind of control over the HEIs.

In general, the Dutch legal framework related to HE is minimal to moderate coercive and HEIs dispose of high levels of autonomy in various subjects. These high levels of autonomy are also showed through not applying a uniform PBF system to all the HEIs; individual performance agreements are concluded between each university and the government. In these individual PAs, the universities can set their own ambitions for the different mandatory indicators. Universities can also include different additional indicators. The Dutch government stays the most important actor in the HE area in terms of setting rules and providing funding, even when the control over universities is decreased. This role of the government can be showed by the seven mandatory indicators that are included in each PA. Based on the gathered data from documents and articles, we can assume that hypothesis 1 can be accepted to explain the (to a certain extent) variation in the performance agreements of the HEIs within the Netherlands.

6.2 Explaining the variation in PBF between the countries (region)

For the variation in the PBF systems between the countries (region); two hypotheses are important. Hypothesis 2 is derived from the coercive mechanism: informal pressure. Hypothesis 3 is deduced from the mimetic mechanism. We hypothesized that:

- *Hypothesis 2: The more cultural differences between the countries (region), the more variation we observe in the PBF systems between the countries (region).*
- *Hypothesis 3: The larger the average size of higher education institutions within the countries (region), the more variation we observe in the performance agreements of the higher education institutions within the countries (region).*

Hypothesis 2 (variation explained by institutional characteristics): not rejected

There are various differences in the PBF systems between the Netherlands and Catalonia: the rationale behind the establishment of the PBF systems (instrumental goals) ; individual PAs in contrast with a uniform PBF system; only obligatory indicator or also additional indicators; and ex-ante or ex-post funding. There are also some similarities: a part of the existing core funding of the government to HEIs is based on performance indicators; most established indicators are quantitative; a more or less similar evaluation of the achievements; and the individual PAs/the uniform PBF system are not legally binding in both countries (region).

Documents regarding the state traditions of both countries indicated that with reference to the countries HE system; the Germanic state tradition applies for the Netherlands, while the Napoleonic state tradition dominates in Spain (Catalonia). In the case of Spain (Catalonia) we can speak more in terms of one, powerful, centralized state which has a crucial role in the country's economic and social development. The influence of this centralized state can directly be observed; they have chosen a uniform PBF system that applies to all HEIs. The Germanic state tradition also emphasizes the unitary and authority of the state. However, in the Germanic state tradition cooperation and consensus are the key elements; this in contrast with the Napoleonic state tradition where the state's authority is direct applied in the society. We can assume that the more open and cooperative Germanic state tradition in the Netherlands (compared to the Napoleonic state tradition) led, inter alia, to individual PAs. Further, the similarities between both countries (region) in PBF systems can be explained due to the influence of another state tradition on the dominant state traditions. The Netherlands can be viewed as a Germanic type of state with some influences of the Napoleonic state tradition and Spain can be considered as a mix of Germanic type of state and Napoleonic type of state (in the case of HE applies a more Napoleonic state tradition type of control). This shows that in both countries (region) there are some influences of the dominant state tradition of the other country, what leads to some similarities in the PBF systems.

As there is a difference in the countries' dominant state traditions and the traditions' influence on HEIs, we can assume that this has an influence on the different chosen forms of PBF systems by the countries (region). Based on the gathered data from documents, we can assume that hypothesis 2 can be accepted to explain the variation in the adopted PBF systems for HEIs between Catalonia and the Netherlands.

Hypothesis 3 (variation explained by characteristics of the HEIs): rejected

As shown, the Netherlands and Catalonia have chosen different forms of PBF systems. Where the Netherlands works with individual PAs with each HEIs, Catalonia applies a uniform system for all the

HEIs. In this study, size is indicated by ‘amount of students’ and ‘faculties and schools’. On the basis of both characteristics, we calculate the average size of the HEIs in the countries (region):

- In Catalonia, the average size of HEIs on the basis of ‘amount of students’ is 20.900 (see table 12 first column: 250.795/12) and on the basis of ‘faculties and schools’ is 10 (see table 12 third column: 122/12).
- In the Netherlands, the average size of HEIs on the basis of ‘amount of students’ is 18.905 (see table 14 first column: 245.764/13) and on the basis of ‘faculties and schools’ is 7 (see table 14 third column: 96/13).

The results show that Catalonia has the largest average size of HEIs. However, the Netherlands shows most variation in the individual PAs between the HEIs within the country; Catalonia applies a uniform system. In addition, results of the interviews showed that all Catalan universities of different sizes influence each other; there was not one ‘leader’ that the smaller universities imitate. Based on the gathered data from the documents and interviews, we can assume that hypothesis 3 can be rejected to explain the variation in the adopted PBF systems for HEIs between Catalonia and the Netherlands.

7. Conclusions and recommendations

The first section of this final chapter presents the conclusions for the main questions. The second section focuses on the study limitations. At last, the third section discusses recommendations.

7.1 Conclusions

The first main question of this study is: *'How can we explain that the Netherlands and Spain (Catalonia) have chosen different forms of PBF systems for their higher education institutions?'* A second main question is asked: *'What are the consequences of these chosen forms of PBF systems for the performance agreements made by the HEIs within these countries?'*

PBF systems can have different characteristics. Catalonia has chosen for a uniform PBF system for their HEIs; there is no variation in the adopted PBF system within Catalonia. In case of the Netherlands there is some variation observed in the PAs between HEIs. Most differences can be observed in the established additional indicators between the Dutch universities. There are also similarities in the individual PAs between the Dutch universities. Seven similar mandatory indicators are included in the proposals of each Dutch HEIs and the baselines and set ambitions by the universities for most mandatory indicators are more or less similar.
The PBF systems of both countries (region) are compared; various differences are observed. Some differences are summed up. First, the instrumental goals behind the PBF systems differ. Also, in the Netherlands there are individual PAs between the government- HEIs in contrast to Catalonia where there is a uniform PBF system (since 2008). Further, the HEIs in the Netherlands can select additional indicators in the PAs, which is not the case in Catalonia. Finally, in the Netherlands there is an ex-ante funding; in Catalonia an ex-post funding. Except of these differences, there are some similarities. First, in both countries (region), performance indicators are a part of the existing core funding. In addition, most of the established indicators in both countries (region) are quantitative. Also, there is a more or less similar way of evaluation of the achievements and the PAs/the uniform PBF system are not legally binding in both countries (region).

The theory of new-institutionalism is used to explain PBF variation between and within the countries (region). The theory of new-institutionalism highlights the institutional environment that effects institutions. Institutions respond to expectations from the institutional environment, inter alia, to increase their survival chances, which leads to the homogeneity process 'isomorphism'. Institutional isomorphism distinguishes between three fundamental mechanisms that underlie isomorphism: coercive isomorphism, mimetic isomorphism, and normative isomorphism. In this study, institutional characteristics (coercive mechanisms) and characteristics of the HEIs (mimetic mechanism) are the explanatory variables. Hypotheses are formulated and tested.

- *Hypothesis 1: The less coercive the national legal framework for higher education (e.g. laws related to education and funding) within the countries (region), the more variation we observe in the performance agreements of the higher education institutions.*

Based on empirical data, it seems that the minimum to moderate coercive character of the Dutch legal framework for HE and the Dutch universities' high influence in the formulation of the objectives and indicators, can explain the (to some extent) variation in the PAs of the Dutch HEIs. The similar mandatory indicators in the PAs of the Dutch HEIs can be explained by the persistent role of the Dutch government in HE. In Catalonia one can observe a coercive character of the legal framework

for HE and limited influence of the universities in the formulation of the objectives and indicators. These institutional characteristics appear to have an influence on the chosen uniform PBF system by Catalonia. Hypothesis 1 can be accepted to explain the variation in the PAs of the HEIs within the Netherlands and the uniform PBF system within Catalonia. The coercive mechanism (formal pressures) of the theory of new-institutionalism is applicable in the case of variation within Catalonia and the Netherlands. The coercive mechanism (formal pressures) has assisted us to identify a factor that has an impact on the variation in PAs of HEIs within the investigated countries (region).

- *Hypothesis 2: The more cultural differences between the countries (region), the more variation we observe in the PBF systems between the countries (region).*

The empirical data support that the difference in the dominant state traditions has an influence on the different chosen forms of PBF systems by both countries (region). In Catalonia the Napoleonic state tradition dominates; there is one powerful state that has an influence on the uniform PBF system. In the Germanic system in the Netherlands consensus and cooperation are central. The PBF similarities between the countries (region) can be explained due to the influence of the countries' dominant state traditions on the dominant state tradition of the other country. Hypothesis 2 can be accepted to explain the variation in the PBF systems between the Netherlands and Catalonia. The coercive mechanism (informal pressures) of the theory of new-institutionalism is applicable in the case of variation between Catalonia and the Netherlands. The coercive mechanism (informal pressures) has assisted us to identify a factor that has an impact on the variation in PBF systems between the investigated countries (region).

- *Hypothesis 3: The larger the average size of higher education institutions within the countries (region), the more variation we observe in the performance agreements of the higher education institutions within the countries (region).*

In Catalonia there is no variation in the PAs of HEIs. Empirical data shows that the size of the universities did not influence adoption of different elements in the set PBF system in Catalonia. Further, results show that Catalonia has the largest average size of HEIs, while the Netherlands shows most variation in the PAs of the HEIs. Hypothesis 3 can be rejected to explain the uniform PBF within Catalonia and the variation in the PBF systems between the Netherlands and Catalonia. The mimetic mechanism can be relevant in other countries where there is variation in the adopted PBF system within the country. The mimetic mechanism has not assisted us to identify a factor that has an impact on the variation in PBF systems between and within the investigated countries (region).

PBF systems have consequences for the PAs within these countries (region). Catalonia has chosen a uniform PBF system including only (mostly quantitative) mandatory indicators. This choice excluded individual PAs between the HEIs-Catalan government. The Catalan HEIs have minimum to say; they do not have any space to adopt e.g. own chosen indicators or set particular ambitions for indicators in an individual PA. University of Barcelona indicated that in the current PBF system the government does not distinguish between the different universities; this is seen as unfair (Interview University of Barcelona, 2015). When HEIs have hardly a voice in the PBF system, HEIs will be less eager to achieve the set performances in exchange for funding (Interview University of Barcelona, 2015).
In case of the Netherlands, there are individual PAs concluded between HEIs and the government. The HEIs can set own additional indicators and set ambitions for different mandatory indicators in the individual PAs. This shows that the chosen form of PBF system by the Netherlands left some room for HEIs to make own decisions which led to (some extent) variation in the PAs between HEIs. Dutch HEIs perceive performance agreements as a joined effort (CHEPS, 2015, p. 31 and Review

Committee, 2014b). When HEIs have a considerable influence on individual PAs, it is expected that HEIs will be more eager to achieve the set performances in these agreements.

To conclude, the variation in the adopted PBF systems between and within the countries (region) can, to a large extent, be explained by institutional characteristics. The national regulatory frameworks and the national HE systems' governance structure explain variation within the countries (region). Different dominant state traditions explain variation between the countries (region). When is chosen for the Dutch individual PAs instead of the Catalan uniform PBF system, HEIs have more influence on the design and form of PAs, there is more variation in PAs within the country and the effectivity of the PAs is expected to increase.

7.2 Limitations of the study[1]

First, respondents were interviewed once; no interviews were conducted with the same respondents on several occasions. This study limitation is a threat to internal validity (also called 'credibility' in qualitative research). However, other made provisions increased internal validity. Different research methods are used for data collection: literature, interviews and document analysis. Interviews were conducted and recorded. These interviews were elaborated and send to the respondents for feedback. Second, because of purposive sampling of respondents and limited number of respondents, the study results are not conclusive and cannot be generalized to the wider population or different contexts. The external validity (also called 'transferability' in qualitative research) of the study is low. This study develops a first understanding that can be the base for further research. Third, the research technique that is applied is to a great extent reliable (also called 'dependability' in qualitative research). One can obtain the same results by repeatedly implementing the study with the same research methods to the same objects. The research methods are described in detail to reproduce the same research. However, one could not get exactly the same results. Different interviewers, because of their own behavior and attitudes, get different answers from respondents.

7.3 Recommendations

- First, this study should be re-examined across contexts e.g. in other European countries (regions). This will lead to a higher external validity of the results of the study.
- Further study can also look at clusters of universities and to what extent the included universities in these clusters influence each other in the context of performance agreements. An example of a cluster is that of the Dutch technical universities: UT, TU/e and TU delft.
- In addition, as in the Netherlands individual PAs are also concluded with the universities of applied sciences, it can be of interesting to include them in further research. The Excel documents where the baselines and the set ambitions for different mandatory indicators by Dutch universities of applied sciences are elaborated, can be seen as a start.
- Finally, to extent the research, it is recommended to use also other theories to explain variation. For example, one can include the rational choice theory. One can also include other isomorphism mechanisms as competitive isomorphism which is about the organizations' behavior imitating others driven by economic and competitive grounds (DiMaggio & Powell, 1983, p. 150). In the conducted interviews, a question was asked related to competitive isomorphism (see appendix 13). The results were insufficient and thereby excluded in this study.

[1] The terms internal and external validity and reliability are interpreted in line with Shenton (2004)

References

Literature list

Aja, E. (2001). Spain: Nation, nationalities, and regions. *Subnational Democracy in the European Union: Challenges and Opportunities*, 229-254.

Athanassopoulou, E. (Ed.). (2007). *United in diversity?: European integration and political cultures* (Vol. 2). IB Tauris.

Babbie, E. (2010). *The Practice of Social Research.* Belmont, CA: Wadsworth, Cengage learning.

Behn, R. (2003). Why measure performance? Different purposes require different measures. *Public Administration Review*, 586-606.

Burke, J. C., & Serban, A. M. (1998). *Performance Funding For Public Higher Education: Fad Or Trend: New Directions For Institutional Research.* Jossey-Bass.
Casper, C., & Henry, M. (2001). Developing performance-oriented models for university resource allocation. *Research in Higher Education*, 353-376.

Burns, L., & Wholey, D. (1993). "Adoption and abandonment of matrix management programs: Effects of organizational characteristics and interorganizational networks." Academy of Management Journal, 36: 106-138.

Cai, Y., & Yan, F. (2011). Coercive isomorphism. In P. Teixeira, & D. Dill, *Public Vices, Private Virtues?; Assessing the Effects of Marketization in Higher Education* (pp. 47-67). Rotterdam: Sense Publisher.

Catalonia's Regional Steering Committee (2010), ''The Autonomous Region of Catalonia, Spain: Self-Evaluation Report'', OECD Reviews of Higher Education in Regional and City Development, IMHE, http://www.oecd.org/edu/imhe/regionaldevelopment

CHEPS. (2015). *Performance-based funding and performance agreements in fourteen higher education systems: report for the Ministry of Education, Culture and Science.* Enschede.

Codling, A. and Meek, V.L. (2006). 'Twelve Propositions on Diversity in Higher Education', *Higher Education Management & Policy*, vol. 18, issue 3, pp. 23-47.

Colino, C., & Del Pino, E. (2011). The institutional expression of Democracy: Spain. In J. Loughlin, F. Hendriks, & A. Lidström, *The Oxford Handbook of Local and Regional Democracy in Europe* (pp. 359-387). Oxford University Press.

Díaz, V. P. (1993). The return of civil society: The emergence of democratic Spain. Harvard University Press.

DiMaggio , P., & Powell, W. (1983). The Iron Cage Revisited: Institutional Isomorphism and Collective Rationality in Organizational Fields. *American Sociological Review*, p. 147.

DiMaggio , P., & Powell, W. (1991). *The New Institutionalism in Organizational Analysis.* Chicago: The Univeristy of Chicago press.

Dougherty, K., & Reddy V. (2011). The impacts of state performance funding systems on higher education institutions: Research literature review and policy recommendations. CCRC Working Paper No. 37, Community College Research Center. CCRC Publications. Teachers College, Columbia University, New York, NY. http://www.tc.columbia.edu/ccrc.

Durkheim, E. (1933). The Division of Labor in Society. New York: Free Press

Enders, J., Weyer, E., & de Boer, H. (2013). Regulatory autonomy and performance: the reform of higher education re-visited. *Higher Education*, 5-23.

European Commission. (2014). *webgate.ec.europa.eu*. Received from: Funding in Education: https://webgate.ec.europa.eu/fpfis/mwikis/eurydice/index.php/Netherlands:Funding_in_Education

European Consortium for Accreditation. (2014). Higher Education System in Spain. Retrieved from ecahe.eu: http://ecahe.eu/w/index.php/Higher_education_system_in_Spain

File, J. (2006). Higher Education Governance Caste Study: Catalonia. In: DG for Education and Culture (2006). The extent and impact of higher education governance reform cross Europe; Final report to the Directorate-General for Education and Culture of the European Commission (pp 41-56). Received from http://www.acup.cat/media/The_extend_and_impact_of_higher_education_governance_reform_across_Europe_III.pdf

Finnemore, M. (1996). Norms, culture, and world politics: insights from sociology's institutionalism. *International organization*, 325-347.

Frumkin, P., & Galaskiewicz, J. (2004). Institutional isomorphism and public sector organizations. *Journal of public administration research and theory*,*14*(3), 283-307.

Hall, P., & Taylor, R. (1996). Polical science and the three new institutionalisms. *Political Studies*, 936-957.

Hannan, M. & Freeman. J. (1977). "The population ecology of organizations. "American Journal of Sociology, 83:929-964.

Haveman, H. A. (1993). Follow the leader: Mimetic isomorphism and entry into new markets. *Administrative science quarterly*, 593-627.

Hayward, J.E.S. (1983). Governing France: The One and Indivisible Republic, 2nd edn (London: Weidenfeld and Nicolson)

Heinelt, H., & Kübler, D. (2005). *Metropolitan governance in the 21st century: capacity, democracy and the dynamics of place*. Routledge.

Heinrich, C. (1999). Do government bureaucrats make effective use of performance management information. *Journal of Public Administration Research and Theory*, 363-393.

Herbst, M. (2007). *Financing public universities.* New York: Springer.

Hicks, D. (2011). Performance-based university research funding systems. *Research policy*, 251-261.

Hood, C., & Peters, G. (2004). The middle age of new public management: Into the age of paradox? *Journal of Public Administration Research and Theory*, 14(3), 267–282.

Horta, H., Huisman, J., & Heitor, M. (2008). Does competitive research funding encourage diversity in higher education? *Science and public policy*, 146-158.

Huisman, P., & Hendrinks, F. (2013). The Netherlands. In C. Russo, *Handbook of Comparative Higher Education Law.* Plymouth: Rowman & Littlefield Publishers.

Huntington, Samuel P.(1968). Political Order In Changing Societies (New Haven: Yale University Press).

James, O. (2004). The UK core executive's use of public service agreements as a tool of governance. *Public Administration*, 397-419.

Jongbloed, B. (2008). Funding higher education: a view from Europe. *Center for Higher Education Policy Studies*.

Jongbloed, B., De Boer, H., Enders, J., & File, J. (2010). *Progress in Higher Education Reform across Europe. Governance and Funding Reform.* Volume 2: Methodology, performance data, literature survey, national system analyses and case studies. Brussels: European Commission.

Jongbloed, B., & Vossensteyn, H. (2001). Keeping up performances: an international survey of performance-based funding in higher education. *Journal of Higher Education Policy and Management*, 127-145.

Katzenstein, P. J. (1987). *Policy and politics in West Germany: the growth of a semi sovereign state*. Temple University Press.

Keating, M., & Loughlin, J. (2013). The political economy of regionalism. Routledge.

Kickert, W.J.M.,(2006). Distinctive characteristics of state and administrative reforms in Southern Europe, Milan: EGPA conference.

Kickert, W. (2008). The study of public management in Europe and the US. der moderne staat–Zeitschrift für Public Policy, Recht und Management, 1, pp. 221-235.

Kimberly, J., & Miles. R. (1980). Organizational Life Cycles. San Francisco: Jossey-Bass.

Lehmbruch, G. (1991). The organization of society, administrative strategies, and policy networks. *Political Choice: Institutions, Rules, and the Limits of Rationality. Frankfurt a. M: Campus*, 121-158.

Liefner, I. (2003). Funding, resource allocation, and performance in higher education systems. *469-489*, Higher Education.

Lijphart, A., (1984). Democracies. Patterns of Majoritarian and Consensus Government in Twenty-one Countries, New Haven: Yale University Press.

Loughlin, J. (1993). Federalism, Regionalism and European Union. Politics

Loughlin, J. and Peters, B.G. (1997) 'State Traditions, Administrative Reform and Regionalization', in M. Keating and J. Loughlin (eds.) The Political Economy of Regionalism, London: Routledge, pp. 41–62

March, J. (1981). "Decisions in organizations and theories of choice." In Andrew H. Van de Ven and William F. Joyce (eds.), Perspectives on Organization Design and Behavior: 205-244. New York: Wiley.

Meyer, J. W., & Rowan, B. (1977). Institutionalized Organizations: Formal Structure as Myth and Ceremony. *American Journal of Sociology*, p. 340.

Meyer, M. (1990). "Notes of a skeptic: From organizational ecology to organizational evolution." In Jitendra V. Singh (ed.), Organizational Evolution: New Directions: 298-314. Newbury Park, CA: Sage.

Mezias, S.,& Lant, T. (1994) "Mimetic learning and the evolution of organizational populations." In Joel A. C. Baum and Jitendra V. Singh (eds.), The Evolutionary Dynamics of Organizations. New York: Oxford University Press (forthcoming).

Mora, J. G., & Vidal, J. (2005). Two decades of change in Spanish universities: Learning the hard way. In *Reform and Change in Higher Education* (pp. 135-152). Springer Netherlands.

Moynihan, D. (2005). What do we talk about when we talk about performance? Dialogue theory and performance budgeting. *Journal of public administration research and theory*, 151-168.

Musselin, C. (2007). Are universities specific organizations? In G. Krücken, A. Kosmutzky, & M. Torka

(Eds.), *Towards a multiversity? Universities between global trends and national traditions* (pp. 63–84). Bielefeld: Transcript Verlag.

Pfeffer, J., & Salancik, G. (1978). The external control of organizations. New York: Harper and Row

OECD (2009). OECD Reviews of Tertiary Education: Spain. Paris: Organisation for Economic Co-Operation and Development (OECD).

OECD (2010), Higher Education in Regional and City Development: Catalonia, Spain, OECD Publishing. https://dx.doi.org/10.1787/9789264089006-en

Parrado, S. (2008). Failed policies but institutional innovation through "layering" and "diffusion" in Spanish central administration. *International Journal of Public Sector Management*, *21*(2), 230-252.

Pollitt, C., & Bouckaert, G. (2011). *Public Management Reform: A comparative analysis-new public management, governance, and the Neo-Weberian state*. Oxford University Press.

Rabovsky, T. (2012). Accountability in Higher Education: Exploring Impacts on State Budgets and Institutional Spending Patterns. *Journal of Public Administration Research and Theory*, 675-700.

Reviewcommissie Hoger Onderwijs en Onderzoek. (2012). *Adviezen: Reviewcommissie Hoger Onderwijs en Onderzoek over prestatieafspraken Nederlandse Hogescholen en universiteiten.* The Hague.

Scott, R. (1992) Organizations: Rational, Natural, and Open Systems, 3d ed. Englewood Cliffs, NJ: Prentice-Hall

Scott, W., & Davis, G. (2007). *Organizations and Organizing. Rational, Natural and Open System Perspectives.* Pearson International Edition.

Shah, J. Y., & Gardner, W. L. (Eds.). (2008). *Handbook of motivation science*. Guilford Press.

Shenton, A. K. (2004). Strategies for ensuring trustworthiness in qualitative research projects. *Education for information*, *22*(2), 63-75.

Shipan, C., & Volden, C. (2008). The mechanisms of policy diffusion. *American Journal of political science*, 840-857.

Sotiropoulos, D.A., (2006). Patronage in South European bureaucracies in the 1980s and 1990s: the politicization of central public administrations in Greece, Italy, Portugal and Spain, Nocosia: ECPR workshops.

UNESCO. (2012). European students statistics. Received from The guardian: http://www.theguardian.com/world/interactive/2012/may/31/european-students-statistics-interactive

Vilalta, J.M. (2001). University Policy and Coordination Systems: Between Governments and Universities: The Experience of the Catalan University System. Higher Education and Management, Vol. 7, pp. 9–22.

Vilalta, J. M., & Brugué, J. (2005). Contracting for quality improvement and financing in public universities of Catalonia, Spain. In Public Policy for Academic Quality (pp. 275-294). Springer Netherlands.

Whitley, R. (2007). *Constructing universities as strategic actors: Limitations and variations.* Paper presented at the conference 'The university in the market', Stockholm, Wenner-Gren Center, 1–3 November.

Williamson, P.J., (1989). Corporatism in Perspective, London: Sage.

Wright, V., 1990: The Administrative Machine: Old Problems and New Dilemmas, in: Hall, P.A./ Hayward, J./Machin, H. (eds.), Developments in French Politics, Houndmills: MacMillan.

Wunder, B.(ed), 1995: The Influences of the Napoleonic 'Model' of Administration on the Administrative Organization of Other Countries, Brussels: IIAS-cahier

Interviews

-Interview Catalan government. (2015a, June 12). Interview with the manager at the secretary for Universities and Research at the Department of Economics and Knowledge at the Government of Catalonia. (C. Somi, Interviewer)
-Interview Catalan government. (2015b, June 15). Interview with the General Director of the Government of Catalonia. (C. Somi, Interviewer)
-Interview Rovira i Virgili University. (2015, June 10). Interview with the person that is responsible of the budget and economic planning of the university (C. Somi, Interviewer)
-Interview Pompeu Fabra University. (2015, June 17). Interview with the vice rector for Economy and Strategic Projects.(C. Somi, Interviewer)
-Interview Oberta de Catalunya (Open University) (2015, June 19). Interview with the general manager and UOC CEO of the university. (C. Somi, Interviewer)
-Interview University of Barcelona. (2015, June 29). Interview with Chief of the rector's technical Office and Chief of budgetary office. (C. Somi, Interviewer)

Word documents

-Document 1 Catalan government (2014). Competitively funds for research objectives and indicators distributed between 7 public universities according to the weight of the following elements.
-Document 2 Catalan government (2014). Some established research indicators and their volume, quality and progress.
-Document 3 Catalan government (2014). Teaching indicators.
-Document 4 Catalan government (2013). Calculation of the achievement of the indicator 'reduction abandonment'.
-Document 5 Catalan government (2014). Management indicators.
-Document Open University of Catalonia (2015). Initial proposal of the weights per objective and indicator.

Excel documents

-Excel Dutch Universities; Baselines (2015).
-Excel Dutch Universities; Ambitions 2015 (2015).
-Excel Dutch Universities; Total (2015).
-Excel Dutch Universities of Applied sciences; Baselines (2015).
-Excel Dutch Universities of Applied Sciences; Ambitions 2015 (2015).
-Excel Dutch Universities of Applied Sciences; Total (2015).

Websites

-Website of the Review Committee: http://www.rcho.nl
-System-wide agreement on profiling, diversity and the outline of performance agreements (research universities): http://www.vsnu.nl/hoofdlijnenakkoord.html
-Review Committee. (2012, March 5). *Work Method and Assesment Framework: Higher Education and Research Review Committee*:
http://www.rcho.nl/media/www_rcho_nl/nl%20performagr%20assessment%20framework%202012.pdf
-Review Committee. (2014a, January). *Stelselrapportage 2013*:
http://www.rijksoverheid.nl/bestanden/documenten-en-publicaties/rapporten/2014/01/30/stelselrapportage-2013-reviewcommissie-hoger-onderwijs-en-onderzoek/stelselrapportage-2013-reviewcommissie-hoger-onderwijs-en-onderzoek.pdf
-Review Committee. (2014b, November). *Letter sent by the Review Committee in November 2014 to the Minister of Education on the outcomes of the Mid-term review.*:
http://www.rcho.nl/media/www_rcho_nl/adviezen%20hs/adviezen%20hs%2014/rc%202014%2011%2003%20-%201042%20aanbiedingsbrief%20adviezen%20midtermreview.pdf

-ScienceGuide. (2015). *The risks of performance-based funding*: http://www.scienceguide.nl/201507/the-risks-of-performance-based-funding.aspx

3TU Federation. (2015). *3tu.nl*. Received from: http://www.3tu.nl/nl/over_3tu/feitenencijfers
4ICU. (2015). *4icu.org*. Received from: Universidad Abat Oliba CEU: http://www.4icu.org/reviews/7407.htm

ArnhemNijmegen City Region. (2015). *arnhemnijmegencityregion.nl*. Received from: http://www.arnhemnijmegencityregion.nl/ondernemen/kennisklimaat-en-onderzoek/radboud-universteit

Associació Catalana D'universitats Públiques. (2014). *Universities of Catalonia.* Received from: http://www.acup.cat/sites/default/files/universities-catalonia-2014.pdf

Delft University of Technology. (2014). *tudelft.nl*. Received from: http://www.tudelft.nl/fileadmin/Files/tudelft/over/Feiten_en_cijfers/jaarverslagen/Jaarverslag_TU_Delft_2013.pdf

Delft University of Technology. (2015). *tudelft.nl*. Received from: http://www.tudelft.nl/over-tu-delft/organisatie/onderzoeksinstituten/onderzoeksinstituten/

Eindhoven University of Technology. (2015a). *tue.nl*. Received from: University: https://www.tue.nl/universiteit/faculteiten/

Eindhoven University of Technology. (2015b). *tue.nl*. Received from: https://www.tue.nl/onderzoek/instituten-groepen-scholen/onderzoeksinstituten/

Erasmus University Rotterdam. (2013). *issuu.com*. Received from: http://issuu.com/eur_smc/docs/jaarverslag2012?e=2024334/3832411

Erasmus University Rotterdam. (2015a). *eur.nl*. Received from: http://www.eur.nl/english/faculties/

Erasmus University Rotterdam. (2015b). *eur.nl*. Received from: http://www.eur.nl/english/research/schools_and_institutes/

IndexMundi. (2014a). *Netherlands vs. Spain*. Received from: http://www.indexmundi.com/factbook/compare/netherlands.spain/government

IndexMundi. (2014b). *Netherlands vs. Spain*. Received from: http://www.indexmundi.com/factbook/compare/netherlands.spain/economy

International University of Catalonia. (2014a). *uic.es/en*. Received from: http://www.uic.es/en/statistical-figures

International University of Catalonia. (2014b). *uic.es/en*. Received from: http://www.uic.es/en/faculties-schools-and-institutes

Leiden University. (2014). *http://media.leidenuniv.nl*. Received from: http://media.leidenuniv.nl/legacy/jaarverslag-2013-universiteit-leiden.pdf

Maastricht University. (2012). *maastrichtuniversity*. Received from: http://www.maastrichtuniversity.nl/web/Main1/Faculteiten.htm

Maastricht University. (2013). *maastrichtuniversity.nl*. Received from: http://www.maastrichtuniversity.nl/web/Main/AboutUM/FactsFigures/AnnualReport.htm

Maastricht University. (2014). *maastrichtuniversity.nl*. Received from: http://www.maastrichtuniversity.nl/web/Main1/Onderzoek/OverzichtOnderzoeksinstituten.htm

QS Quacquarelli Symonds Limited. (2015). *topuniversities.com*. Opgeroepen op May 2015, van Universitat Internacional de Catalunya (UIC): http://www.topuniversities.com/universities/universitat-internacional-de-catalunya-uic/postgrad

Radboud University Nijmegen. (2014). *ru.nl*. Received from: http://www.ru.nl/english/about-us/our-university/facts-figures/annual-reports/

Tilburg University. (2014). *tilburguniversity.edu*. Received from: https://www.tilburguniversity.edu/about/tilburg-university/annual-reports-budgets/

Tilburg University. (2015a). *tilburguniversity.edu*. Received from: https://www.tilburguniversity.edu/nl/over/schools/

Tilburg University. (2015b). *tilburguniversity.edu*. Received from: https://www.tilburguniversity.edu/research/institutes-and-research-groups/

University Abat Oliba. (2013). *recercat.cat*. Received from: estudiantes de la universidad Obat Oliba CEU y Catalunya: http://www.recercat.cat/bitstream/handle/2072/232896/TFC-ADELL_ADE-2014.pdf?sequence=1

University Abat Oliba. (2015a). *uaoceu.es*. Received from: http://www.uaoceu.es/en/The%20University/Organisation?set_language=en

University Abat Oliba. (2015b). *uaoceu.es*. Received from: http://www.uaoceu.es/es/investigacion/catedras-e-institutos

University of Amsterdam. (2013). *uva.nl*. Received from: http://www.uva.nl/en/about-the-uva/uva-profile/mission-and-identity/annual-reports/annual-report-2012/annual-report-2012.html

University of Amsterdam. (2015a). *uva.nl*. Received from: http://www.uva.nl/over-de-uva/organisatie/faculteiten

University of Amsterdam. (2015b). *uva.nl*. Received from: http://www.uva.nl/onderzoek/organisatie/onderzoeksinstituten

University of Amsterdam. (2015c). *uva.nl*. Received from: http://www.uva.nl/onderzoek/organisatie/onderzoekscentra

University of Groningen. (2013). *www.rug.nl*. Received from: http://www.rug.nl/about-us/where-do-we-stand/facts-and-figures/annual-reports/rug-annual-report-2012.pdf

University of Groningen. (2015a). *rug.nl*. Received from: http://www.rug.nl/about-us/organization/faculties/

University of Groningen. (2015b). *rug.nl*. Received from: http://www.rug.nl/research/search/institute-per-faculty/

University of Twente. (2013). *utwente.nl*. Received from: http://www.utwente.nl/organisatie/feiten-en-cijfers/jaarverslag/

University of Twente. (2015). *utwente.nl*. Received from: http://www.utwente.nl/organisatie/structuur/faculteiten/

University of Vic. (2014). *uvic.cat*. Received from: http://www.uvic.cat/en/uvic-figures

University of Vic. (2015a). *uvic.es/en*. Received from: http://www.uvic.es/en

University of Vic. (2015b). *uvic.cat/en*. Received from: http://www.uvic.cat/en/node/133

University Ramón Lull. (2014). *www3.url.edu*. Received from: http://www3.url.edu/en/node/2375

Universitat Ramon Llull. (2015a). *Programmes*. Received from: http://www.url.edu/en/programmes

Universitat Ramon Llull. (2015b). *Research and innovation*. Received from: http://www.url.edu/en/research-and-innovation

Utrecht University. (2013). *uu.nl*. Received from: http://www.uu.nl/en/organisation/profile/facts-and-figures/annual-report

Utrecht University. (2015). *uu.nl*. Received from: http://www.uu.nl/en/organisation/governance-and-organisation/faculties

University of Vic. (2015). *uvic.es*. Received from: http://www.uvic.es/en/research-and-knowledge-transfer

VU University Amsterdam. (2013). *issuu.com*. Received from: http://issuu.com/vuuniversity/docs/jaarverslag_vu_2012

VU University Amsterdam. (2015). *vu.nl*. Received from: http://www.vu.nl/nl/over-de-vu/organisatie-en-bestuur/instituten-centra-stichtingen/index.asp

Wageningen University. (2014). *wageningenur.nl*. Received from: http://www.wageningenur.nl/en/About-Wageningen-UR.htm

Wageningen University. (2015a). *wageningenur.nl*. Received from: http://www.wageningenur.nl/en/Education-Programmes/PhD-Programme/Graduate-Schools.htm

Wageningen University. (2015b). *wageningenur.nl*. Received from: http://www.wageningenur.nl/en/Expertise-Services/Research-Institutes.htm

Appendices

Appendix 1: Hypotheses

Hypotheses for the 'variation within countries (region)'

- *Hypothesis 1: The less coercive the national legal framework for higher education (e.g. laws related to education and funding) within the countries (region), the more variation we observe in the performance agreements of the higher education institutions.*
- *Hypothesis 3: The larger the average size of higher education institutions within the countries (region), the more variation we observe in the performance agreements of the higher education institutions within the countries (region).*

Hypotheses for the 'variation between countries (region)'

- *Hypothesis 2: The more cultural differences between the countries (region), the more variation we observe in the PBF systems between the countries (region).*
- *Hypothesis 3: The larger the average size of higher education institutions within the countries (region), the more variation we observe in the performance agreements of the higher education institutions within the countries (region).*

Appendix 2: An introduction to PBF systems and performance agreements

A.2.1 Performance agreements

Performance agreements are contracts between an individual HEI and the government, which set out specific targets that the institutions will try to achieve in a given time period (CHEPS, 2015, p. 12). PAs involve intentions to achieve given goals, measured against pre-set known standards. Performance is considered to be the accomplishment of a commitment established in the contract.

This way of describing performance agreements, gives rise to various questions (CHEPS, 2015, pp. 12-13). First of all, to what extent does this description distinguish between the prescription of a particular outcome (a result that should be achieved by the organization) and the effort an actor has to invest (a 'guide for behavior'; the amount of effort an actor can produce to bring to a specific activity). Furthermore, what performance implies is subjective of nature so this is a matter of one's interpretation of performance. Questions arise as: 'Can we count attracting of international students as performance?' Performance should be seen as oriented on goals or problems, results-based and measured against standards that are pre-set. The formulated standards are derived from a political decision, deliberation among interested stakeholders or a specific benchmark (where a standard means: performing better than other organizations).
Additionally (CHEPS, 2015, p. 13), does this formulation of performance agreements suggest that PAs necessarily are linked with funding of the public government? Could we also speak of PAs when no funding is linked to these agreements? Suggested is that when no funding is attached to the performance agreements made between institutions and the central government, we should speak of 'letters of intent' in place of 'performance contracts'.

A.2.2 The rationales of performance agreements (instrumental goals)

It is important to distinguish between ultimate goals and instrumental goals. Ultimate goals are the valued states that the individual (in this case 'the government') is trying to reach. Instrumental goals are steppingstones to reach the ultimate goals (Shah & Gardner, 2008, p. 136). While the governments' ultimate goal behind the introduction of PBF systems and PAs is similar (outlined in the section 1.1), the rationales (instrumental goals) of governments behind the introduction of PBF systems and PAs differ. The involved parties should first understand the rationale for the contractual relationship before they actually conclude performance agreements. This rationale is of main importance, because of its influence on the design, the process and the evaluation of the PA. Governments can have multiple rationales to introduce performance agreements. Subsequently, all these rationales have an impact on the design, the process and the evaluation of the governmental policy tool. Different rationales will be explained in more detail below.

A Institutional profiling and system diversity

The first rationale includes the stimulation of institutions to strategically situate themselves, also called 'institutional profiling'. It is expected that PAs add value to the creation of a diversified higher education system. This first rationale is a well-recognized target and often a main rationale in various countries. PAs are received as fitting this goal of system diversity well. Though, experiences with PAs showed that PAs not always add value to a more varied system of HE. Performance agreements and

the related PBF system in Finland showed that PAs indeed encourage institutional profiling. However, this does not automatically leads to a more varied HE system. Literature on the debate about institutional diversity suggest that when institutions are rewarded equal for identical outputs, these institutions in all probability will seek comparable ways on how to maximize their income. Furthermore, when targeted funding policies do not include explicit diversity goals, they will risk stimulating institutional convergence (CHEPS, 2015, p. 14 and Codling & Meek, 2006).

B Improving the strategic dialogue between institutions-government

This second rationale of improving the strategic dialogue between institutions-government can be found in many countries; especially in those countries with relatively barely a tradition in this context of a relationship between the institutions-the government. This is mostly the case in countries with a strong regulation imposed by the government or when the institutions dispose of a lot of autonomy. The aim of PAs is to generate a context where institutions and the government talk about in what way institutions can/have (to) contribute to the national agenda specifically aimed at HE. Experiences showed that PAs are a good initiative to improve the dialogue between the two parties and to establish a common ground for fitting agendas and seeking to conformity. In the Netherlands PAs are perceived as a first step towards improving of the interaction (CHEPS, 2015, p. 14).

C Improving main activities and increasing the efficiency of activities

There has been found minimum evidence about a direct relation between PAs/PBF systems and quality, productivity and efficiency in HE. Though, in some countries where performance agreements were introduced, clear enhancements on the three mentioned aspects are observed. For example, in Finland the introduction of PAs seems to have contributed to a growth in cost and performance consciousness. In Denmark, the introduction of PAs led to an increase in the income of the universities´ third party and their outputs in terms of publications. At last, in North-Rhine Westphalia (Germany), performance agreements influenced the international university-decision making in a positive way (CHEPS, 2015, p. 15).

D Improving accountability and transparency

Governments can use auditing and reporting on the stated performance targets and the progression to improve transparency and accountability. This rationale is explicitly set in some countries. A lot of countries imply that performance agreements contribute to better accountability and more transparency (unless the evaluation results are not available for the public). It is usual that higher education institutions report on their achieved performances in their annual reports. Thereby, performance agreements are mostly attached with a demand to (annually) report on the performance and progress. In some countries as Hong Kong and the Netherlands, independent parties have an important role in the assessment of performance agreements (CHEPS, 2015, p. 15).

A.2.3 Performance agreements alongside other policy instruments

Performance agreements are not standing on their own; they are always applied next to other policy instruments. For example, performance agreements can be interconnected to performance-based funding systems. In certain countries there is a direct relationship between the in performance agreements stated targets and the core periodic funding designated to the institutions. Though, in some countries this is not the case; performance and core funding are applied independent of each other. Performance agreements can also be linked to other policy instrument as student selection

mechanisms, results of particular data collections or quality assurance systems. The interaction between distinctive policy instruments demand to treat it carefully as it can have unforeseen consequences. Two examples in this context are elaborated.
First, in the case that institutions are able to select their students they can, as a consequence of PAs, adapt their admission policy. For example, they can decide to have a less restrictive admission policy in order to conform to the set targets (e.g. to contribute to a broader access agenda). Rather, they can also decide to be more restrictive and only choosing the best students to meet with the graduation/completion goals. Second, the interplay of different policy instruments may lead to overlay and reproduction. The reporting demands that are derived from performance agreements can add extra accountability. Strategic plans of the institutions can overlap with (especially comprehensive) performance agreements that focus on institutional profiling or take part of encouraging the communication with the government. This overlap is observed in the Netherlands (CHEPS, 2015, pp. 15-16).

A.2.4 Performance agreements and institutional autonomy

During the last two decades, responsible actors and authorities among stakeholders in higher education generally were significantly redistributed. An overall trend in European Higher Education governance has been to improve the higher education institution´s autonomy. There are different opinions on the extent to which higher education institutions are of opinion that they have real autonomy together with the role of the introduction of PAs herein. Various countries are of opinion that, even though the authority is delegated to the higher education institutions, performance agreements are just another instrument that governments use to ensure that they stay in control. Thereby, it is argued that performance agreements emphasize the institution's resource dependency and restrict the institution's scope to make own choices. Performance agreements as a variant of conditional funding are opposite to lump sum funding, which is perceived as serving institutional autonomy best (CHEPS, 2015, p. 16).
There is obvious a tension between institutional autonomy and PAs. However, the extent and nature of this tension is dependent on the design, process and application of the specific PA. The scope and depth of the PAs are of main importance regarding the space left to the institutions to make own decisions. The more agreements are extensive and described in detail, the more this has a negative impact on the higher education institution´s autonomy. Also, the less institutions are involved from the beginning in the design and application of this instrument, the stronger one is of opinion that there is governmental control over the institutions. This opinion will change, in the case PAs are seen as a result of collaboration whereby both parties can explicit their preferences on confined amount of subjects and leave the institutions some space on how to approach the PAs (CHEPS, 2015, p. 16).

A.2.5 Performance agreements dealing with projected results

A Ex-ante and ex-post funding

PAs cover goals and activities that are assumed to be achieved in the (short-term) future. The agreements are aimed at defining the responsibilities of the involved parties with regard to the desired results. In case funding is linked to these desired outcomes, the question arises when the actual funding occurs. This can take place in two ways. First, the actual funding can take place prior to the realization of the performance with a backlash thereafter, also called *ex-ante* funding. Second, funding can also be provided after the set performance has been achieved, also called *ex-post*

funding. When there is a direct connection between the PAs and the funding formula, it is more likely that ex-ante funding will take place. The Netherlands is a good example of ex-ante funding. The Dutch HEIs receive 5% of their education budget on their education budget on achieving quantitative targets connected to education, though only conditionally. When it turns out later that these targets are not reached, there is a chance that the institutions will lose a part (or all) of the received 5%. In the following round of budget and PAs, the mentioned shortcoming will be settled. In practical situations, ex-ante funding is the most usual case for expected performance. Though, in theory funding can also take place ex-post as a reward; this often occurs when performance-based indicators are applied in a funding formula. When this is the case, the HEIs have to pre-finance the activity that they have to undertake to achieve the agreed performance (CHEPS, 2015, p. 17).

B Gentlemen's agreements and legally binding

Another important question is: 'To what extent are agreements generating a commitment to accomplish a specific activity, executable?' In the case performance agreements are legally binding, both parties can go to court when there occur disputes over non-achievement. It depends on the country if the PAs are legally binding or not. Though, even when they are legally binding, experience showed that it is uncommon that parties go to court over a specific PA. When the agreements are not legally binding, they should be perceived as so called 'gentlemen's agreement'. In general, one is of opinion that these gentlemen's agreements are only morally binding. However, even these kinds of agreements increase expectations that the parties will behave consistent with the agreement; this promotes confidence for the involved parties (also for third parties as the students). When third parties are affected by non-attainment of the stated performance, it depends on the specific national legal system in which way they could take legal action (CHEPS, 2015, p. 18).

C Consequences of non-achievement and non-compliance

Performance agreements involve future performance, and since the future is unknown there exists always a risk that one could not keep a promise. This risk will rise when the performance agreements concern a longer period. Consequently, almost every performance agreement includes *ceteris paribus* conditions and clauses that specify unpredicted circumstances that can lead to changes in the performance agreements. Furthermore, contracts can also be adapted when the involved parties agreed to this.

Though, even if the environment stays stable, one of the parties can act or perform different from what was expected. For example, there is over-performance or under-performance. Thereby, different punishments and rewards can be distinguished. For example, when the Dutch higher education institutions do not meet their set targets, they could lose a part or all of the mentioned 5% in their performance-based budget. This loss will be settled in the next founding round (CHEPS, 2015, pp. 18-19).

A.2.6 Participation of the stakeholders

Performance agreements are a collective undertaking whereby experience and literature showed that the involvement of stakeholders during the whole process is of main importance to establish effective agreements. This suggests that, without any overlooking of the different parties´ responsibilities, important groups from e.g. academic staff and student organizations should be involved in the design process and application of the agreements. While the government takes the control over aspects as developing the instructions, a successful development of the PA will be

achieved by earlier involvement of institutions in the process. This suggests that institutions can, besides negotiating and showing their interests about the agreements´ content, actually express their ideas and perspectives on different subjects as the criteria and the monitoring system. While it is possible that institutions refuse to participate in PAs (because for example they think that it infringes their institutional autonomy), a fair participation with a shared ownership will ease the agreement process. Besides the idea that institutional participation during the whole design process of the specific agreements has contributions to the acceptance of managing through PAs, another important consequence is learning. Experience of some countries with PAs showed that actors become more well-known with this system and are forced to organize the way to put the system in place and the people in their position.
The role of students in this whole system of performance agreements is minimal. When we look at the system level, student organizations can have been asked informally for their opinion about targets and about the designing of the agreement. Though, the student representatives in HEIs are direct involved in the governing boards and its decision-making about the plans related to and implementation of the agreements. In addition to institutional participation, political support of the public also contributes to a prosperous PAs. When the minister of education disposes of maximum political support, he is in a better position during the negotiations then when this is not the case (CHEPS, 2015, p. 19). For future development, it is suggested to establish an independent committee, where expertise areas are represented as the interests of students. This independent committee could have different roles as: a process guiding role, process handling role, a counselling role or an evaluator role. In the Netherlands, such independent committee already exist (CHEPS, 2015, p. 20).

A.2.7 Trade-offs and dilemmas related to performance agreements

The developers of PAs are confronted with various trade-offs. Various trade-offs are already mentioned above. The context of PAs and their aims influence the choices and positions the designers of performance agreements take. Below, different trade-offs are highlighted that should be taken into account when one designs a performance agreement (CHEPS, 2015, p. 20).

A Qualitative and quantitative measures

An important advantage of PAs over other instruments is that one can include both qualitative and quantitative measures. In this way, one can include qualitative measures that are needed for subjects that seem of main importance for the development of a particular HE system at a given time. The drawbacks of applying qualitative targets are: they have (relatively) high transaction costs; they are mostly less transparent and clear than quantitative targets; and the rise of (potential) conflicts at the assessment of the realization of qualitative targets. When we focus on quantitative measures, the advantages transparent, SMART and developing a kind of objectivity can be summed up. In the case of quantitative measures, it is relatively easy to evaluate performance. Quantitative measures are clear measures which provoke more focused action and make certain that the things that are measured are carried out. However, there are also disadvantages related to quantitative measures; only the activity that is measured will be realized. Critics argue that in this case, institutions are only focused on the quantifiable matters and other important issues of HE will be neglected. When one explicitly governs on quantitative targets, institutions can be motivated to focus only on targets that are relatively easy. Another negative consequence is that institutions can also be encouraged to set the quality standards at a lower level as to meet the set targets or to even cheat.

An associated matter involves the level of detail of the measures in the PAs: one can focus on very specific smart targets or one can formulate goals and intentions very broadly. Choose between one of these options, will mainly depend on the goals of the PAs. For improving the communication and developing mutual understanding on important issues, the best option seems reaching agreement on broad targets (CHEPS, 2015, p. 20).

B Uniformity and specificity

Another important issue is to what extent PAs should be made with the individual institutions, the subsectors of the HE sector or the entire HE sector. In the context of the aim to establish a diversified HE system or for maximum supporting the institutions' strengths, bilateral agreements are more appropriate that vary to a certain extent from one institution to the other. PAs with the HE sector as a whole can potentially lead to institutions acting the same. In addition, higher education institutions could be advantaged over the others in this context, in the case HEIs start from another position when they exert oneself for the same goals. Though, these customs made agreements causes high transaction costs and demand that the government has the capacity to overlook the consequences of different contracts on the whole system. Experiences with these bilateral agreements showed that it can be useful to take the dissimilarities of the different HEIs into consideration. Also different intentions, targets and measures are appropriate for the research universities and the universities of applied sciences. Thereby, the government should take into account different types of PAs to acknowledge the distinctive characters of specific institutions CHEPS, 2015, p. 21).

C Focused or comprehensive performance agreements

It is of importance to take a closer look at the numbers of subjects that are summed up in the performance agreements. The more topics covered in the performance agreements, the higher the transactions costs. In this context the distinction is made between focused and comprehensive performance agreements. Focused agreements are more manageable than comprehensive performance agreements. This suggests that extra instruments and policies will be needed to cover those areas which are not covered by the specific performance agreements. Furthermore, in the situation of comprehensive agreements the whole national agenda has to be included into the contract negotiation which makes it hard to have a good and clear dialogue between the institutions and the government (CHEPS, 2015, p. 21).

D Attachment of marginal or substantial budgets to performance agreements

A main question that arises here is if performance agreements could be effective without the attachment of any funding to them. It is argued that when there is no money attached, higher education institution are less motivated to adapt their behavior to the desired results. The Netherlands seem to take this position, which has a long experience with so called 'dialogue-based' relationships between the institutions and the government. In the case the dialogue becomes institutionalized, one needs something else to insure that the behavior of the institutions will be change. And then there is the view that when there are some (substantial) funds attached to the performance agreements, the institutions are less willing to collaborate. Those countries that applied agreements in order to found a strategic dialogue and that attempt to fit the institutional agenda with the national are more unwilling to attach funding to the agreements.
Another issue is: how much funding should be attached to performance agreements. Also in this case, different positions are taken. The perception is that even a marginal funding can have an

enormous effect on the behavior of the institutions, while more substantial findings can have damaging influences. Though, when the amounts of funding are small relating to the institution's made effort, and this institution can obtain funds in another place, there will be a limited impact on institutional behavior. At last, there is conformity on that the fluctuations of the annual budgetary should be retained within acceptable bounds. Various countries included rules to restrict the impacts of performance-based funding and to keep some financial balance for the institutions (CHEPS, 2015, p. 22).

E Existing budgets or additional budgets

In case a country has decided to attach funding to PAs, the question arises to what extent these funding is an additional funding or that it reduces an amount of money of the existing core budget. Some argue that additional funding to the PAs generates a significant stimulus for institutions to accept the agreements, to perform as good as possible and to work extra hard. This could be seen as a bonus for performing more/better with minimum resistance from the HEIs. Other put forward that because public funds are scarce e.g. due to the financial crisis, the ideal of additional budget is hard to attain. More realistic is to give funding as a part of the existing core funding on condition that the institution reaches the set targets. Though, it is hard to distinguish between what can be perceived as an additional effort of the institutions (for which additional funds are given) and what fairly can be expected from the institutions (and funding given from the existing budgets) (CHEPS, 2015, p. 22).

Appendix 3: Structure of the Spanish HE and funding mechanism in the Spanish HE

A.3.1 Structure of the tertiary education system in Spain

The tertiary education system in Spain consist of universities and non-university institutions (see figure 2). However, in practice, the Spanish higher education system functions more as a uniform system comprised of only universities. A total of 79 universities are counted (consisted of 50 public and 29 private) in 2014 (European Consortium for Accreditation, 2014). The non-university institutions are in their turn divided into post-secondary vocational tertiary education (Ciclos Formativos Superiores (CFS)) and specialised tertiary education e.g. study of sports or design (OECD, 2010, pp. 48-49). Higher vocational education is mostly provided in centres that are based in private and public schools and by means of distance education. In 2004, 2355 centres were counted in Spain providing higher vocational education (consisting of 1604 public, 520 public-subsidised and 232 independent private) (OECD, 2009, p. 20).There is a total amount of 1.8 million students enrolled in the Spanish tertiary education system by 2012 (UNESCO, 2012). Universities are regulated by specific University Organic Laws (LOU). Non-universities are, on the other hand, regulated by the Organic Law on Education (LOE) (that also regulates, inter alia, pre-school, primary and secondary education) (Catalonia's Regional Steering Committee, 2010, p. 12).

The Spanish national regulation states that a university provides public service through teaching, learning and research. Universities have also a couple of obligations to the society (Catalonia's Regional Steering Committee, 2010, p. 12):

- The creation, development, diffusion and criticism of technology, culture and science.
- Preparing students for activities that are professional related, which requires artistic creation, scientific methods and knowledge.
- The diffusion, appraisal, and distribution of knowledge for the quality of life, economic development and culture.
- Culture and knowledge distribution by lifelong learning and university expansion.

Universities dispose of a certain amount of autonomy. For example, private universities can develop and apply their own internal organisation rules, public/private universities can develop their own statutes, universities can create supportive structures for teaching and research and the way universities allow and asses students (Catalonia's Regional Steering Committee, 2010, pp. 12-13). The validation of official degrees throughout the country is also an important example of autonomy of the Spanish universities. Spanish universities can offer official courses, which can lead to official degrees that are valid across Spain, and non-official courses, which maybe not lead to official degrees but could a part of a professional specialization. The Spanish state had control over the defining of the curriculum of each official degree in order to guarantee national diplomas. From 2008, the Spanish universities took over this power and could define curricula themselves (OECD, 2010, p. 49 and Catalonia's Regional Steering Committee, 2010, p. 13).

Spanish universities and their university degree structure have been undergone a major change after the introduction of the Bologna process. Previous to the Bologna reform, the Spanish universities had two types of programmes: short-cycle programmes (focused on vocational) and long-cycle programmes (had a more academic base or were concentrated in professions as engineers). The university degree structure changed since 2009-2010. The structure now consist of undergraduate

(240 ECTS credits) and postgraduate education that is divided into master's level studies (60-120 ECTS credits) and doctor's level studies (OECD, 2010, p. 49).

Important to note is that the Spanish higher education primarily consists of university institutions. The term 'higher education' is principally equal to the term 'university education' (Jongbloed, De Boer, Enders & File, 2010, p. 572). The rest of this document is thereby focused on university institutions.

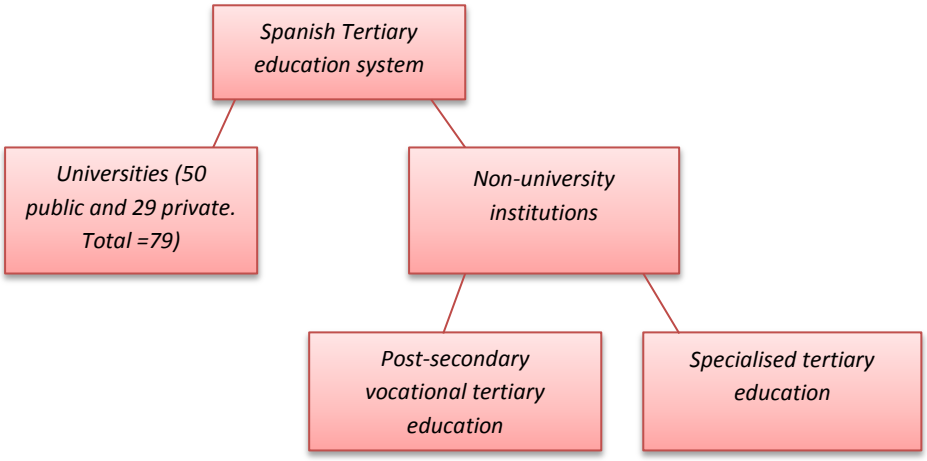

Figure 2: The tertiary education system in Spain

A.3.2 Funding mechanism in the Spanish tertiary education system

The funding system of Spanish public universities is based on three main sources (Catalonia's Regional Steering Committee, 2010, p. 18 and File, 2006, p. 45):

- Subsidies provided by the public government; the central state of Spain provides most of the grants and scholarships allocated to students. The autonomous region of Catalonia provides the general funding and funding for the investments made by the universities.
- Tuition fees that are paid by the students; this covers less than 15 per cent of the total cost of university education.
- Public and private funding for activities related to research and other services as the transfer of knowledge, continuous training, patents and contracts provided by the universities. Thereby public funding subsidies cover about 85 per cent of total university income. These public subsidies consist of: general subsidies normally based on objective input indicators; specific subsidies that are aimed at strategic projects or specific characteristics to each specific institution; and subsidies of a competitive character (private universities can also request these kinds of subsidies) which occur mostly in the area of research funding. The universities also receive public funding for long-term investment plans for equipment and infrastructure.

However, the formula funding has changed recently. There is a focus on outputs and goal-oriented national funding as a stimulus to strengthen teaching quality and to promote (inter)national student mobility (Catalonia's Regional Steering Committee, 2010, p. 18).

The autonomous communities are responsible for the public funding of higher education in their community. This results in different approaches for public funding of higher education institutions across the different communities in Spain. The autonomous communities mostly replaced the

traditional incremental allocation system to more formula-based models. For the funding of activities related to research, research staff are demanded to apply to the diverse competitive funding programmes made available from European, national and regional institutions (Catalonia's Regional Steering Committee, 2010, 18 and OECD, 2010, p. 51 and OECD, 2009, p. 42). The autonomous communities provide to each public university in their community public funds as a lump sum. The Social Council that is responsible for the control of the universities' financial activities must approve its budget. Additionally, there is a separate provision of funds for enhancing facilities and for infrastructure though investment plans for multi-years (Catalonia's Regional Steering Committee, 2010, p. 18). Public subsidy for teaching activities is not provided to private universities. Nevertheless, these universities are eligible for some public funding. Private universities can apply to competitive research funds and the students of these universities are eligible for the national scholarship system. The income of private institutions consists for a main part of tuition revenues; the budget is covered less than 80% by students' fees (Catalonia's Regional Steering Committee, 2010, p. 19).

Furthermore, the university funding specifically aimed at R&D&I activities, is based on three sources (Catalonia's Regional Steering Committee, 2010, p. 19 and OECD, 2009, pp. 42-43):

1. The first source is the National Research Plan. This plan is developed around the stated national priorities.
2. The second source is the Regional Plans for R&D&I (total of 17), by means of which regional authorities finance the activities related to innovation and research implemented by the universities.
3. The last source is the European Union, through participation of Spain in the Research and Development Framework Programme, receiving funds form the European Technology Fund 2007-2013 and receiving specific funding from the Structural Funds.

Appendix 4: Special case: programme-contracts and the Open University of Catalonia

The case of the Open University of Catalonia is different compared to the other public universities in Catalonia. This is a private foundation with a main stakeholder which is the Government of Catalonia. This main stakeholder assures yearly subvention, which is 1/3 of the income of the University Oberta de Catalunya. This subvention of the government consists of three parts: general expenses (for all the operating activities of the university), investments (in terms of materials or building) and performance indicators. The performance indicators are approximately 10% of the total funding of the government to OUC. This university has an individual contract programme with the Catalan government. These contract programmes are valid for a four years period. These programmes include the three mentioned elements of the funding (general expenses, investments and performance indicators). As this is a particular case, this university proposed to the Government that the performance part of the contract programme has to be increase in the next four year with 5% every year with an preferable percentage of 25% related to performance indicators after a couple of years (University Oberta de Catalunya, 2015).

As this is an Open University and different in various aspects of the other Catalan public universities, there is a different system related to PBF applied to this university. As many of the performance indicators are the same as the other public universities (as number of graduates and number of students), there are also specific indicators that apply for this university. For example, there is the indicator including the level of internalization (how many students do you have from abroad) and the indicator including the amount of agreements the UOC has with other Catalan public universities (UOC is nowadays working with the other universities in order to help them to have more blended offers, to focus, inter alia, more on providing distance learning). Table 17 shows the initial proposal of the weights per objectives and indicators for the University Oberta of Catalunya (University Oberta de Catalunya, 2015).

Future developments of performance contracts at the Open University of Catalonia

The UOC suggests that in the future a good indicator should be ´the percentages of graduates that have work after graduation´. This indicator will force universities to offer programmes that conform the needs of the industry. This university argues that at the moment there is a mismatch between what the university is offering and what the industry wants; which leads to a high level of unemployment. Furthermore, this university indicates that for the future (more) indicators related to research and development is a must (University Oberta de Catalunya, 2015).

Objectives	Associated indicators	Weight
1. Education (65%)	1. Number of students enrolled in undergraduate. 2. Number of students in undergraduate degree. 3. Number of students enrolled in official master studies. 4. Number of official studies offered in collaboration with other universities of Catalonia. 5. Dropout rate in official studies. 6. % of graduates that accredits level B2 in other languages 7. % of graduates that are inserted into the workplace by developing college-level functions. 8. % of foreign students enrolled in official studies vs total enrolled students. 9. The number of people participating in learning activities of the UOC: MOOCS, didactic resources etc.	(10%) (10%) (10%) (5%) (3%) (3%) (10%) (10%) (4%)
2. Research and knowledge transfer (25%)	10. Income from competitive financial projects (moving average) 11. The number of international projects RDI and participating in PDI of the university. 12. Income from transfer of research results. 13. Income from licenses and patents of technologies and learning objects.	(10%) (5%) (5%) (5%)
3. Organization and management structure (10%)	14. Indicator involving the position in rankings (pending specify). 15. The number of countries with constant and sustainable presence. 16. Volume of economic activities of the university which are managed through CSUC (%)	(3%) (3%) (4%)

Table 17: Initial proposal of the weights per objective and indicator for the Open University of Catalonia (Document Open university of Catalonia, 2015).

Appendix 5: Extra information: Spanish regulatory framework and HE system governance

Other important actors in developing the Spanish university policy

Another important actor in developing the university policy is the Conference of Rectors of Spanish Universities (*Conferencia de Rectores de las Universidades Españolas*), which gives the Spanish universities the opportunity to influence the development of policy on the subject of HE. In 2004, the Conference of Social Councils of the Spanish Public Universities (*Conferencia de Consejos Sociales de las Universidades Públicas Españolas*) was established with the purpose to support the activities of the Social Councils, encourage the co-cooperation and experience exchange between the Social Councils, collaborate in the initiatives between society and universities and to advocate the role of the Social Council (Catalonia's Regional Steering Committee, 2010, p. 15). Further, the universities within numerous autonomous communities represent their interests by associating together. The Catalan Association of Public Universities (ACUP) is a good example of these kinds of initiatives (Catalonia's Regional Steering Committee, 2010, p. 15).

The national higher education regulation also decided on the foundation of different individual roles and collegial bodies in the institutions (Catalonia's Regional Steering Committee, 2010, p. 15):

- Collegial bodies: The University Senate; Governing Council; Social Council; Faculty and School Councils; and Departmental meetings.
- Individual roles: The rector; the vice-rector; the secretary general; manager; faculty deans; the School, Department and Institute Directors of Research.

Internal governance within Spanish higher education institutions

The most important actors at the institutional level of the HEIs are: the Social Council, the Governing Council and the University Senate. The Governing Council is perceived as the university´s 'organ of government'. This actor sets up the strategic lines and programmatic of the university, the university budget and the procedures and policies in teaching, research, human resources and economic areas. The University Senate is the university community's 'senior representative organ'. The Rector is in charge of this body, the University Manager and the General Secretary are members of it together with a maximum of 300 elected members in line with the regional laws and the statutes of the university (Catalonia's Regional Steering Committee, 2010, pp. 15-16 and Jongbloed, De Boer, Enders & File, 2010, p. 575). The 'organ of participation of the society in the university' is the Social Council. The main tasks of this body are: the supervision of the university's economic activities and of the performance of his offered services; stimulating the contribution of the society to the financing of the university; and promoting the relations between the university with its external environment (more specific, its professional, social, economic and cultural environment). Moreover, the Social Council decides over the by the Governing Council proposed university´s plural-annual programming and the budget. The Social Council was set up as an external body which is representative of the wider interests of the society within the university. Though, in general, the real impact of this body is minimal, because of, inter alia, an ambiguous legal definition of its role (Catalonia's Regional Steering Committee, 2010, p. 16 and Jongbloed, De Boer, Enders & File, 2010, p. 575).

Appendix 6: Profiles of the Catalan universities

1 University of Barcelona (UB)

❖ **PROFILE** The University of Barcelona is the public Catalan university with the broadest educational offering and has the largest number of students. It is perceived as the most important university research centre in Spain and one of the main ones in Europe; both by reason of the number of research programmes the university generates and the high attained quality in this field. This university has a noteworthy position in the most significant rankings based on various indicators and geographical regions; at Spanish, European and Worldwide level. UB combines tradition with innovation, excellence and teaching. It can be characterized as a university that is open, urban and cosmopolitan. The UB is also member of the highly influential League of European Research Universities (LERU) since 2010. Important to note is that this university is the only Spanish university that is invited to participate in the LERU (Associació Catalana D'universitats Públiques, 2014, p. 4).

2 Universitat Autònoma de Barcelona (UAB)

❖ **PROFILE** This university provides flexible, multidisciplinary, varied and high quality teaching. The UAB is internationally famed for the innovative and high quality of research that it develops. It holds a leading position in most influent and reputable international university rankings (Associació Catalana D'universitats Públiques, 2014, p. 6). Further, the UAB holds a most significant position in PhD thesis production in Catalonia (academic year 2010-2011) (Associació Catalana D'universitats Públiques, 2014, p. 7). This university incorporates many departments, research groups, institutes and centres, whereby many of them are developed in cooperation with significant scientific institutions. One of the main goals of the UAB is the internationalisation of research and teaching. This international dimension is visible in the amount of students that come from abroad, particularly in master's degree (45%) and PhD programmes (40%) (Associació Catalana D'universitats Públiques, 2014, p. 7).

3 Universitat Politècnica de Catalunya – Barcelonatech (UPC)

❖ **PROFILE** UPC can be characterized as the leading university in the areas of architecture, sciences and engineering. This is a public research institution in higher education that offers studies of top-quality in the mentioned areas (Associació Catalana D'universitats Públiques, 2014, p. 8). UPC is a research university that is devoted to talent and innovation. This university is prominent in the research area that actively cooperates with institutions and firms on (inter) national level. UPC generates projects, provides services and offers solutions which are made accessible to the productive fabric with the help of top level technological and scientific infrastructures which are managed by highly competent professionals. At last, this university offers international studies by means of 97 double qualification agreements with universities worldwide (Associació Catalana D'universitats Públiques, 2014, p. 9).

4 Universitat Pompeu Fabra (UPF)

❖ **PROFILE** The Universitat Pompeu Fabra can be described as a public, modern and young university which is established in 1990 with the intention to become a university of reference on European level. The activities of the UPF related to teaching and research revolve around human beings. The UPF provides integral teaching focused on the individual student. Various indicators authorize this model´s success e.g. the high demand of studying at this university or the high percentages related to satisfaction, success and inclusion into the labour market of graduates and students (Associació Catalana D'universitats Públiques, 2014, p. 10). The UPF model is feasible due to the high competiveness of the researchers and lecturers at the UPF, which has at all times been dedicated to a policy of contracting teaching staff open to (inter)national talent. The UPF´s high international profile is the sum of attracting lecturers with international influence in their career and

a strategy that stands on creating a policy of alliances with a network of preferred members (Associació Catalana D'universitats Públiques, 2014, p. 11).

5 Universitat de Girona (UdG)

❖ **PROFILE** The Universitat de Girona is a dynamic, young and public university that strives to turn into a benchmark university of the Mediterranean Arc by means of excellence in research, teaching and knowledge transfer. The UdG can be characterized as a homogenous ensemble with a direct, agile and individualised relationship between the students and the teaching staff (Associació Catalana D'universitats Públiques, 2014, p. 12). Furthermore, this university encourages the quality of the study programmes that it offers. The UdG´s research activity is implemented through research groups connected to research institutes and departments. At last, internationalisation is identified by UdG as an essential strategy for the University`s future and it generates it in different areas (for example: mobility of teachers and students and international teaching activity) (Associació Catalana D'universitats Públiques, 2014, p. 13).

6 Universitat de Lleida (UdL)

❖ **PROFILE** The first university institution in Catalonia is the Universitat de Lleida which was established in 1300.The goal of the UdL is the generation, diffusion and application of knowledge. The Universitat de Lleida is known for its dedication to its territory, its human dimension and providing of teaching staff that stand close to its students (Associació Catalana D'universitats Públiques, 2014, p. 14). The UdL is also solidly committed to research, resulting in having three centres in the CERCA network of the Generalitat of Catalonia focusing on different research subjects. Additionally, the Universitat of Lleida strives to give the whole university community an international projection through e.g. encouraging students to take part in academic mobility programmes (Associació Catalana D'universitats Públiques, 2014, p. 15).

7 Universitat Rovira I Virgili (URV)

❖ **PROFILE** The Catalan Parliament created URV in 1991. The aim of the URV is to attain maximum quality training, aimed at obtaining competencies and knowledge that secure success in taking part in the professional world. The URV is known as a research institute; thereby it offers doctorate programmes of high quality (Associació Catalana D'universitats Públiques, 2014, p. 16). This University also works to strengthen all research activities among its members, placing attention on potentiate the different groups and on the scope and the quality of its scientific production. Finally, URV is aimed at educate global citizens; consequently it is developing its own Strategic Internationalisation Plan to assure a better interplay of the university community with its international setting (Associació Catalana D'universitats Públiques, 2014, p. 17).

8 Universitat Oberta de Catalunya (UOC)

❖ **PROFILE** Universitat Oberta de Catalunya (also called Open University of Catalonia) is an innovative, distinguished and online university whose education model and technological use has given it international glory. The UOC has a flexible and dynamic education model that revolves around the learning process of the student. Students work on their own tempo and plan and fit their studies conforming to their knowledge and interests. The goal of UOC is to get rid of time-related and geographical restrictions, therefore making lifelong learning and high quality university education accessible to all people. It encourages an innovative model of education, a technological structure useful for cooperative work, knowledge dissemination and research into the information society and e-learning (Associació Catalana D'universitats Públiques, 2014, p. 18).

9 University Ramón Llull (URL) (private university)

❖ **PROFILE** URL is a private university that prepares professionals for the future society. Thereby, this university carries out scientific research of top-level and encourages a creative and innovative spirit. An important objective of this university is academic and pedagogical excellence. Consequently, URL constantly works and renovates itself, while trying to ensure that there are enough resources accessible for the students (Universitat Ramon Llull, 2015a). Another priority objective of the URL is to provoke innovation by means of research in order to be competent to react to the fundament challenges the society is facing nowadays. Simultaneously, the URL also stimulates knowledge transfer, devoted to the R&D&I needs of the society and companies (Universitat Ramon Llull, 2015b).

10 University of Vic (private university)

❖ **PROFILE** Since this university is established in 1997, the university is constantly focusing on developing its activities allied to research and knowledge transfer. A significant priority is given to research, whereby recently also two research development plans are carried out with the purpose of bringing its research and knowledge transfer attainment to a higher level (to become on equal ground with similar universities). The implemented research is formed around 16 research groups who are active in the fields of Social Science and Experimental Science, Medicine, Humanities. This increase in research activity of the University of Vic led to an improved competitive position and to various collaboration agreements with companies and institutions that subsequently contributes to regional development, (inter)national renowned and knowledge transfer (University of Vic, 2015).

11 International University of Catalonia (UIC) (private university)

❖ **PROFILE** The International University of Catalonia is a non-profit, private university established in 1997 with the ambition to serve the society. An individualized academic education with an international approach is provided by this university, with a main focus on professional experience and research. The university is devoted to provide personalized education of high quality. They are aimed at increasing the students´ knowledge and skills so that they can adapt without any difficulty to challenges of the modern world. The university has tight relationships with the business community by means of internships programs over whole Europe. This university´s renown is reflected in the way the business community appreciates the graduates of this university; as demonstrated by the high percentage of graduates who find after their graduation directly their first employment (QS Quacquarelli Symonds Limited, 2015).

12 University Abat Oliba CEU (UAO CEU) (private university)

❖ **PROFILE** This university is one of the three universities that is promoted by the San Pablo CEU foundation. The main aim of the University of Abat Oliba is to construct a university community of knowledge competent to provide our society professionals with an academic excellence and who involved themselves in the common good. From its establishment in 2003, this university wanted to adjust its resources and planning to the demands of the European Higher Education Area. For this reason, this university is well-known with the continuous connection between students and teachers, the working methods, the constant evaluation and the introduction of innovation resources related to teaching. Besides, this university also wants to provide its students tutorials with their own developed criteria to, inter alia, expand the students´ comprehensive intellectual education (Universitat Abat Oliba CEU, 2015a).

Appendix 7: The public administration systems and economy of NL and SP

A The public administration system in the Netherlands versus Spain

	Netherlands	*Spain*
State structure	Unitary; fairly fragmented	Federal
Government type	Constitutional Monarchy	Parliamentary Monarchy
Administrative divisions	12 provinces (Drenthe, Flevoland, Fryslân (Friesland), Gelderland, Groningen, Limburg, Noord-Brabant, Noord-Holland, Overijssel, Utrecht, Zeeland and Zuid-Holland)	-17 autonomous communities (Andalucia, Aragon, Asturias, Canarias, Cantabria, Castilla-La Mancha, Castilla-Leon, Catalonia, Comunidad Valenciana, Extremadura, Galitcia, Illes Baleares, La Rioja, Madrid, Murcia, Navarra, Basque country). -2 autonomous cities: Melilla and Ceuta
Executive branch	-*Head of State:* King Willem-Alexander. -*Head of government:* Prime Minister Mark Rutte. -*Cabinet:* Council of Ministers appointed by the monarch. -*Elections:* Monarchy is based on heredity; following the elections of the Second Chamber, the leader of the majority party/coalition mostly appointed the prime minister by the monarch; the deputy prime ministers are appointed by the monarch.	-*Head of State:* King Felipe VI. -*Head of government:* President of the government is Mariano Rajoy. -*Cabinet:* Council of Ministers appointed by the president. -*Elections:* Monarchy is based on heredity; following the elections of the legislative, the leader of the majority party/coalition mostly proposed president by the monarch and elected by the National Assembly; Council of Ministers and vice president are appointed by the president.
Executive Government	Consensual	Consensual
Legislative branch	Staten Generaal includes the First Chamber or Eerste Kamer (75 seats) and the Second Chamber or Tweede Kamer (150 seats). The First Chamber members are indirectly elected by the country's 12 provincial councils to serve a period of four years. The Second Chamber members are elected by popular vote to serve a period of four years.	Las Cortes Generales (National Assembly) is made up of the Senate or Senado (265 seats in 2014; 208 members directly elected by popular vote and 57 members are appointed by the regional legislatures; members to serve a period of four years) and the Congress of Deputies or Congreso de los Diputados (350 seats; each of the 50 electoral provinces fills a minimum of two seats and the autonomous cities Ceuta and Melilla fill one seat each with members serving a period of four years; the other 248 members are determined by proportional representation based on popular vote on block lists who serve a

		period of four years).
Judicial branch	Highest court(s): Hoge Raad or Supreme Court. The court is distinguished into chambers of criminal, tax, civil and ombuds chambers.	Highest court(s): Tribunal Supremo or Supreme Court and Constitutional Court or Tribunal Constitucional de Espana.
Legal system	Civil law system based on the French system. Thereby constitution does not allow judicial review of acts made by the States General.	Civil law system with variations in the regions.
Minister/Mandarin Relations	Separate Fairly politicized	Integrated
Administrative culture	Germanic	Napoleonic

Table 18: Features of the public administration system in Spain and the Netherlands (Pollitt & Bouckaert, 2011, p. 50 and IndexMundi, 2014a)

B The economy of the Netherlands versus Spain

	Netherlands	*Spain*
Economy overview	Netherlands is the sixth largest economy in the euro-zone.	Spain experienced a long recession in the context of the global financial crisis. Moderated economic growth resumed in late 2013; as credit contraction in the private sector, high unemployment and fiscal austerity continued to have a big impact on domestic consumption and investment.
GDP – real growth rate	-0.8% (2013 est.) -1.2% (2012 est.) 0.9% (2011 est.)	-1.3% (2013 est.) -1.6% (2012 est.) 0.1% (2011 est.)
GDP – per capita	$43.300 (2012 est.) $43.200 (2011 est.) $41.600 (2010 est.)	$30.100 (2013 est.) $30.500 (2013 est.) $31.000 (2011 est.)
Population below poverty line	9.1% (2013 est.)	21.1% (2012)
Budget	Revenues: $315.5 billion Expenditures: $339.3 billion (2014 est.)	Revenues: $505.1 billion Expenditures: $597.3 billion (2013 est.)
Public debt	74.3% of GDP (2013 est.) 71,3% of GDP (2012 est.)	93.7% of GDP (2013 est.) 85.9% of GDP (2012 est.)

Table 19: Economic overview of the Netherlands versus Spain (IndexMundi, 2014b)

Appendix 8: Size of the Catalan and Dutch universities

A The size of the Catalan universities

Universities Catalonia	Amount of students; including undergraduate (first and second cycle) and postgraduate (Master and PhD)	Academic and research staff (in persons)	Faculties and schools	Research Centres and institutes
University of Barcelona (UB)	56.567	5.312	19	30
Autonomous University of Barcelona (UAB)	34.244	3.629	14	27
Polytechnic University of Catalonia (UPC)	33.894	2.431	17	16
University Pompeu Fabra (UPF)	17.204	558	8	7
University of Girona (UdG)	15.056	1.155	10	11
University of Lleida (UdL)	10.074	997	9	5
University Rovira i Virgili (URV)	14.037	921	12	14
University Oberta de Catalunya (UOC)	43.362	372	-	2
University Ramón Lull	14.661[2]	1.110[3]	14[4]	3[5]
University of Vic	5.909[6]	536[7]	6[8]	4[9]
International University of Catalonia (UIC)	4.401[10]	242[11]	8[12]	5[13]
University Abat Oliba	1.386[14]	<50[15]	5[16]	5[17]

Table 12: Size of the Catalan universities

Important to note: unless otherwise stated, all data corresponds to the academic year 2012-2013. The statistics for the public universities in this figure (the first eight universities) are received from: (Associació Catalana D'universitats Públiques, 2014, pp. 4-19).

[2] Total students enrolled in official degree programmes (University Ramón Lull, 2014)
[3] (University Ramón Lull, 2014)
[4] (University Ramón Lull, 2014)
[5] (University Ramón Lull, 2014)
[6] Statistics based on the annual report of the academic year 2013-2014 (University of Vic, 2014, p. 4)
[7] Statistics based on the annual report of the academic year 2013-2014 (University of Vic, 2014, p. 5)
[8] Statistics based on the academic year 2013-2014 (University of Vic, 2015a)
[9] Statistics based on the academic year 2013-2014 (University of Vic, 2015b)
[10] Statistics based on the academic year 2013-2014 (International University of Catalonia, 2014a)
[11] Statistics based on the academic year 2013-2014 (International University of Catalonia, 2014a)
[12] Statistics based on the academic year 2013-2014 (International University of Catalonia, 2014b)
[13] Statistics based on the academic year 2013-2014 (International University of Catalonia, 2014b)
[14] (University Abat Oliba, 2013, p. 7)
[15] (4ICU, 2015)
[16] (University Abat Oliba, 2015a)
[17] (University Abat Oliba, 2015b)

B The size of the Dutch universities

Universities Netherlands	Amount of students; including undergraduate (first and second cycle) and postgraduate (Master and PhD)	Academic and research staff (in persons)	Faculties and schools	Research Centres and institutes
Leiden University (LEI)	21.357[18]	1.147[19]	7[20]	29[21]
University of Groningen (RUG)	28.035[22]	2.059[23]	10[24]	>40[25]
VU University Amsterdam (VU)	24.517[26]	2.978[27]	12[28]	28[29]

[18] Total students enrolled (full time + part time + extraneous) = 20.704 (Leiden University, 2014, p. 19). Employed PhD = 653 (Leiden University, 2014, p. 68).
[19] Scientific staff (WP) employed in persons = 1.147 (Leiden University, 2014, p. 68).
[20] (Leiden University, 2014, p. 8).
[21] (Leiden University, 2014, p. 8).
[22] Total students enrolled = 27.345 (University of Groningen, 2013, p. 87). Employed PhD = 690 (University of Groningen, 2013, p. 88)
[23] Scientific staff (WP) employed in persons= 2.059 (University of Groningen, 2013, p. 88)
[24] (University of Groningen, 2015a).
[25] (University of Groningen, 2015b)
[26] (VU University Amsterdam, 2013, p. 7)
[27] Scientific staff (WP) employed in persons (VU University Amsterdam, 2013, p. 7)
[28] (VU University Amsterdam, 2013, p. 7)
[29] This number is an estimation; including interdisciplinary research institutes and (inter)faculty research centers (VU University Amsterdam, 2015)

Delft University of Technology (TUD)	17.530[30]	2.491[31]	8[32]	23[33]
Eindhoven University of Technology (TU/e)	7.611[34]	1.792[35]	9[36]	8[37]
Erasmus University Rotterdam (EUR)	22.827[38]	1.031[39]	7[40]	20[41]

[30] (3TU Federation, 2015)
[31] (3TU Federation, 2015)
[32] (Delft University of Technology, 2014, pp. 113-114)
[33] (Delft University of Technology, 2015)
[34] (3TU Federation, 2015)
[35] (3TU Federation, 2015)
[36] (Eindhoven University of Technology, 2015a)
[37] (Eindhoven University of Technology, 2015b)
[38] Total students enrolled = 22.477 (Erasmus University Rotterdam, 2013, pp. 21-22)
PhD = 350 (Erasmus University Rotterdam, 2013, p.42)
[39] HL + UDH + UD + other Scientific Staff (WP) in persons (Erasmus University Rotterdam, 2013, p. 42)
[40] (Erasmus University Rotterdam, 2015a)
[41] (Erasmus University Rotterdam, 2015b)

Maastricht University (UM)	15.924[42]	2.158[43]	6[44]	36[45]
Utrecht University (UU)	29.755[46]	3.528[47]	7[48]	>30[49]
University of Amsterdam (UvA)	29.594[50]	2.486[51]	7[52]	48[53]

[42] Total students enrolled (Maastricht University, 2013, p. 30)
[43] Scientific staff (WP) employed in persons (Maastricht University, 2013, p. 36)
[44] (Maastricht University, 2012)
[45] (Maastricht University, 2014)
[46] Total students enrolled (Utrecht University, 2013, p. 11)
[47] Scientific staff (WP) in fte is 2828 multiplied with 6370 (total employees) and divided by 5106 fte (fte of total employees) gives Scientific staff (WP) in persons (Utrecht University, 2013, p. 11 and 13).
[48] (Utrecht University, 2013, p. 18)
[49] (Utrecht University, 2015)
[50] Total students enrolled excluded the 279 UvA employees (largely consisting of student assistants) that are counted in the annual rapport (University of Amsterdam, 2013, p. 7)
[51] Scientific staff (WP) in fte (University of Amsterdam, 2013, p. 7)
[52] (University of Amsterdam, 2015a)
[53] (University of Amsterdam, 2015b and University of Amsterdam, 2015c)

Radboud University Nijmegen (RU)	18.101[54]	2.806[55]	7[56]	18[57]
Tilburg University (TiU)	12.952[58]	1.240[59]	5[60]	44[61]
University of Twente (UT)	9.313[62]	1.684[63]	5[64]	26[65]
Wageningen University (WUR)	8.248[66]	1.555,4[67]	6[68]	11[69]

Table 14: Size of the Dutch universities

Important to note: unless otherwise stated, all data corresponds to the academic year 2012-2013.

[54] Total students enrolled (Radboud University Nijmegen, 2014, p. 20)
[55] Scientific staff (WP) in fte (Radboud University Nijmegen, 2014, p. 119)
[56] (ArnhemNijmegen City Region, 2015)
[57] (ArnhemNijmegen City Region, 2015)
[58] Total students enrolled (Tilburg University, 2014, p. 125)
[59] Scientific staff (WP) in fte is 963 which should be multiplied with 2120 (total employees in 2012) and divided by 1645,8 (fte of the total employees) gives the Scientific staff (WP) in persons (Tilburg University, 2014, pp. 130-131).
[60] (Tilburg University, 2015a)
[61] (Tilburg University, 2015b)
[62] (3TU Federation, 2015)
[63] (3TU Federation, 2015)
[64] (University of Twente, 2015)
[65] Most of the research takes place in 4 big research institutes, the other 22 are small knowledge and research centers/institutes (University of Twente, 2013, pp. 41-42)
[66] Total students enrolled (Wageningen University, 2014, p.8)
[67] Scientific staff (WP) in fte (Wageningen University, 2014, p. 84)
[68] (Wageningen University, 2015a)
[69] (Wageningen University, 2015b)

Appendix 9: PA and PBF Dutch Universities individually

In this document of *PA and PBF Dutch Universities individually* is referenced to the individually advises by the review committee per university.

1 Erasmus University Rotterdam (EUR)

❖ **PROFILE** The Erasmus University Rotterdam is a research university with a distinctive social orientation in her education and research. Researchers and students at the Erasmus University Rotterdam work on the global social challenges in the context of a metropolis. This university wants further to strengthen her profile as regional rooted and international excelling research university. This university is, with regard to her education supply and research areas, a specialized university and wants to maintain this profile. The Erasmus University entered into a strategic alliance with Delft University of Technology and Leiden University, in the context to have the potential to be among the world top (Reviewcommissie voor Hoger Onderwijs en Onderzoek, Advies Erasmus Universiteit Rotterdam, 2012, p. 1).

❖ **JUDGEMENT ABOUT THE PROPOSAL BY THE REVIEW COMMITTEE**

1 AMBITION. In the context of education quality and study success, the education supply, research and valorization, all predominantly, the review committee evaluates the institution's proposal as ambitious and achievable.

2 ALIGNEMENT. The review committee judges, all predominantly, that the Erasmus University Rotterdam with her proposal substantially commits to education differentiation and centre of gravity formation.

3 FEASIBILITY. The review committee is of opinion that the proposal of the Erasmus University Rotterdam is feasible (Reviewcommissie voor Hoger Onderwijs en Onderzoek, Advies Erasmus Universiteit Rotterdam, 2012, pp. 2-3).

❖ **ADDITIONAL INDICATORS**

-Streamlining / expansion of the honors programs.
-6.5 million euro spend the next 5 years annually to top research groups.
-Increasing of the KP7 grants / Grand Challenges grants.
-The percentage of incomes off the first government funding that will be spend on valorization is 2.5 % (Reviewcommissie voor Hoger Onderwijs en Onderzoek, Advies Erasmus Universiteit Rotterdam, 2012, pp. 3-4).

❖ **USED DEFINITION FOR THE MANDATORY INDICATORS:** WO1 – WO7; RHCOO definition.

2 University of Groningen (RUG)

❖ **PROFILE.** The University of Groningen wants to be an international research university. Within the research conducted by the University of Groningen are fundamental research and applied research strongly connected. The education supply within the bachelor phase is broad and differentiated, focused on the talent diversity of the students. The supplied master programs align the research profile of the university itself and are consistent with the needs of the labour market. This university want to connect itself regional, national and international within sustainable networks. The profiling of the university is focused on social themes whereby the university can add significant contributions (Reviewcommissie voor Hoger Onderwijs en Onderzoek, Advies Rijksuniversiteit Groningen, 2012, p. 1).

❖ **JUDGEMENT ABOUT THE PROPOSAL BY THE REVIEW COMMITTEE**

1 AMBITION. In the context of education quality and study success, the education supply, research and valorization, all predominantly, the review committee evaluates the institution's proposal as ambitious and achievable.

2 ALIGNEMENT. The review committee judges, all predominantly, that the University of Groningen with her proposal strongly commits to education differentiation and centre of gravity formation.

3 FEASIBILITY. The review committee is of opinion that the proposal of the University of Groningen is feasible (Reviewcommissie voor Hoger Onderwijs en Onderzoek, Advies Rijksuniversiteit Groningen, 2012, pp. 1-3).

- **ADDITIONAL INDICATORS**

-Tightening Of 'The Binding Study Advice' (BAS) standard of 40 to 45 ECTS and possible to 50 ECTS.
-Introducing of the learning communities in 6 faculties.
-Four applications for NWO Gravity Programs.
-The University of Groningen will be in 2015 stable in the top 100 of the world in the most important international rankings.
-At least 12 patent licenses per year.
-The number of knowledge intensive start-ups of 5 to 15 per year (Reviewcommissie voor Hoger Onderwijs en Onderzoek, Advies Rijksuniversiteit Groningen, 2012, p. 4).

- **USED DEFINITION FOR THE MANDATORY INDICATORS:** WO1 – WO7; RHCOO definition.

3 Delft University of Technology (TU Delft)

- **PROFILE** This university contributes substantially to a durable society of the 21th century by means of providing technical-scientific research of recognized international level, by educating socially concerned engineers and doctors, and by helping to convert knowledge into economic and social valuable technological innovation and activity. The Delft University of Technology wants to maintain to be a technical university with a worldwide reputation and wants to provide a broad range of education programs, disciplines, and unique facilities in the field of engineering sciences. (Reviewcommissie voor Hoger Onderwijs en Onderzoek, Advies Technische Universiteit Delft, 2012, p. 1).

- **JUDGEMENT ABOUT THE PROPOSAL BY THE REVIEW COMMITTEE**

1 AMBITION. In the context of education quality and study success, the education supply, research and valorization, all predominantly, the review committee evaluates the institution's proposal as mostly ambitious and achievable.
2 ALIGNEMENT. The review committee judges, all predominantly, that the Delft University of Technology with her proposal strongly commits to education differentiation and centre of gravity formation.
3 FEASIBILITY. The review committee is of opinion that the proposal of the Delft University of Technology is feasible (Reviewcommissie voor Hoger Onderwijs en Onderzoek, Advies Technische Universiteit Delft, 2012, pp. 2-4).

- **ADDITIONAL INDICATORS**

-The quality of the research in external assessments, in the context of SEP-evaluations, is in average 'very good '.
-Approximately fifteen techno-starters per year.
-There are 450 students taking part in entrepreneurship education.
(Reviewcommissie voor Hoger Onderwijs en Onderzoek, Advies Technische Universiteit Delft, 2012, p. 4).

- **USED DEFINITION FOR THE MANDATORY INDICATORS:** WO1 – WO7; RHCOO definition.

4 Leiden University (LEI)

- **PROFILE.** Leiden University positions itself as a leading European research university.

This University indicates education, research, and valorisation as her main tasks. Leiden University is a general university with a broad profile. The education of the Leiden University characterizes itself as a strong interweaving of teaching and research and is predominantly disciplinary oriented. In addition on the regular programme, Leiden University proposes a broad Excellency programme. To put her research on the map (internationally) the university will continue to invest in research on six profile themes. Leiden University entered into a strategic alliance with Delft University of Technology and Erasmus University Rotterdam, in the context to have the potential to be among the world top (Reviewcommissie voor Hoger Onderwijs en Onderzoek, Advies Universiteit Leiden, 2012, p. 1).

- **JUDGEMENT ABOUT THE PROPOSAL BY THE REVIEW COMMITTEE**

1 AMBITION. In the context of education quality and study success, the education supply, research and valorization, all predominantly, the review committee evaluates the institution's proposal as ambitious and achievable.
2 ALIGNEMENT. The review committee judges, all predominantly, that Leiden University with her proposal strongly commits to education differentiation and centre of gravity formation.
3 FEASIBILITY. The review committee is of opinion that the proposal of Leiden University is feasible (Reviewcommissie voor Hoger Onderwijs en Onderzoek, Advies Universiteit Leiden, 2012, pp. 2-4).

- **ADDITIONAL INDICATORS**

- The increase of participation of foreign students in master's programs to 20% in 2014.
- Decreasing the drop-out of immigrant (minority) students.
- Increasing the number of promotions.
-The percentage of public research resources spent on valorization in 2016 at 2.5%
(Reviewcommissie voor Hoger Onderwijs en Onderzoek, Advies Universiteit Leiden, 2012, p. 4).

- **USED DEFINITION FOR THE MANDATORY INDICATORS:** WO1 – WO7; RHCOO definition.

5 Maastricht University (UM)

- **PROFILE.** This university is a university with a approachable, strong socially determined mission. The university is distinctive of other universities due to her thematic priorities, but also because of the way she pursues her targets. Maastricht University is an international university that wants to prepare her students as good as possible to the challenges of the European and world knowledge society. It is also a network university that is connected with other knowledge institutions at regional, national and international level. The university is also strongly focused on education quality (Reviewcommissie voor Hoger Onderwijs en Onderzoek, Advies Universiteit Maastricht, 2012, p. 1).

- **JUDGEMENT ABOUT THE PROPOSAL BY THE REVIEW COMMITTEE**

1 AMBITION. In the context of education quality and study success, the education supply, research and valorization, all predominantly, the review committee evaluates the institution's proposal as ambitious and achievable.
2 ALIGNEMENT. The review committee judges, all predominantly, that Maastricht University with her proposal strongly commits to education differentiation and centre of gravity formation.
3 FEASIBILITY. The review committee is of opinion that the proposal of Maastricht University is mostly feasible (Reviewcommissie voor Hoger Onderwijs en Onderzoek, Advies Universiteit Maastricht, 2012, pp. 2-4).

- **ADDITIONAL INDICATORS**

-Retaining of the high NSE-student satisfaction score on the education program in general at 85 % (satisfied or very satisfied).
-Increasing of the number of promotions to 250 per year.
-Maintaining the level of new NWO and European stock markets.
-Increasing of the ERC Starting Grants and ERC Advanced Grants by one more than the realized number for the last 4 years.
-In horizon 2012 is strived for an average of 25 contracts per year.
-In external research visitations across the whole line, achieving a score of 4 ('very good').
(Reviewcommissie voor Hoger Onderwijs en Onderzoek, Advies Universiteit Maastricht, 2012, p. 4).

- **USED DEFINITION FOR THE MANDATORY INDICATORS:** WO1 – WO7; RHCOO definition.

6 University of Twente (UT)

- **PROFILE.** The University of Twenty is mainly focused on two areas, namely technologic and social sciences. By a combination of these two aspects, the university wants to educate specific Twents 'T-shaped' professionals. The UT wants to concentrate on the foundations and the application of three converging technologies (nanotechnology, biomedical technology and ICT) in combination with related social-economic disciplines. The UT makes room for new policy by repel

tasks. Since the ’80, this university is profiling as an entrepreneurial university. This line will be pursued by strengthen the collaboration with firms and governments in the region, Netherlands and Europe (Reviewcommissie voor Hoger Onderwijs en Onderzoek, Advies Universiteit Twente, 2012, p. 1).

- **JUDGEMENT ABOUT THE PROPOSAL BY THE REVIEW COMMITTEE**

1 AMBITION. In the context of education quality and study success, the education supply, research and valorization, all predominantly, the review committee evaluates the institution’s proposal as ambitious and achievable.
2 ALIGNEMENT. The review committee judges, all predominantly, that the University of Twente with her proposal strongly commits to education differentiation and centre of gravity formation.
3 FEASIBILITY. The review committee is of opinion that the proposal of the University of Twente is feasible (Reviewcommissie voor Hoger Onderwijs en Onderzoek, Advies Universiteit Twente, 2012, pp. 1-3).

- **ADDITIONAL INDICATORS**

-Increase the inflow into ATLAS (Academy of Technology and Liberal Arts & Sciences) from 0 to 70.
-10% of the regular students take part in plus modules in 2015.
-Keep the positive revenue capacity equal to 0.34.
-Increase the number of projects with a shared infrastructure of 6 to 11.
-Maintain the number of spin-off companies.
-Maintain the top 3 position in the Leiden ranking with regard to three centers of gravity.
-Maintain the positive revenue capacity of the 2nd and 3rd resource flow at 34 percent of the 1st resource flow.
-A substantial expansion of the shared infrastructure (Reviewcommissie voor Hoger Onderwijs en Onderzoek, Advies Universiteit Twente, 2012, p. 4).

- **USED DEFINITION FOR THE MANDATORY INDICATORS:** WO1 – WO7; RHCOO definition.

7 Utrecht University (UU)

- **PROFILE** This university is a research university which gives very good education and room to top talents. Utrecht University is a multifaceted knowledge centrum that provides education and research of international quality. This university provides innovative education of high quality with a high study success, and connects education with research. THE UU stimulates interdisciplinarity. This university is anchored in the society, due to her collaborations with excellent partners (Reviewcommissie voor Hoger Onderwijs en Onderzoek, Advies Universiteit Utrecht, 2012, p. 1).

- **JUDGEMENT ABOUT THE PROPOSAL BY THE REVIEW COMMITTEE**

1 AMBITION. In the context of education quality and study success, the education supply, research and valorization, all predominantly, the review committee evaluates the institution’s proposal as very ambitious and achievable.
2 ALIGNEMENT. The review committee judges, all predominantly, that Utrecht University with her proposal very strongly commits to education differentiation and centre of gravity formation.
3 FEASIBILITY. The review committee is of opinion that the proposal of Utrecht University is feasible (Reviewcommissie voor Hoger Onderwijs en Onderzoek, Advies Universiteit Utrecht, 2012, pp. 1-4).

- **ADDITIONAL INDICATORS**

-The reduction of a number of education programs with 6.
-An increase of the number of research programs with four ‘fives’ in the SEP-judgement with 10%.
- Maintain the position in worldwide rankings (ARWU, THE).
-Maintain the position relative to other regular universities in acquired resources from KP7 / Horizon 2020.
- Increasing the portion of students that follows entrepreneurship education from 3 % to 5% in 2016.
-The resources for valorization (as a percentage of the public resources for research) in 2016 at 2, 5%.
(Reviewcommissie voor Hoger Onderwijs en Onderzoek, Advies Universiteit Utrecht, 2012, p. 4).

- **USED DEFINITION FOR THE MANDATORY INDICATORS:** WO1 – WO7; RHCOO definition.

8 University of Amsterdam (UvA)

❖ **PROFILE** The University of Amsterdam is one of the leading research universities in Europe. This university is connected to the League of European Research Universities and to the worldwide network of research universities Universitas 21. The faculties of humanities and social sciences of the UvA are the largest of the Netherlands and both belong in their field to the European top. This is a broad university with strong connections in the region and with international partners. The Centre of Higher Education Development (CHE) states that the UvA is one of the seven European universities that scores excellent in all seven areas that were investigated in 2009 and 2010 (Reviewcommissie voor Hoger Onderwijs en Onderzoek, Advies Universiteit Amsterdam, 2012, p. 1).

❖ **JUDGEMENT ABOUT THE PROPOSAL BY THE REVIEW COMMITTEE**

1 AMBITION. In the context of education quality and study success, the education supply, research and valorization, all predominantly, the review committee evaluates the institution's proposal as ambitious and achievable.

2 ALIGNEMENT. The review committee judges, all predominantly, that the University of Amsterdam with her proposal substantial commits to education differentiation and centre of gravity formation.

3 FEASIBILITY. The review committee is of opinion that the proposal of the University of Amsterdam is mostly feasible (Reviewcommissie voor Hoger Onderwijs en Onderzoek, Advies Universiteit Amsterdam, 2012, pp. 2-4).

❖ **ADDITIONAL INDICATORS**

-The proportion of academic staff in permanent employment which is involved in the seven centres of gravity themes will increase from 40% to more than 50% in 2014.

-Expand the number of places in broad intensive (honours-) bachelor education programs from 280 to 400 in the study year of 2015.

-Expand the number of places in the two-year research master education programs from 314 to 400 in 2015-2016 (Reviewcommissie voor Hoger Onderwijs en Onderzoek, Advies Universiteit Amsterdam, 2012, p. 4).

❖ **USED DEFINITION FOR THE MANDATORY INDICATORS:** WO1 – WO7; RHCOO definition.

9 Eindhoven University of Technology (TU/e)

❖ **PROFILE** Eindhoven University of technology is a research driven and design focused technological university of international allure that is in the field of engineering science & technology coherent concerned with education, research and knowledge valorisation. This university distinct herself from other universities by having a strong collaboration with the high-tech-business at the development and implementation of public-private R&D and innovation programs and innovation institutions. This university takes part in the 3TU along with the University of Twente and Delft University of Technology (Reviewcommissie voor Hoger Onderwijs en Onderzoek, Advies Technische Universiteit Eindhoven, 2012, p. 1).

❖ **JUDGEMENT ABOUT THE PROPOSAL BY THE REVIEW COMMITTEE**

1 AMBITION. In the context of education quality and study success, the education supply, research and valorization, all predominantly, the review committee evaluates the institution's proposal as mostly ambitious and achievable.

2 ALIGNEMENT. The review committee judges, all predominantly, that Eindhoven University of Technology with her proposal strongly commits to education differentiation and centre of gravity formation.

3 FEASIBILITY. The review committee is of opinion that the proposal of Eindhoven University of Technology is feasible (Reviewcommissie voor Hoger Onderwijs en Onderzoek, Advies Technische Universiteit Eindhoven, 2012, pp. 2-4).

❖ **ADDITIONAL INDICATORS**

-The portion of foreign bachelor students is 20% in 2020.

-The master effectivity (re-registering returns) after 30 months is 90% in 2020.

-Maintain the number of promotions of 200.

-Maintain the number of research publications in the 'Web of Science'-document of 1400.
-The number of students with a certificate entrepreneurship is in 2020 100 bachelor students and 100 graduate students.
-In 2015 will 24 million euro on an annual base used as a valorisation-stake in the top sectors. (Reviewcommissie voor Hoger Onderwijs en Onderzoek, Advies Technische Universiteit Eindhoven, 2012, p. 4).

- **USED DEFINITION FOR THE MANDATORY INDICATORS:** WO1 – WO7; RHCOO definition.

10 Radboud University Nijmegen (RU)

- **PROFILE** The Radboud University Nijmegen is a student focused research university where interweaving of research and education is of main importance. This university chose to have disciplinary oriented education programmes. An important ambition of the Radboud University Nijmegen is improving of the study effectivity (re-registering returns) after four years and reducing the drop-out after the first year. The RU has the goal that each research programme is international competitive and search to align with top sectors (Reviewcommissie voor Hoger Onderwijs en Onderzoek, Advies Radboud Universiteit, 2012, p. 1).
- **JUDGEMENT ABOUT THE PROPOSAL BY THE REVIEW COMMITTEE**

1 AMBITION. In the context of education quality and study success, the education supply, research and valorization, all predominantly, the review committee evaluates the institution's proposal as ambitious and achievable.
2 ALIGNEMENT. The review committee judges, all predominantly, that the Radboud University Nijmegen with her proposal strongly commits to education differentiation and centre of gravity formation.
3 FEASIBILITY. The review committee is of opinion that the proposal of the Radboud University Nijmegen is feasible (Reviewcommissie voor Hoger Onderwijs en Onderzoek, Advies Radboud Universiteit, 2012, pp. 1-3).

- **ADDITIONAL INDICATORS**

-In the master programme of the Radboud Honours Academy is the target 150 students, approximately 5 % of the inflow in the master phase.
-A reduction of the number of master education programs of 83 to 66.
-Maintain of the number of students for study stay abroad at 27%.
-Maintain the number of promotions.
-Maintain the number of scientific publications.
-Increase of the scientific impact.
-Maintain the research sales with firms and EU projects (Reviewcommissie voor Hoger Onderwijs en Onderzoek, Advies Radboud Universiteit, 2012, p. 3).

- **USED DEFINITION FOR THE MANDATORY INDICATORS:** WO1 – WO7; RHCOO definition.

11 Tilburg University (TiU)

- **PROFILE** Tilburg University is aimed at human sciences and social sciences with a strong focus on quality. It is a clear university, as it wants to maintain her current scale as one of her strongest foundations for a real academic community. This university is characterized by having a connection between her education and research, an interactive approach, approachable students and qualified teachers in international environment (Reviewcommissie voor Hoger Onderwijs en Onderzoek, Advies Universiteit van Tilburg, 2012, p. 1).
- **JUDGEMENT ABOUT THE PROPOSAL BY THE REVIEW COMMITTEE**

1 AMBITION. In the context of education quality and study success, the education supply, research and valorization, all predominantly, the review committee evaluates the institution's proposal as mostly ambitious and achievable.
2 ALIGNEMENT. The review committee judges, all predominantly, that Tilburg University with her proposal substantial commits to education differentiation and centre of gravity formation.

3 FEASIBILITY. The review committee is of opinion that the proposal of Tilburg University is mostly feasible (Reviewcommissie voor Hoger Onderwijs en Onderzoek, Advies Universiteit van Tilburg, 2012, pp. 1-3).

- **ADDITIONAL INDICATORS**

-Increase the participation in excellence tracks from 5,9% to 7%.
-Increase of the number bachelor programmes that are provided in English from 4 to 6.
-Increase of the number of promotions from 131 to 140.
-Maintain of the number of subsidy awards of the NOW-renovation impulse.
-Increase of the number of ERC-Grants.
-Increase the number of KP7- and Horizon 2020 contracts.
-The percentage of public research resources for valorisation in 2015 is at 2,5%.
(Reviewcommissie voor Hoger Onderwijs en Onderzoek, Advies Universiteit van Tilburg, 2012, p. 3).

- **USED DEFINITION FOR THE MANDATORY INDICATORS:** WO1 – WO7; RHCOO definition.

12 VU University Amsterdam (VU)

- **PROFILE** The VU University Amsterdam wants to contribute to the solution of social problems by means of international competitive research programs. This university wants to provide solid and structured academic training. The activities of the VU are inspired by the three main values: responsibility, openness and involvement. The profile of the VU is determined by the four themes: Human health and Life Sciences, Connected World, Professional Services and Science for Sustainability (Reviewcommissie voor Hoger Onderwijs en Onderzoek, Advies Vrije Universiteit, 2012, p. 1).

- **JUDGEMENT ABOUT THE PROPOSAL BY THE REVIEW COMMITTEE**

1 AMBITION. In the context of education quality and study success, the education supply, research and valorization, all predominantly, the review committee evaluates the institution's proposal as ambitious and achievable.
2 ALIGNEMENT. The review committee judges, all predominantly, that the VU University Amsterdam with her proposal substantial commits to education differentiation and centre of gravity formation.
3 FEASIBILITY. The review committee is of opinion that the proposal of the VU University Amsterdam is mostly feasible (Reviewcommissie voor Hoger Onderwijs en Onderzoek, Advies Vrije Universiteit, 2012, pp. 2-3).

- **ADDITIONAL INDICATORS**

-Increase the proportion of external research visitations with an average score of 4 from 70% to 100%.
-Increase the proportion of external research visitations with an average score of 4,7 from 14% to 20%.
-Increase the proportion of VU publications in open access to 40% in 2015.
-The income of postgraduate executive education increases from 13 million euro in 2010 to 20 million euro in 2015.
-The percentage of research resources for valorisation will be 2,5% in 2015.
(Reviewcommissie voor Hoger Onderwijs en Onderzoek, Advies Vrije Universiteit, 2012, p. 4).

- **USED DEFINITION FOR THE MANDATORY INDICATORS:** WO1 – WO7; RHCOO definition.

13 Wageningen University (WUR)

- **PROFILE** Wageningen University is an unique university in the Netherlands by her administrative and financial positioning (at the minister of EL&I), by her domain (green) and by its collaboration with Dienst Landbouwkundig Onderzoek (DLO) (applied science) within Wageningen UR. Wageningen University promotes a multidisciplinary approach with a lot of interaction between nature- and social sciences (Reviewcommissie voor Hoger Onderwijs en Onderzoek, Advies Universiteit Wageningen, 2012, p. 1).

- **JUDGEMENT ABOUT THE PROPOSAL BY THE REVIEW COMMITTEE**

1 AMBITION. In the context of education quality and study success, the education supply, research and valorization, all predominantly, the review committee evaluates the institution's proposal as ambitious and achievable.
2 ALIGNEMENT. The review committee judges, all predominantly, that Wageningen University with her proposal strongly commits to education differentiation and centre of gravity formation.
3 FEASIBILITY. The review committee is of opinion that the proposal of Wageningen University is feasible (Reviewcommissie voor Hoger Onderwijs en Onderzoek, Advies Universiteit Wageningen, 2012, pp. 1-3).

- **ADDITIONAL INDICATORS**

-An increase in the number of PhD students with Training and Supervision Plan from 85% nowadays to 90% in 2015.
-From 91 tenure tracks in 2011 to 150 in 2015.
-An increase in the acquisition of VENI-VIDI-VICI-research grants from 30 in the period 2007-2010 to 32 in the period 2011-2014, and in 2014 a share in ERC-grants that is higher that the WU-share in the total funding.
-Increase the number of graduate schools with a special programme for postdocs from 3 to 6 schools in 2015.
-Maintain the number of research publications in scientific journals with an impact factor greater than 20.
-Improve the position in the Shanghai ranking for Life and Agricultural Sciences, from a position of 36 to a position in the top-35 in 2015 and on a longer term to a position in the top-30.
-Maintain the share in the master programmes in English.
-Increase the percentage bachelor students with foreign experiences from 8 to 12.
-Increase the number of distance learning from 0 to 2.
-Increase the number of peer reviewed courses (quality indicator)
(Reviewcommissie voor Hoger Onderwijs en Onderzoek, Advies Universiteit Wageningen, 2012, pp. 3-4).

- **USED DEFINITION FOR THE MANDATORY INDICATORS:** WO1 – WO7; RHCOO definition.

14 Protestant Theological University (PThU)

- **PROFILE** This university is founded as a pastor education programme for the protestant church in the Netherlands. The Protestant Theological University provides scientific education, applies scientific research and offers a multilateral post academic courses for pastors, theological professionals and other academics. This university collaborates within her research with the faculty Theological of the VU University Amsterdam and with the faculty Theological and Religion studies of the University of Groningen (RUG) (Reviewcommissie voor Hoger Onderwijs en Onderzoek, Advies Protestantse Theologische Universiteit, 2012, p. 1).

- **JUDGEMENT ABOUT THE PROPOSAL BY THE REVIEW COMMITTEE**

1 AMBITION. In the context of education quality and study success, the education supply, research and valorization, all predominantly, the review committee evaluates the institution's proposal as ambitious and achievable.
2 FEASIBILITY. The review committee is of opinion that the proposal of the Protestant Theological University is feasible (Reviewcommissie voor Hoger Onderwijs en Onderzoek, Advies Protestantse Theologische Universiteit, 2012, pp. 2-3).

- **FACULTATIVE INDICATORS/ADDITIONAL INDICATORS**

-Maintain the percentage of foreign students at 20%.
-Decrease the staff/student ratio from 1: 7,5 to 1 :10 in 2015.
-The number of dissertations per fte WP research: 0,4.
-The number of scientific articles in refereed journals per fte WP research: 1,7.
-The number of participants in education programmes, courses, and the like in the context of Leven Lange Leren and professional development is greater or equal to 500.

-The share in research contracts with social parties (as % of the total number of research trajects) is greater or equal to 12 %.
(Reviewcommissie voor Hoger Onderwijs en Onderzoek, Advies Protestantse Theologische Universiteit, 2012, p. 3).

- **USED DEFINITION FOR THE MANDATORY INDICATORS:** WO1 – WO7; RHCOO definition.

15 Theological University Apeldoorn (TUA)

- **PROFILE** The Theological University Apeldoorn is a small university that is connected with the Christian reformed churches (CGK) in the Netherlands. This university is committed to the scientific equipment and the practical-spiritual forming of prominent theologians (pastor education programme). This university seeks active cooperation network with related organisations and institutions at home and abroad, inter alia, by participating in (inter)-national research projects (Reviewcommissie voor Hoger Onderwijs en Onderzoek, Advies Theologische Universiteit Apeldoorn, 2012, p. 1).

- **JUDGEMENT ABOUT THE PROPOSAL BY THE REVIEW COMMITTEE**

1 AMBITION. In the context of education quality and study success, the education supply, research and valorization, all predominantly, the review committee evaluates the institution's proposal as ambitious and achievable.
2 FEASIBILITY. The review committee is of opinion that the proposal of the Theological University Apeldoorn is feasible (Reviewcommissie voor Hoger Onderwijs en Onderzoek, Advies Theologische Universiteit Apeldoorn, 2012, pp. 2-3).

- **FACULTATIVE INDICATORS/ADDITIONAL INDICATORS**

-The number of scientific articles should be 45 (whereof 10 refereed).
-The number of professional publications should be 24, whereof 3 books.
-The number of dissertations should be 2.
-The number of science books should be 3.
-The number of conferences with TUA as (co-)organizer should be 11.
(Reviewcommissie voor Hoger Onderwijs en Onderzoek, Advies Theologische Universiteit Apeldoorn, 2012, p. 3).

- **USED DEFINITION FOR THE MANDATORY INDICATORS:** WO1 – WO7; RHCOO definition.

16 University for Humanistic Studies (UvH)

- **PROFILE** This University is a philological university inspired by humanism. The main mission of this university is to develop the humanistic as new human science and as vocational training. This university implements thereby qualitative scientific research and education from the humanist inspiration and prepares professionals that focus on subjects of meaning and humanization in our complicated society (Reviewcommissie voor Hoger Onderwijs en Onderzoek, Advies Universiteit voor Humanistiek, 2012, p. 1).

- **JUDGEMENT ABOUT THE PROPOSAL BY THE REVIEW COMMITTEE**

1 AMBITION. In the context of education quality and study success, the education supply, research and valorization, all predominantly, the review committee evaluates the institution's proposal as ambitious and achievable.
2 FEASIBILITY. The review committee is of opinion that the proposal of the University for Humanistic Studies is feasible (Reviewcommissie voor Hoger Onderwijs en Onderzoek, Advies Universiteit voor Humanistiek, 2012, pp. 2-3).

- **FACULTATIVE INDICATORS/ADDITIONAL INDICATORS**

-Decrease the student-staff ratio from 0,10 to 0,07.
-Maintain the percentage of education that is given in bachelor programs by a professor at 35%.
-Increase the incomes from competitive scientific programs from 5,5% to 10%.
-Increase the number of publications in refereed journals (Dutch and international) from 3,4 per fte to 3.
-Increase the incomes from contract education from 4% to 7,5%.

-Establish more programs for continuous professional development, from 1,7 to 3.
(Reviewcommissie voor Hoger Onderwijs en Onderzoek, Advies Universiteit voor Humanistiek, 2012, p. 3).

- **USED DEFINITION FOR THE MANDATORY INDICATORS:** WO1 – WO7; RHCOO definition.

17 Theological University of the Reformed Churches

- **PROFILE** This university is a scientific institution connected to the reformed churches and works from the reformed faith serving the evangelist of Jesus Christ. Starting point for the future strategy of this university is to strive for total well-formed university with a reformed profile, whereby there is a consistent cohesion between education, research and knowledge exchange. This university wants, inter alia, to generate more international contacts and exchanges. This university has united withe the Protestant Theological University, the Theological University Apeldoorn and the University for Humanistic Studies into the network of philosophical universities (NLU)
(Reviewcommissie voor Hoger Onderwijs en Onderzoek, Advies Theologische Universiteit van de gereformeerde kerken, 2012, p. 1).

- **JUDGEMENT ABOUT THE PROPOSAL BY THE REVIEW COMMITTEE**

1 AMBITION. In the context of education quality and study success, the education supply, research and valorization, all predominantly, the review committee evaluates the institution's proposal as ambitious and mostly achievable.
2 FEASIBILITY. The review committee is of opinion that the proposal of the Theological University of the Reformed Churches is feasible (Reviewcommissie voor Hoger Onderwijs en Onderzoek, Advies Theologische Universiteit van de gereformeerde kerken, 2012, pp. 2-3).

- **FACULTATIVE INDICATORS/ADDITIONAL INDICATORS**

-The introduction of a compulsory intake conversation for all tenderers.
-Increase the number of peer-reviewed publications to 5 articles per fte.
-More publications in refereed journals and books.
-Increase the quality of the theological research (level 4 of the SEP-protocol).
-Increase the number of courses in the context of AKZ + from 4 to 25 and the number of participants from 64 to 300.
-Increase the participation in Permanente Educatie Predikanten (PEP) with 15 % relative to the average of 238 people per year.
(Reviewcommissie voor Hoger Onderwijs en Onderzoek, Advies Theologische Universiteit van de gereformeerde kerken, 2012, p. 3).

- **USED DEFINITION FOR THE MANDATORY INDICATORS:** WO1 – WO7; RHCOO definition.

Appendix 10: Extra information: Dutch regulatory framework and HE system governance

Formal and factual autonomy of the Dutch universities

As shown, in some cases the Dutch universities dispose of a lot of autonomy. Though, one should have in mind that formal autonomy does not always reflect the factual autonomy of the Dutch universities. The Dutch government stays the most important actor in the HE area in terms of setting rules and funding, even when the control on universities is decreased. It is argued that the universities' formal autonomy is higher than their actual autonomy for the reason university leadership anticipates the position of the government (Enders, Weyer, & de Boer, 2013, pp. 13-14).
In addition, it is important to note that Dutch autonomy policies interact with new regulatory policy instrument as performance monitoring, output funding and (bilateral contracting). As shown, universities are provided more autonomy in human resource and financial matters, while at the same time the new instruments try to control organizational behavior and choices more effectively. These new policy instruments give the government the opportunity to force universities to take particular directions (this could not be attained with the old regulatory policy instruments). This demonstrates that organizational autonomy became a part of a new kind of control of universities. In line with this, the Dutch government uses performance contracts as a new way to reach a further bonding of universities (Enders, Weyer, & de Boer, 2013, p. 14).
The Dutch universities have more autonomy in particular dimensions than in others. The dependency between different autonomy dimensions can lead to paradoxical influences for the autonomy of the university. For example, the Dutch universities' managerial autonomy for budgeting has increased, while at the same time the government has new auditing technologies for financial controlling that restrict the managerial freedom in this dimension. Moreover, in dimensions where the states decreased control, the universities set their own rules for more control internally (Enders, Weyer, & de Boer, 2013, p. 14). The government´s micro management has made place for the micro management of the universities. This all shows that the more traditional forms of public bureaucracy are possibly less process-driven and rules-based than the new forms of bureaucracy (Hood & Peters, 2004).
The Dutch case also demonstrates the practicality of a task-specific perspective; hinting on the measurability of the organizations' outputs which are a requirement for bonding in the context of principal-agent models and performance auditing. Outputs of universities are hardly accessible compared to outputs of other kinds of organizations. The reaction in the Netherlands was to make the universities' output more observable and measurable by investing in large amounts and specifications of outputs and linked indicators deduced from the system monitoring and the universities themselves. The relationship between, inter alia, the Dutch government and the university changed due to these increased efforts in the universities' output. The changes also encourage closer performance monitoring within the Dutch universities. Moreover, performance-based funding that is linked to this subject, stimulates the universities to make strategic choices in line with the targets of the government. However, there are two negative aftereffects in the case of a success in performance governing. To begin with, having a standardized system of performance monitoring and funding will undermine organizational specialization within the system (profiling of the universities) because universities will take similar choices. Hence, the government implements specific performance contracts with the individual universities that involve particular premiums for

activities related to profiling. Second, when the focus is more on stimulating quantitative outputs, concerns increase about the quality side of the universities' outputs. This result in making more effort to keep the quality under observation and to sanction behavior that is not conform to the rules (Enders, Weyer, & de Boer, 2013, p. 15).

At last, the specific characteristic of an individual university influences the possibilities and obstacles for internal managerial control and autonomy; which is under-estimated by the Dutch reformed. Whitley (2007) and Musselin (2007) argue that universities do not dispose of the capacities to be more like firms, even in the case of increased autonomy and decreased state control. These shortcomings are a direct consequence of the specific nature of the universities e.g. the internal technological uncertainty of their main activities and their strongly embedded fragmentation. Consequently, universities dispose of restricted discretion over expected outcomes. In addition, coordination, systematic planning and integration are restricted through the academic labour division along the lines of the teaching and research fields with their specific skills and knowledge. Central integration and coordination for collective goal attainment will have to depend on the inputs of different loosely joined parts of the organization to the university as a whole (Enders, Weyer, & de Boer, 2013, p. 15 and Whitley, 2007, p. 25).

Appendix 11: Interview format with managers/directors of the government of Catalonia

1. **A.** Do you have (the most recent) performance agreements for me that you could provide or explain to me that the universities concluded with the government?
   B. More specific, what are the stated objectives/ambitions of the universities and the linked formulated (quantitative) indicators (for each formulated indicator, the situation prior of the contract period that was set out and the values that have to be attained for each determined contract year and at the end of the programme contract period for each stated objectives)?
2. How do the negotiations between the government and the universities look like in the context of the performance agreements, which steps are taken in this process?
3. How much autonomy do universities have in formulating the objectives and the linked indicators?
4. Which problems does the government encounter on the subject of performance agreements?
5. How does the procedure of the approval of the performance agreements look like?
6. **Competitive mechanism** To what extend are you of opinion that the educational system in Catalonia can be characterized as an open and competitive place?
7. **Coercive mechanism** To what extend are you of opinion that the universities have to deal with a coercive legal framework related to performance agreements? (It is one of my explanatory variables).
8. Do you have any suggestions on the subject of performance agreements for future developments?

Appendix 12: Interview format with managers of the public universities of Catalonia

1. **A.** Do you have (the most recent) performance agreements for me that you could provide or explain to me that this university concluded with the government?
   B. More specific, what are the stated objectives/ambitions of this university and the linked formulated (quantitative) indicators (for each formulated indicator, the situation prior of the contract period that was set out and the values that have to be attained for each determined contract year and at the end of the programme contract period for each stated objectives)?
2. How do the negotiations between the government and your university look like in the context of the performance agreements, which steps are taken in this process?
3. How much autonomy does your university has in formulating the objectives and the linked indicators?
4. Which problems does your university encounter on the subject of developing performance agreements?
5. How does the procedure of the approval of the performance agreements look like?
6. **Mimetic mechanism** Does this university look at other universities and/or has consultation with other universities on the subject of formulating and setting up the performance agreements?
7. **Competitive mechanism** To what extend are you of opinion that your university has to enter into a competition with the other Catalan universities on the subject of students?
8. **Coercive mechanism** To what extend are you of opinion that your university has to deal with a coercive legal framework related to performance agreements? (It is one of my explanatory variables).
9. Do you have any suggestions on the subject of performance agreements for future developments?

Appendix 13: Competitive isomorphism (for further research)

The government's view on the HE system in CAT as an open and competitive place

First of all, the Catalan government interpret 'open' as it can mean 'open' at the Spanish level and/or 'open' at the International level (European level and World level). The Catalan government states that the Catalan HE system is fully open for the Spanish country. Because, inter alia, the universities in Catalonia have 40% of their studies in non-Catalan language. Focused on international level, the numbers of international students that come from abroad to the Catalan universities are subsequently: bachelor (5%), master (40%) and PHD studies (40%). The Catalan universities offer 450 bachelor degrees and 450 master degrees; where 100 master degrees are fully in English, 100 master degrees are fully in Spanish, 100 master degrees are fully in Catalan and 150 master degrees are mixed. For these reasons, the government of Catalonia indicates that the Catalan HE system seems to be also 'open' at international level (Catalan government, 2015b).

The Catalan government argues that in some aspects the universities compete. This is mostly the case in aspects of funding for research. Also, when universities have more or less the same studies, they compete on attracting students. However, the Catalan government indicates that in aspects of management, as libraries and other services, the universities cooperate instead of being competitive. There are also some shared studies between the universities (Catalan government, 2015a).

The universities' view on the HE system in CAT as an open and competitive place

Pompeu Fabra University argues that there is competition between the universities. This competition includes, inter alia, competition on attracting students (better universities attract the best students). However, the UPF indicates that the mentioned competition is limited; it is automatic competition where universities have minimal influence on. There is more competition in the hiring of professors. The salaries for professors are fixed. So a university cannot compete with other universities by paying more to professors. Reputation, prestige and particular environment and atmosphere are important factors on which the university can try to attract professors (Pompeu Fabra University, 2015). In the case of the University Rovira i Virgili I, there is no competition on the subject of students, because most of the students are from the area where this university is settled. However, there are a lot of students that go to Barcelona and to study there; the university Rovira i Virgili cannot do anything about this. This university argues that there is some competition in the research variables between the HEIs (Rovira i Virgili I University, 2015). University of Barcelona indicates that there is some competition between the HEIs, but only when the HEIs are more or less similar in their characteristics (for example: big universities with other big universities). It is more important as a university to focus on the education programmes that it offers. As some studies are only provided by the University of Barcelona (as chemistry) whereby there is no competition (University of Barcelona, 2015). The Open University (UOC) does not compete in the Catalan education system, because the profiles of their students are very different compared with the other universities. Most students at this university are people that are working and studying at the same time of an average age of 35. Of the total amount of students the UOC has, only 5% of their students are younger than 21 years.

The UOC competes at the Spanish level, not at the level of Catalonia. It competes with the other online university in Spain which is more or less the same in characteristics (University Oberta de Catalunya, 2015).