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Third Mission Activities: University Managers' Perceptions on Existing Barriers

Tatyana Koryakina ^{a, b}, Cláudia S. Sarrico ^{c, b*} and Pedro N. Teixeira ^{d, b}

^a University of Aveiro, Aveiro, Portugal; ^b CIPES Centre for Research in Higher Education Policies, Porto, Portugal; ^c ISEG Lisbon School of Economics & Management, Universidade de Lisboa, Lisboa, Portugal; ^d Faculty of Economics, University of Porto, Porto, Portugal

Abstract

In the context of increased international competition and financial austerity, an economic development mission has become an important strategic and policy issue for European higher education. This paper aims to contribute to knowledge regarding universities' engagement with the external environment and its impact on internal governance and management. Using a qualitative case study approach, the paper explores third mission activities in Portuguese universities and examines university managers' perceptions about the barriers to their greater effectiveness. The results identified two major types of barriers: external, relating mainly to government regulations and funding allocation, and internal, involving organisational characteristics. The study also highlighted some tensions between a growing emphasis on third mission activities and their institutionalization process within universities. The results are relevant to researchers who would like to continue the debate in a comparative perspective; as well as to policymakers and institutional leaders.

Keywords: third mission activities, income diversification, external barriers, organisational characteristics, university management

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*Corresponding author. Email: cssarrico@iseg.ulisboa.pt

Introduction

In modern knowledge societies, universities play an increasingly important role in achieving economic growth and social progress. Along with universities' traditional missions of teaching and research, an economic development mission has become an important strategic and policy issue for universities, governments and local authorities alike (Etzkowitz and Leydesdorff 1997; Laredo 2007). While there is no singular definition of what 'third mission' means, it can be broadly defined as a third role beyond teaching and research that centres specifically on the contribution to socio-economic development (Jongbloed, Enders, and Salerno 2008) or as a wide range of activities involving the generation, use, application and exploitation of knowledge and other university capabilities outside academic environments (Tuunainen 2005).

There has been an especially strong emphasis on entrepreneurship, knowledge transfer and collaboration with the business and industrial sectors at national, as well as European Union levels (EC 2007, 2011). A communication from the European Commission stressed that the contribution of higher education (HE) to growth and jobs can be enhanced through 'close, effective links between education, research and business – the three sides of the same "knowledge triangle", and, furthermore, partnership and cooperation with business should be viewed as a "core activity" of higher education institutions' (EC, 2011). Besides explicit policy imperatives for universities to engage in cooperation with industry and business, third mission activities are an important part of the income diversification efforts of European universities in the current climate of financial austerity (Shattock 2008, Estermann and Prouvot 2011).

In order to fulfil this mandate of third mission, it has been claimed that universities are in need of drastic reforms, which consist of but are not limited to: more institutional autonomy and accountability, increased private investment, partnerships with industry, and internationalization (Maassen and Stensaker 2011).

Despite these growing expectations on third mission activities at EU level and policy initiatives at national government level, local manifestations of structural and procedural arrangements will differ according to individual institutional dynamics. While there is abundant literature on academic engagement with third mission, considerable gaps still exist with respect to analysing its impact on internal governance and management.

This paper contributes to further understanding of the university third mission agenda and to improving current knowledge about institutionalisation of third mission activities.

It aims at identifying internal as well as external conditions for effective development of third mission activities. In particular, this paper is concerned with Portuguese universities, therefore adding more empirical evidence to the existing literature. It examines universities top and middle managers' perceptions about the barriers in the relations with the external environment.

In the next section we reflect on governance changes that paved the ground for organisational transformations towards more entrepreneurial governance and discuss organisational tensions regarding this transformation. Then, we briefly present the Portuguese HE landscape and methodological choices of the study conducted at two case universities. Section five is devoted to the main results of the study and in the end, some conclusions are drawn.

On the Path to the Entrepreneurial University: Governance Reforms and Organisational Ambiguities

Governance Changes and Internal Transformations of Universities

In recent years, especially in Continental Europe, the traditional forms of university governance have come under pressure (Paradeise et al. 2009). There has been a considerable loss of confidence in the capacity for self-governance by the academic community. At the same time, strong state regulation has become subject to a fundamental ideological critique, in HE as in other domains. In Europe, New Public Management reforms (Pollitt 1990) have led to changing modes of inter-organisational steering as well as institutional governance of universities. According to Paradeise et al. (2009), the reforms focused on changing beliefs, whereby public agencies were induced to change from bureaucratic mode to an entrepreneurial one and started operating as business enterprises in the market. It was believed that implementation of business techniques in HE would provide the incentive for universities to improve the quality of education and research, to improve academic productivity, to encourage innovation and, in general to improve the services the system offers to society (Shattock 2014).

One of the most significant reforms observed in the past decades in Europe has been the increased autonomy given to HEIs (de Boer and File 2009). The state has been taking a more supervisory and 'steering at a distance' role by delegating its decision-making power to the institutional leadership and governance (Van Vught 1994). At the same time the government has tightened control over HE performance, shifting from *a priori*

evaluation to *a posteriori* evaluation regime (Neave 2012). University autonomy is considered to be one of the major prerequisites to successful income diversification, as found, for example, by Estermann and Nokkala (2009). Aghion et al. (2010) also conclude that universities are more productive in terms of turning research budgets into research results when they are both more autonomous and face more competition. For Clark (1998), entrepreneurial university puts autonomy on a self-defined basis: diversify income to increase financial resources, provide discretionary money and reduce government dependency.

As the direct role of the state is reduced and the autonomy of the individual universities increases, universities are becoming 'organisational actors' (Kruecken and Meier 2006), i.e. integrated, goal-oriented entities that deliberately choose their own actions. Conceptually, this relates to the notion of an entrepreneurial university (Clark 1998; Etzkowitz 2003). Central to the idea of the entrepreneurial university is its proactive and opportunistic attitude (Clark 1998). The entrepreneurial university exploits its strengths in order to achieve maximum political and financial gains in the marketplace, relying on the initiative and risk-taking of individuals and groups in different parts of the institution and a clear managerial framework from the top. Entrepreneurial forms of management are most likely to be found when the institution needs to generate income or to enhance its reputation in a variety of different ways in order to prosper or to survive (Shattock 2003; Etzkowitz 2003). Although there is no clear cut answer for what entrepreneurial management should be, as, in the words of Clark (2004, 183) '... complex universities operating in complex environments require complex differentiated solutions'; there are some common features that have been mentioned by authors studying this phenomenon (Clark 1998; Sporn 1999; Shattock 2008):

Clear Goals

There is a growing tendency of universities to define their 'own' organisational goals, which has become apparent through the development of mission statements, university strategies and the implementation of strategic planning and related management practices (Kruecken and Meier, 2006; Machado, Taylor, and Peterson 2008). According to Eastman (2006), as institutions move away from the state towards the market, their goals become narrower, their administrative hierarchies become more pronounced and the power of their faculty diminishes.

Committed Leadership

It has been observed that when income is derived from many sources, institutional management must be sufficiently flexible to respond to opportunities that arise, but at the same time contained by a broader university strategy for the institution not to lose the sense of purpose (Williams 1992). These requirements have led in many cases to strengthening the role of central administration (Bleiklie and Kogan 2007; Clark 1998). Strong central leadership is seen as the key to institutional success and this leadership is as likely to be managerial as academic. The increased autonomy of institutions also gives more power to institutional leaders to become agents of change.

Flexible Organisational Structure

Universities all over Europe have been confronted with changing environments (Kwiek 2012). Adaptation of university structures can be active, or even proactive reaction to the new situation. One common response is to restructure aiming at increased flexibility, efficiency and effectiveness. This involves new procedures to manage the relationship with the environment, new authority structures and new ways of resource allocation (Sporn 1999, Pinheiro and Stensaker, 2013).

Entrepreneurial Culture

Successful implementation of third stream activities also depends on the entrepreneurial spirit of members of the institution and on cultural and organisational conditions necessary to support these ventures. While many third stream activities develop as bottom-up initiatives, senior administrators' role can be essential to their success and sustainability. Developing and sustaining a culture supportive of change requires leaders who are oriented to problem solving, operate on trust and with openness, are self-critical, are internally responsive and flexible, and provide expert attention (Davies 2001).

The above mentioned organisational features are usually associated with the ability of higher education institutions (HEIs) to effectively engage in third mission activities. However, cooperation with society has been a rather complex process (Pinheiro, Benneworth, and Jones 2012; Whitley 2008) due to inherent characteristics of universities, as well as broader features of political economy. In the next section some reasons for this complexity are presented.

Understanding Organisational Complexity of Universities

The existing literature points out, that the realisation of organisational change at universities is a challenging process for various reasons (Stensaker et al. 2014).

In order to explore these reasons the analytical framework developed by Pinheiro, Benneworth, and Jones (2012) is used. The authors distinguish five ambiguities through which the complexity of universities as organisations and institutions can be described: of intention; of understanding, of history, of structure and of meaning.

The *ambiguity of intention* refers to the notion that universities have been conceived as having relatively ill-defined and multiple goals that are often at odds with one another.

The *ambiguity of understanding* relates to the fact that the results of teaching and research are difficult to predict in advance. In economic terms, education belongs to the so-called 'experience' goods, i.e. goods whose quality and price is difficult to observe in advance; these characteristics can only be ascertained upon consumption. The role of universities in regional development, for example, showed considerable different results from locality to locality, even in cases where universities have similar sizes, institutional profiles and core competencies (Pinheiro, Benneworth, and Jones 2012).

The *ambiguity of history* pertains to university structures being largely shaped by path dependencies or past trajectories, resulting from the interplay between local traditions and environmental adaptations. The *ambiguity of structure* is used to describe a specific way in which universities are organised. Organisational structures have reflected the claims of professional control by joining discipline-based departments into faculties and thus forming the building blocks of HEIs. Reflecting this arrangement, HEIs were called 'loosely-coupled systems' (Weick 1976). This term implies a relative lack of coordination; a relative absence of regulations; little linkage between the concerns of senior staff as managers and those involved in the processes of teaching and research; a lack of congruence between structure and activity; differences in methods, aims and even missions between departments; little lateral interdependence among departments; infrequent inspection; and the 'invisibility' of much that happens (McNay 1995).

Finally, the *ambiguity of meaning* is related to the notion that universities are highly symbolic entities characterised by a prevalence of various sub-cultures and their respective norms, identities and traditions (Clark 1983). Among other things, this implies that internal stakeholder groups not only sense external dynamics differently, but also disagree in the ways in which university structures, functions and traditions ought to be

locally adapted in order to respond to new environmental demands (Pineiro, Benneworth, and Jones 2012).

Keeping in mind these internal tensions and ambiguities the following sections will proceed with the analyses of the Portuguese universities and the challenges that income diversification and third mission activities present for university governance and management from the perspective of the institutional leadership.

National Higher Education Landscape

Portuguese HE has experienced considerable transformations in the past years (Neave and Amaral 2013). The major organisational changes were prompted by a HE governance reform. Following the OECD report of December 2006 and its recommendations, a reform of the legal-judicial system of HE was prepared and subsequently approved by Parliament in the autumn of 2007 (Law 62/2007). The Law (RJIES – acronym in Portuguese) recognised the principle of diversity of internal organisation and enabled each HEI to develop its own statutes within a broad framework. This broad framework included a number of significant changes: fewer members in the main governing body – General Council, obligatory participation of external members, and more power to rectors. One of the main changes introduced by this law was the possibility of a public institution to adopt the status of a public foundation governed by private law. One of the underlying conditions to become a foundation university was the ability to raise 50% of its income from other than government block grant sources. A university foundation has potentially the following advantages: borrow and raise funds; full control of budgets to achieve objectives; set administrative and management procedures; create own academic careers; set salaries and reward systems; set criteria and size of student enrolments. Foundation universities are funded according to 5-year strategic plans presented to the responsible Ministry.

Overall, the 2007 reform was aimed at making universities more flexible, strategic actors, better able to connect to their external environments. Although it is too early to determine the impact of this reform, it may serve as catalyst for change.

The Portuguese governance reform was implemented in the environment of financial austerity and Europe-wide economic crisis. Since 2001 Portugal has experienced a fiscal crisis, breaching the stability pact in that year and leading to the adoption of painful budgetary measures. This has led several Portuguese governments to freeze promotions

and salaries in the public sector (including public HE), to cut higher education’s budget and to restrict HEIs level of expenditure (even when using their earned income). Thus, the last decade was characterised by significant financial difficulties for public HEIs. This situation has led HEIs to pursue non-government revenue streams, as well as competitive public funds, both national and international.

The funding of public HE in Portugal has evolved towards greater reliance on institutions’ capacity to find alternative sources to government block grants (Table 1).

Table 1. Share of public transfers and earned income of public HE 1989-2009

	1989	1993	1996	1999	2004	2006	2009
Public transfers	95%	92%	87%	70%	72%	70%	69%
Earned income	5%	8%	13%	30%	28%	30%	31%

Source: Teixeira and Koryakina (2013).

The main source of earned income has been rising tuition fees, although other areas such as research funding, EU programmes and the commercialization of services have all gained increasing relevance (Teixeira et al. 2014).

Methodology

To analyse universities managers’ perceptions on the barriers regarding relations with the external environment, a case study approach was chosen and two case-studies were conducted at Portuguese public universities. The two sampled universities differ in size, location, age and offer of study programmes. University A (UA) is one of the so-called “third generation” universities founded in the 1970s and has an explicit regional mandate (Amaral et al 2002). The university adopted a foundation status in 2009. University B (UB) is one of the oldest universities in Portugal and is located in a large metropolitan area. UA has approximately 13,500 students and employs nearly 1,500 members of staff. UB enrolls around 20,000 students and employs around 3,000 staff. UA offers mostly applied study programmes, engineering, for example, and UB has a more classical institutional profile. UA has a flat management structure without intermediate units (faculties) and is characterized by strong centralized management, UB is organised into autonomous faculties and institutes, some of which are subdivided into departments.

A total of 28 semi-structured interviews with top management (vice-rectors, pro-rectors, and administrators) and middle management (faculty deans, heads of departments) were conducted during 2010-2011. Each interview had an approximate

duration of one hour and was subsequently transcribed in order to be analysed with the content analysis software NVivo.

In the choice of the academic units we tried to achieve the most diverse representation: old and new; large and small; in pure and applied sciences, in hard and soft sciences. We believed that this mix of basic units would cover as many extensions for third mission activities as possible: research, instructional initiatives, industrial collaboration, and service provision. On the list of interviewees we also included coordinators of interface units, which serve to promote and facilitate cooperation with society. Academics in management positions were selected because they are the ones in charge of formal decisions, and they have a broader view of organisational processes.

The data analysis resulted in a grid with different dimensions and categories which were developed from two main sources: interview data and theoretical framework. The categories included the following items: strategy, success factors, constraints, incentives, motivations and environmental context. The data from the interviews were confirmed and completed by documentary analysis. The interviews were coded in the following way: UA – University A; UB – University B; TM – top manager; HD – the Head of Department, FD – Faculty Dean. Additionally, each interview was assigned a number.

Main Results

The results presented in this article are part of an exploratory study on the impact of income diversification on Portuguese universities' governance and management.

Barriers from Career Structure

The rules for career assessment and progression have been cited as one of the major constraints for a larger involvement of academic staff in cooperation with industry, business companies and the society at large. In Portugal, there is no tradition of differentiation in remuneration of the academic staff (such as merit-pay). Other than what concerns the different categories of academic staff, salaries are rigidly fixed according to these categories and to the number of years of work in each one of these. A career assessment situation occurs only at particular moments centred at a process of promotion, of public competition for a vacant position or at the end of a temporary contract, to be changed into a permanent one. The distribution of importance of each activity (teaching, research, management) has been usually skewed to research performance. Thus, the main driver for an academic career progression has been research performance. Such activities

as consultancy work, contract research for industry or business companies, service providing for local community have had no or very little impact on career assessment:

'There is an area that I think is fundamental and where there should be a significant alteration for this question of valorisation [of the service mission] to make sense, that is the question of academic career statutes.' (UATM11)

'From the point of view of a scientific career, this type of work [service to community] in many cases does not count in terms of evaluation. This line in a CV has an absolutely marginal or null value from the point of view of public competition evaluators.' (UAHD13)

These findings point to a weak staffing autonomy at case universities. The freedom to recruit and set salary levels for academic and administrative staff was found to be positively linked to the degree of income diversification. (Estermann and Pruvot 2011). These findings are also confirmed by Jongbloed, Enders, and Salerno (2008) who point out that criteria of academic performance largely do not take into account engagement with non-academic communities. While publish or perish culture may be found in the prestigious universities, the academic workload and teaching responsibilities determine the terms of employment in the more teaching oriented institutions. A case-study analysis of Norwegian, Finnish and South African universities by Pinheiro (2012) also revealed an absence of macro- (government) and meso- (university) level mechanisms motivating academics to become actively involved with third stream activities.

However, some change can be expected as the academic employment statutes were changed in 2009 (Decree-Law 205/2009). Among other aspects the new statutes foresaw the need of each university in promoting regular evaluations of its staff, based on four criteria: quality of teaching; research performance; contribution to third mission activities and participation in the management of academic activities. They also intended to make mobility between sectors easier: university professors may be freed from their university duties, for specified periods, to carry out extension services or research projects outside their university. The effectiveness of these new mechanisms will depend on the regulations set up internally by each institution and also on the way they will be implemented in practice.

Cultural Barriers

Culture can be defined as a pattern of basic assumptions, invented, developed or discovered by a given group, as it learns to cope with its problems of external adaptation and internal integration that has worked well enough to be considered valid (Schein 1992).

The integrated entrepreneurial culture is one of the components of Clark's constituents of universities' transformation (1998). The entrepreneurial culture is generally characterised not only by the willingness to take risks and to experiment with new things, but by the ability to evaluate those ventures, learn collectively from experience, and transfer the essence of experience across the university (Davies 2001). The importance of the organisational culture has been emphasized by almost one third of participants. At UA, organisational culture was considered by interviewees as propitious to income diversification.

'The university has always tried to be innovative and pioneering. I know that this is very subjective but I feel that this culture exists, our own culture.' (UATM1)

'I think we can say that in our collective DNA exists a notion that we work, or we research, or we teach because in a way we want to contribute to society.' (UATM11)

In contrast, interviewees at UB mainly spoke of the lack of entrepreneurial culture, both inside the institution and generally in Portuguese society.

'Maybe our problem is not having an internal appreciation of entrepreneurial activities; in our [organisational] culture.' (UBHD8)

'The first step to success is becoming aware of the fact that we are looking for new income streams. However, in Portuguese culture, this awareness is not common and immediate.' (UBTM2)

One faculty's dean stated that pro-activity in terms of knowledge valorisation is not part of the university's academic culture yet. He reflected on the role of the technology transfer office, for example:

'The technology transfer office cannot be based on the American model in a sense that its staff can stay in their office and the scientist will go there and knock on the door. Here they have to be more active, they have to talk and try to excite the scientists. And it is not easy.' (UBFD4)

The interviewees also pointed to another source of tensions in cooperation between business and the university, relating to the differences of expectations and objectives.

'Some academics want a perfect collaboration. A perfect collaboration usually bypasses the needs of companies and therefore there is a misunderstanding and a mismatch of expectations between the actors. It leads, from the internal and the external point of view, to a certain devaluation [of cooperation].' (UATM1)

'I believe that what we do not yet feel on the part of companies is that they treat this relationship with a certain humility and sustainability. The companies have many problems and come very biased, money-oriented to be able to pay salaries [to their employees] and support their own company.' (UAHD12)

The respondents also highlighted the limits to how closely universities and industry can work together and significant cultural differences between the two.

'Sometimes it may not be compatible. I can get money through business and at the same time do research with them. They do not like it very much, they want results for yesterday, very fast things and science is something that takes time, it has a very special pace.' (UAHD16)

Another cultural aspect mentioned by university managers is the perceived lack of scientific culture in small and medium enterprises, which represent the major part of the Portuguese economy. In the words of one head of department:

'The Portuguese society is not prepared to finance education, the training of its staff. Therefore, American models are very interesting but in Portugal maybe 30 years from now the society will get there.' (UAHD13)

It was recognized by the interviewees that despite existing cultural differences, universities, industry and business are moving towards each other. There is an understanding that practical and theoretical knowledge can and should complement each other. In the words of one respondent: ‘the gap that existed in the past is beginning to narrow a little’ (UAHD13). Our findings also showed that the degree of institutionalization of third mission activities is related to path dependencies of each university. Historically, UA has had an explicit regional development mandate and over the years has created what Clark (1972) called an “organisational saga”. The respondents from this university showed a greater awareness and acceptance of third mission activities. UB, on the contrary, due to its highly decentralized structure, did not show a unified discourse regarding third mission.

These findings are corroborated by the study of Pinheiro et al. (2012) which argues that path dependencies both at system and institutional level condition regional engagement. The authors present a stylised university model, contrasting classic, regional and entrepreneurial universities and their cultural mindset regarding the third mission. Our data seem to confirm that classic university (UB) shows a lesser degree of engagement with third mission activities than a regional university (UA).

Managerial Barriers

An increased importance of management and administrative staff has been noticed at both universities. It was reported that there was a lack of a new type of professionals who could ‘interpret’ scientific knowledge for industrialists and other external audiences. These professionals should not be simply administrators, academics or managers – they should be all three at once. They should understand the motives and interests of all three communities. At both universities, respondents mentioned the need of such professionals and an attempt to create such a new ‘breed’ of administrative staff:

‘He needs to have a grasp on technology that is being analysed, knowledge of the market, management skills, financial and economic skills, interpersonal communication skills, negotiation skills, let alone the knowledge of legislation. Even though it is not us who will write the contract, we have to be able to tell how the contract should be elaborated. Here there are seven or eight characteristics that we would have if we had seven or eight people working together, but a knowledge manager has to have them all.’ (UATM 11)

The importance of hybrid roles in universities was pointed out by Whitchurch (2013) who studied roles that have arisen between professional and academic spheres of activity, in what the author termed third space environments. Other third space professionals that interviewees felt were lacking at their institutions were in the area of research project management, marketing and fund raising.

Poor communication within universities was regarded as a barrier to the development of third mission activities. This relates to communication at different levels: between the centre and the academic units; between different academic units; between research centres and individuals. At UA the complaints were mainly from department heads in relation to the central administration. At UB, the lack of communication was noticed more between different faculties. As the university has a decentralized structure, the interviewees admitted the existence of a 'protective', 'non-sharing' culture at faculty level.

'We at [UB] do not know what the Faculty A does, or the Faculty B does, and maybe person A is doing the same as person B. Communication is one thing that has not been functioning. It is not always easy.' (UBFD9)

Interviewees also referred to poor communication in terms of data collection about research and entrepreneurial activities at each academic unit and its dissemination among university community as well as insufficient information about funding opportunities. They feel better communication would facilitate collaborative research within the institution and improve individual and research groups' funding opportunities.

The existence of managerial barriers confirms the ambiguity of structure present at both universities. Despite the increased focus on third mission activities, they are not tightly coupled with primary activities of teaching and research. Besides, what constitutes third mission activities is rather loosely defined, which shows the ambiguity of meaning inside universities.

Funding Pressures

According to the respondents from both universities, funding changes have powerfully influenced the university responses to cooperation with society. The main changes relate to diminishing state funding to HEIs in relative terms and the increased funding for research available on a competitive basis.

'There is much more access to competitive funding, both from competitive projects of FCT (National Science and Technology Foundation) and AdI (Innovation Agency), as well as from projects funded by the European Union. Thus, in relation to the past if not ten, but definitely 25 years, the situation has changed radically.'
(UAHD9)

However, in relation to steering and supporting third mission activities, the role of the state has arguably been far less significant. It was felt that while cooperation between university and society is high on the agenda, a regulatory framework for this cooperation is missing.

The economic crisis that started in 2008 was perceived by the interviewees as a threat to generating revenue from third stream activities:

'It is a lot more difficult to obtain other kinds of funding either through the state, local administration or through other foundations. Because these sources also eventually run out of money. And with a crisis that we are experiencing now, I am afraid we will suffer from the decrease in financial availability of these entities.'
(UBFD9)

The interviewees demonstrated preoccupation with the private sector's ability to support HE in the current economic climate as the funding base of private companies and philanthropic foundations had been affected by the economic crisis, impacting on their donating capacity.

As public funding represents the biggest share of universities' budgets, fluctuations in public allocations were perceived as having the biggest impact. For top managers at UA, there was a minimum threshold of at least 50% of public funding that guaranteed the university's normal functioning. It has been noted that high levels of uncertainty in obtaining financial resources negatively affect the establishment of medium- and long-term scientific agendas, attractiveness of human resources and in some cases — in the experimental sciences — the maintenance of conditions to develop research and teaching activities (Horta 2008).

Top managers at both universities also mentioned that annual budget allocations complicate long-term strategic planning. They preferred multi-annual funding, which

allows for a higher degree of financial autonomy, and advocated for including incentives for third mission activities into current funding allocation system.

Concluding Remarks

The empirical analysis contributes to the on-going academic debate about transformations of universities as organisations and institutions due to different environmental pressures (Paradeise et al. 2009; Pinheiro, Benneworth, and Jones 2012). In this article we looked particularly at the factors perceived by university managers as barriers towards more effective third mission activities.

The analysis of the interviews showed that the undertaking of a third mission is still obstructed by many barriers, both external and internal. According to the interviewees' perceptions, there were more external than internal challenges for developing third mission activities. The major obstacle was related to the structure of the academic career, in particular, to the evaluation of academic staff's work and its influence on career advancement. The absence of reward and incentive systems impedes tighter coupling of third mission activities with the primary activities of teaching and research (Pinheiro 2012). In relation to this, career incentives need to be changed and the third mission activities need to be valued. Financial pressures were another major challenge for university managers. Funding allocation mechanisms and the current financial situation of Portuguese HE do not allow room for financial manoeuvring, making it difficult for HEIs to respond to emerging opportunities or maintain existing commitments (Teixeira and Koryakina 2013).

It can be concluded that the external environment shaping universities' third mission in Portugal presents various tensions and ambiguities. On the one hand, there are external pressures and expectations, prescribed by current legislation and the funding context, for universities to adopt more entrepreneurial behaviour. On the other hand, the adaptation of universities' institutional environments is not supported by regulations and funding arrangements, which is clearly limiting the rationalization and institutionalization of third mission activities.

The results of the study have also confirmed the internal complexity of universities as organisations and their highly symbolic nature. There is still a great amount of ambiguity in relation to third stream activities and income diversification. The *ambiguity of history* was revealed in the role of path dependencies in the process of cooperation with the

external environment. UB is a classical university, while UA is a regional university with an explicit entrepreneurial culture. The study has demonstrated that cooperation with society was more facilitated for UA than for UB. On the importance of organisational history, Kruecken (2011) comments that universities, which in their past showed a high degree of openness toward their social environments, will incorporate new institutional elements that circulate at a trans-national level easier than those whose organisational history was mainly defined by concern with purity and a sense of elitism.

Despite the changes towards more centralisation and more managerial control over research, third stream activities are scattered across the academic and research units, showing different degrees of involvement. It seems that these activities are still conducted in a somewhat ad hoc manner by enthusiastic academics, without formal procedures being in place, such as reward mechanisms and quality assurance, for example, which confirms universities' *structural ambiguity*. In terms of *ambiguity of meaning*, we found a co-existence of two kinds of normative demands within the universities. One set of norms relates to complying with the imperative of the day, becoming more entrepreneurial and finding innovative solutions for revenue diversification in order to obtain legitimacy and to conform to the outside pressures. However, another set of norms relates to maintaining and supporting traditional academic roles and activities which hold a great value to the interviewees. The interviewees admitted that their primary interest in third mission activities was the contribution of these activities to the core missions of their institutions.

The findings from the case studies point out the importance of the local contexts in the process of adaptation to changing demands. The level of response across universities depends on deeply institutionalized norms, traditions and identities. For example, a historic legacy of UA plays a facilitating role, while at UB it creates a barrier. Other inbuilt university ambiguities, such as the ones of structure, intention and meaning, are impacting on the transformation of universities into responsive and strategic organisational actors (Kruecken and Meier 2006). Thus, the paradox emerges that change and continuity perhaps are connected in highly intricate ways, and that we need to search for concepts and ways in which we can account for more complex understandings of universities as organisations (Stensaker 2015).

This paper presented results of a small-scale study with a statistically non-representative sample. However, the study had an exploratory character and its results can inform future research. For example, other levels within each institution which may

present further insights into the nature of university third stream activities and income diversification can be addressed. Further research into variations of change among individual academics, basic and research units and disciplines can also add to the overall picture. Additionally, perspectives of external stakeholders can be studied.

Notes on contributors

Tatyana Koryakina holds a PhD in Social Sciences from the University of Aveiro, and is a researcher at CIPES Centre for Research in Higher Education Policies, Portugal. Her main research interests relate to higher education finance, funding diversification and third mission of universities.

Cláudia S. Sarrico is Associate Professor at ISEG Lisbon School of Economics & Management, Universidade de Lisboa, and senior researcher at CIPES Centre for Research in Higher Education Policies, where she is the coordinator of the research line resources, performance, and human capital. She works primarily on issues of quality and performance management, with a focus on education, higher education and science.

Pedro N. Teixeira is Associate Professor at the Faculty of Economics, Vice Rector of the University of Porto and Director of CIPES Centre for Research in Higher Education Policies, Portugal. His main research interests are on the Economics of Education and the History of Economics. He has published several journal articles in higher education and economics journals and has edited several collective volumes.

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