Research design for analysing the relationship between governance structures and performance management systems in universities

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ABSTRACT

This paper describes the research design that has been chosen to study the relationship between governance structures and performance management systems in universities. The complexity of the research topic, which brings together two different bodies of literature – on governance and on performance management systems – is addressed by using a case study design and a multi-method approach involving document analysis, interviews and a survey. The research design selected and the advantages and disadvantages of each research method are discussed thoroughly, including the reasoning for conducting the survey after the interviews.

INTRODUCTION

Pressures to reform higher education have become more acute in recent years, as public funding has become more targeted, as institutional autonomy has changed, and as, in parallel, external performance evaluation and other accountability mechanisms have required higher education institutions to publicly demonstrate their efficiency and effectiveness. These pressures have not only challenged universities to change their 'traditional' models of governance, but have also raised the interest in introducing performance measurement, reporting and management practices in these institutions.

Even though there are probably a number of factors that influence the way performance is measured and managed in universities, it is our understanding that governance structures, understood as the way an organisation divides and integrates responsibility and authority, play an important role in the implementation and functioning of performance management systems in these organisations. Therefore, it is believed that, in order to understand and improve the functioning of these systems, it is fundamental to assess how each of the components of the existing governance structures may impact on the assessment of performance, its reporting and the use of the data collected for improvement purposes.

Having found some gaps in the literature it has been decided to: first, instead of looking only at the way performance is measured, look also at the way performance data is reported and used for improvement purposes; second, take into account other actors' perspectives,

rather than only the 'top managers'' views; and finally, analyse not only one, but two different higher education systems.

The purpose of this paper is not to discuss the study *per se*, but to present the research design and the data collection methods that best suit a piece of research that tries to combine two different and complex bodies of literature – literature on performance management systems and on governance – in order to understand the way they relate to each other in a specific type of organisations: universities.

In order to achieve this aim, the paper is structured in the following way: first, an insight into the research topic is given, focusing on the reasons that led to its choice (Section 2); secondly, the research design is displayed, presenting explanations for an exploratory research and a case study design (Section 3); thirdly, the data collection methods are presented. The advantages and disadvantages of each method are highlighted and the importance of having mixed-methods is discussed. Moreover, it is explained why the survey is conducted after the interviews and not before, as in previous studies (Section 4); and finally, the way data is analysed is presented (Section 5).

RESEARCH TOPIC

Over the last few decades, factors like the massification of higher education; cuts in public funding; greater competition between institutions; diversification; and requirements from external quality assessment exercises have contributed to the urge to reform universities.

Having to take into account more and more the interests of a variety of external and internal stakeholders, these institutions have been urged to move from traditional models of participative management towards more executive models of management, more preoccupied with economy, efficiency and effectiveness, rising the interest in the transference of management practices from the private into the public sector (Clark, 1998; De Boer, 2003; Santiago *et al.*, 2006).

Within this scenario, some universities have started to rethink their 'traditional' forms of organisation, governance and management, and new emphasis has been put on the implementation of effective co-ordination and control systems, needed to improve organisational performance (Vilalta, 2001).

The growing concern with performance in higher education led to an increased interest in 'performance measurement', 'performance reporting' and 'performance management' and, in many countries, performance management systems have been introduced as part of these changes, involving the systematic collection and analysis of information about the institution, being the final aim to use the data collected to inform decision-making.

After reviewing the literature, and despite the growing base for research into the topic of performance in higher education, some gaps were still found, especially regarding the management of performance.

In fact, in higher education, the focus has been mainly on the selection and use of performance indicators (Goedegebuure *et al.*, 1990; Johnes and Taylor, 1991; Cave and Hanney, 1992; Cave *et al.*, 1997; Tam, 2001), or on the development, implementation and/or analysis of quality assurance mechanisms (Brennan and Shah, 1997; Rosa, 2003; Brown, 2004).

It is believed that too much attention has been put on how to measure performance or on how to build quality mechanisms, mainly in order to prepare for external evaluation exercises, often forgetting to look at what is considered to be the most important part of the process: what is being done with the performance data collected during the measurement process, and who may be influencing the measurement, reporting and management process.

It is our understanding that, in order to devise ways to effectively measure performance, report it, and integrate performance information into decision-making, using it for learning purposes, it is extremely important to look at the universities' governance structures and see how these are influenced by and can influence that course of action. Therefore, the aim of this research is to answer the following question: 'How do governance structures relate to performance management systems in universities?

De Boer (2002: 44) regards governance structures as a "set of rules concerning authority and power related to the performance of a university's activities directed towards a set of common goals". In other words, it reflects the way an organisation divides and integrates responsibility and authority. In this research, the internal structures of universities will be taken into consideration, looking, not only, at a single level of decision-making, but at the different levels that compose a university's governance structure and at the different actors that integrate those levels (academics, non-academic staff, students and lay members).

The analysis of multiple levels and actors is considered essential, because it is important to understand how the introduction of performance management systems in universities, often encouraged by external pressures, has affected the configuration of the governance structures and the roles, influences and accountabilities of the key actors in those structures. The understanding of these changes will, arguably, contribute to comprehend the way each level and actor looks at performance management systems and the decisions that they make concerning the functioning of these systems. To our knowledge, this analysis has not been made yet and is a gap in the literature.

Given that the focus of this paper is not the research itself, but the research design used to answer the main research question, the next sections will address the following issues: research design, data collection methods and tools used for data analysis.

RESEARCH DESIGN

As discussed above, despite some knowledge relating to performance measurement (mainly to the selection and use of performance indicators) or to the development, implementation and/ or analysis of quality assurance mechanisms in higher education, there is still a lack of understanding relating to how universities are reporting and using the data that is collected

during the measurement process and how governance structures may be influencing that process.

Given the novelty of the topic area, the research is exploratory. The primary purpose of the study is, therefore, to 'explore' the concepts and develop ideas rather than to 'explain' or 'describe' what is happening and why. In 'exploring', the study aims to develop an understanding of the relationship between governance structures and performance management systems rather than testing hypothesis or confirming them, which would be more characteristic of a positivistic study (Collis and Hussey, 2003). The research supports an exploratory study due to the lack of research that has been carried out to date considering the relationship between governance and performance management systems. It is hoped that the findings developed give a basis for further research.

Another gap in the literature is the absence of comparative studies in the field, considered important given that not every country has responded to demands to reform higher education systems in the same way. Therefore, a comparative study between two different higher education systems – the Portuguese and the British – is conducted, in order to assess if the way universities deal with performance measurement and management issues in countries with different backgrounds is that different and to understand the influence of governance structures under different scenarios.

The choice of Portugal and the United Kingdom has to do with the fact that while the UK has implemented profound reforms in the public sector, including higher education, first under the Thatcher Government, in the 1980s, and, later, under Tony Blair's 'Third Way', the Portuguese Government has just recently started to prepare a deep restructuring of the higher education sector. In fact, Portugal has just started to debate the need for deep changes in order to increase the efficiency, effectiveness, accountability and performance of universities.

Given that the macro-level of analysis does not allow us to understand the complexity of how universities measure performance, report it and use the data collected for learning purposes, nor how governance structures influence that process, a case study design is used.

Yin (1994: 13) defines a case study as an "empirical inquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident". In other words, it is used to cover contextual conditions, believing they might be highly pertinent to the phenomenon being studied. Bonoma (1985: 204) argued that cases must be "constructed to be sensitive to the context in which management behaviour takes place and to its temporal restraints". The importance of context in this research, also leads us to the use of case studies.

Case studies are now widely used in organisational studies. Some consider them to be 'meaningful' and 'rich' as they shed light on fine-grain detail of social processes in their appropriate context. Others argue that they lack rigour and reliability, do not address issues of generalisation and take too long (Yin, 1994). However, the development of literature on how to conduct case studies and how to analyse data from them, has helped to overcome some of the 'problems' mentioned (Eisenhardt, 1989; Yin, 1993).

The distinctive need for case studies arises out of the desire to understand complex social phenomena. In brief, the case study allows an investigation to retain the holistic and meaningful characteristics of real-life events – such as individual life cycles, organisational and managerial processes, neighbourhood change, international relations, and the maturation of industries (Yin, 1994). In our case, case studies are used in order to understand organisational and managerial processes, in a specific kind of organisations: universities.

Given that the nature of this research is to investigate a particular phenomenon – the relationship between governance structures and performance management systems – under different contexts, a multiple-case approach is chosen. This enables the development of more sophisticated descriptions and explanations. To Miles and Huberman (1994: 172) multiple cases help the researcher to "pin down the conditions under which that finding will occur".

Having decided to analyse more than one case, the number of cases has to be determined.

In the trade-off between broadness, which means choosing a large number of cases with limited deepness, and depth, which means choosing a small number of cases with significant deepness, the latter is preferred. Given the complexity of the analysis, which involves several levels of the organisation (central, departmental and individual), and different actors, an adequate understanding of a university is only considered possible if a significant amount of time is spent at each location, which means fewer cases. As Yin (1994) points out, by examining a relatively small number of cases, and comparing and contrasting them, the researcher learns about significant features of the phenomenon and how it varies under different circumstances.

Therefore, two cases are chosen: the University of Aveiro and the University of Warwick.

DATA COLLECTION METHODS

As mentioned, to understand the relationship between governance structures and performance management systems, a case study design is used to collect data at the institutional level. In the next sections the reasons for choosing the two universities are displayed and the methods used for data collection are discussed.

Case selection

In selecting a set of cases to study, it is not necessary to select a representative case or a set of cases with a view to statistical generalisation, and that is not the aim of this research. As stated above, the objective is to understand a particular phenomenon under a particular context. Therefore, as already explained, depth is preferred over broadness.

After deciding to study the cases in-depth, the choice of only two cases for this research has, of course, also to do with other types of constraints: (1) limited time; (2) limited resources;

and, above all, (3) limited access. Therefore, two cases are selected: the University of Aveiro, in Portugal, and the University of Warwick, in the UK.

These institutions have been chosen for several reasons. First, they both have quite a flat structure, where departments play a major role. Secondly, even though they are relatively young – the University of Warwick dates back to 1965 and the University of Aveiro to 1973, they are both recognised for their good performance. One might expect that, if they have been performing well, they may have adequate systems to measure, report and manage performance in place. The last reason is that they are both considered entrepreneurial and innovative universities, usually opened to new experiences. In fact, both institutions belong to the European Consortium of Innovative Universities (ECIU). The ECIU was founded in 1997 by ten European universities, being its goal to create a European network, where participating institutions can exchange experience and best practice of projects within education, research and regional development. The chosen name "underlines the European dimension of a limited group of innovative universities dedicated to the development of an innovative culture in its institutions, and to play a catalytic role for innovation in industry and for society at large"[1].

The fact that both universities present a common set of characteristics, provides an interesting setting to analyse how they both deal with performance management systems and how governance structures may influence and be influenced by those systems, particularly given the fact that they are inserted into different higher education systems.

It is not claimed that the selected institutions constitute a representative sample. Nevertheless, an attempt is made to ensure that, within each case, different characteristics are included.

Due to the exploratory nature of this study, it is very difficult to know *a-priori* the way each department is measuring, reporting and managing their performance. Therefore, in each location different subjects are considered, meaning that different departments, teaching different disciplines, are selected.

The reason for choosing different subjects has to do with the fact that it is expected that 'hard' subjects implement more easily and deal better with performance management systems than 'soft' subjects, mainly because the first are more used to metrics than the latter.

To select the disciplines, the categorisation used by Becher and Trowler (2001) is applied. They distinguish between 'hard-pure' (pure sciences, such as physics, biology, mathematics or chemistry), 'soft-pure' (humanities, such as history and philosophy, and pure social sciences, such as psychology or anthropology), 'hard-applied' (technologies, such as engineering, agriculture, medicine or computer science), and 'soft-applied' (applied social sciences, such as education, accounting, journalism, management or law) subjects.

Thus, similar departments/ disciplines are considered in both universities. Eight departments are selected in each location. The choice of subjects is listed in Figure 1.

	Hard	Soft
Pure	• Chemistry • Mathematics	• Political Science • Humanities
Applied	• Computer Science • Engineering	• Education • Business

Figure 1:   Subjects considered in each university

When choosing departments, their governance structures are also taken into consideration. The sample includes: bigger departments, usually with devolved budgets and 'heavier' structures; and smaller departments, with very flat structures and more dependent from the centre.

This diversity favours different scenarios, possibly contributing to drawing conclusions and answering the main research question.

The next section focus on the methods used to collect data.

Data collection

Sources

The use of a case study design does not imply that the research methods have to be exclusively qualitative. In fact, one of the benefits of choosing a case study research is that it allows researchers to deal with a range of sources of evidence, given the researcher's "further confidence that we've really understood what was going on" (Miles and Huberman, 1994: 10).

Thus, in this research, mixed methods, both qualitative and quantitative, are used. Rossman and Wilson (1991) suggest three broad reasons for using both qualitative and quantitative data: first, to enable confirmation or corroboration of each other via what Denzin (1978) named 'triangulation'; second, to elaborate or develop analysis, by providing richer detail; and finally, to initiate new lines of thinking through attention to surprises or paradoxes.

According to McEwan and McEwan (2003), by allowing triangulation, a multi-method approach increases credibility by reducing the risk of jumping into conclusions based on insubstantial evidence.

This research uses the following combination of methods to assemble information:
- Document analysis at a national level and at case level;
- Individual semi-structured interviews with 'key actors' in each university. These include 'top managers', such as the Vice-Chancellor, the Pro-Vice Chancellors and the Registrar, but also Heads of Departments, other academics, students, non-academic staff and lay members who either sit in the major governing bodies of both universities or play important roles in the governance and management structures of those institutions;
- A survey to everyone that sits in governing bodies (academics, students, non-academic staff and lay members), and that has not been interviewed, in order to

assess their perceptions of current internal conditions, concerning both performance management systems and governance structures.

The following sections explore: the advantages and disadvantages of each of the sources, and the reason for doing a survey after the interviews.

The documents

Document analysis is an important mean of increasing the available information for comparison. It consists in the use of existing material, and it can be characterised as (Verschuren and Doorewaard, 1999):

- being relatively easily accessible;
- allowing a look to the material from a different perspective than at the time of its production;
- not needing contact with the research object.

As stated above, within the scope of the research, documents are analysed both at national level and at case level:

- *National level* – at a national level, all the major governmental documents that have affected both the British and the Portuguese higher education systems are analysed. Plus, external reports concerning the evaluation of both countries' higher education systems and official statistics related to both systems are looked at. The objective is to understand the contextual differences between both systems, especially in order to comprehend how issues related to performance measurement and management are dealt with and how universities are organised within each system.
- *University (case) level* – at the university level, policy and strategic documents, minutes of meetings, the results of internal surveys, and statistical data related to each site are analysed. The goal is to comprehend the way both institutions function, allowing cross-analysis between these sources and the other sources used in the research.

Given that the documents analysed are entirely produced by others, they present some limitations: first, the researcher does not have any influence over them; second, it cannot be guaranteed that the information will fit the research questions; and third, it may not allow comparisons across universities, since the criteria used may differ across institutions.

Therefore, another method is used to collect data: semi-structured interviews.

The semi-structured interview

Semi-structured interviews are the main tool used to collect data for interpretive research and, following the tradition of phenomenological research, the present study utilises predominantly qualitative data collected through this method.

The semi-structured interview is chosen for this research given that it is an essential source of case study evidence, since most case studies are about human affairs. According to Yin

(1994: 85), "these human affairs should be reported and interpreted through the eyes of specific interviewees, and well-informed respondents can provide important insights into a situation. They can also provide shortcuts to the prior history of the situation, helping the investigator to identify other relevant sources of evidence".

The term qualitative interviewing is usually intended to refer to in-depth, semi-structured or loosely structured forms of interviewing. Burgess (1984: 102) calls them "conversations with a purpose". Generally, these types of interviews are characterised by: a relatively informal style, for example with the appearance of a conversation or discussion rather than a formal question and answer format; and the assumption that data are generated via interaction, because either the interviewee(s), or the interaction itself, are the data sources (Mason, 1996).

In this research the interview process involves one-to-one semi-structured interviews and takes place in their natural settings, being the number of interviews conducted at each location around forty. The interviewees are Vice-Chancellors or Rectors, Pro-Vice Chancellors, Deputy Vice-Chancellors, Registrars, Chairs of Faculty Boards, Heads of Departments, Chairs of governing bodies, the Presidents of the Students' Union, students that sit in governing bodies, and other important actors within universities in both countries. These interviewees have been chosen given that: first, they possess a lot of information on internal conditions, on the dependency of the institution on the State and the market, and on the way performance is assessed internally; and secondly, they are expected to play a key role in the process of decision-making concerning the choice of procedures in order to enhance performance.

The interviewees are asked questions about: the implementation and functioning of performance management systems in their university, both at a central level and at a departmental level; the functioning and composition of the existing governance and management structures; the changes that have occurred in the governance structures, resulting from the implementation of performance management systems; the influences exerted on performance management systems by each level of decision-making and each one of the groups that compose the governing bodies (students, academics, non-academic staff and lay members); and their views on what should change, both on the existing performance management systems and on the existing governance structures.

Additionally, some further interviews are conducted with a few people that have a deep understanding of the functioning of each country's higher education system, such as people who have been involved in national higher education policy development, or a deep knowledge of the functioning of each of the chosen universities.

The study also includes two pilot interviews in order to assess the suitability and clarity of questions to respondents. Moreover, during the interviews, notes are taken and a digital voice recorder is used to capture data, in order to enable its transcription for further analysis.

The interviews also provide a starting point for a more focused survey, which is administered to all the members of each institution's governing bodies, including academics, students, non-academic staff and lay members.

The survey

Although many studies in the area of social sciences conduct the survey before doing the interviews, in order to gather information to then go deeper in the interviews, in this research these methods are used the other way around, even though at the end of the survey, people are asked if they are available for further interviewing. This choice is made taking into consideration that, given the complexity of the issue being analysed – performance management systems –, which is not familiar to everyone, the survey has to be focused, in order to enable people to answer it. Therefore, it is thought that the in-depth information should be collected before the design of the survey.

The survey has been chosen for three main reasons: first, to provide data that represents the reality of each university, by including everyone that sits in governing bodies and not only key actors; second, to get information about the variables being analysed and allow correlations; third, to contrast the official data with the survey's outputs; and finally, to contrast the interviews' outputs with the survey's outputs.

Since they are less costly and time consuming than interviews, surveys have two major advantages: first, they cover more people, enlarging the data-set; and second, they enable the measurement of the units of analysis. They have, however, the major disadvantage of conditioning the respondents to the given options, sometimes inducing their answers. This is why the questions should be formulated in a very clear way, and the survey should not too elaborate, in order to ensure participation.

The questions asked in the survey are similar to the interview ones, but are more structured. At the end of the survey there is an open question, where people are invited to add in any additional comments about governance structures and performance management systems they feel may be important to the research. Additionally, some personal data is asked, in order to characterise the sample.

Moreover, every respondent is asked if he or she would be available for being interviewed by the researcher, if considered necessary.

DATA ANALYSIS

In line with the interpretive view adopted, this research uses the principles behind Radnor's (2002) six-stage approach to prepare semi-structured interviews for analysis, and to interpret data, in order to answer the research questions. This approach ensures a highly rigorous and logical process of coding data, providing a clear audit trail back to data. The six steps of the approach are:

1. Topic ordering;
2. Constructing categories;
3. Reading for content;
4. Completing the coded sheets;

5.   Generating coded transcripts;
6.   Analysis to interpreting data.

This process can be greatly simplified by using NVivo 7, a qualitative data analysis software package, which avoids stages 4 and 5. Data from the semi-opened question present in the survey are categorised by using NVivo 7.

Data from the survey is treated through quantitative analysis software (Statistical Package for the Social Sciences – SPSS).

CONCLUSION

The aim of this paper was to develop a research design that would enable the understanding of how governance structures relate to performance management systems in universities. This analysis, which, to our knowledge, has not been done before, is considered fundamental to devise ways to effectively measure performance, report it, and integrate performance information into decision-making.

The difficulty in deciding what research design to use was enhanced by the complexity of the topic, which gathers two big and distinct literature areas – performance management systems and governance, and by the rather scarce literature on this topic. This is why it was argued that the research should be exploratory rather than descriptive or explanatory.

Considering that one of the gaps found in the literature was the lack of comparative studies in the field, it was said that a comparative study would be appropriate, especially if done between two higher education systems that have started to worry with performance management issues with a gap of thirty years: the British and the Portuguese.

Being a macro-level analysis insufficient to answer the question 'How do governance structures relate to performance management systems in universities?, a case study design was suggested, and two universities with a common set of characteristics, especially considering their structure and good performance, were selected: the University of Aveiro and the University of Warwick. At each location different disciplines were selected following the categorisation used by Becher and Trowler (2001), who distinguished between 'hard' and 'soft', 'pure' and 'applied'. This categorisation was chosen based on the fact that, arguably, 'hard' disciplines deal better and implement more easily performance management systems than 'soft' disciplines, especially due to the fact that they are usually more used to metrics. Moreover, it was argued that different governance structures should also be taken into consideration when choosing departments, enabling the creation of different settings and, thus, contributing to understand the relationship between governance structures and performance management systems.

In what the methods are concerned, mixed-methods were considered more credible, and two main sources of data were found fundamental to answer the research question: semi-structured interviews and a survey. It was argued that doing the interviews first, to key actors in each university's governance structure, would enable the design of a much more

focused survey, done to everyone that sits in governing bodies and that has not been interviewed, enhancing the probability of people completing it.

The interviewees should be people that play a key role in the process of decision-making, especially concerning the choice of procedures in order to enhance performance. That is to say: Vice-Chancellors, Pro-Vice Chancellors, Deputy Vice-Chancellors, Registrars, Chairs of Faculty Boards, Heads of Departments, Chairs of governing bodies, the Presidents of the Students' Union, and other important actors within universities in both countries. The answers given by these people that belong to different levels of governance and represent different groups within the decision-making process will certainly give a complete picture on how the introduction of performance management systems has influenced the internal structures of the university, including the roles, influences and accountabilities of each one of the groups described above. Moreover, it will enable an understanding of how each one of these levels and groups may influence the implementation and functioning of these systems.

Being anonymous, the survey will allow for a comparison of results with those extracted from the interviews. In addition, it will allow for the analysis of association between variables.

At the end, the cross-case analysis will enable the comparison of results between the performance management systems and governance structures of both universities at three levels: central, departmental and individual level. It will also allow for a comparison between the views of the four groups that compose the governing bodies of each institution – academics, students, non-academic staff and lay members, considering those two variables.

From what has been said, it is expected that this research design will be adequate to understand how governance structures relate to performance management systems, filling in a gap that existed in the literature of higher education.

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[1] http://www.eciu.org/about/eciu1.php