

Chapter 9

Importance of Entrepreneurship in the Organizational Performance of Higher Education Institutions

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ABSTRACT

The traditional mission of higher education institutions (HEIs) are training, research, and the transfer of knowledge to society. Nowadays, the third mission has been gaining importance, considering the increasing relevance given to the creation of value by HEIs for society. Entrepreneurial activity is one of the components with more impacts that value creation, but it is still seen as an activity parallel to the main missions of HEIs, where training still takes on special importance. At the same time, the generalized movement of analysis of the organizational performance of HEIs, associated to its strategy but essentially associated with national agencies for accreditations and the rankings, have been direct impacts on its external image and the capacity to obtain students and financing. For the entrepreneurial activity to move from an activity parallel to a prominent activity within HEIs, it must firstly have a strategic framework, but also have measurement mechanisms, based on indicators, that allow to understand the evolution of performance in this area.

INTRODUCTION

The centrality of knowledge and innovation in today's societies has placed major challenges to higher education and its institutions, both in terms of their competitiveness and their sustainability. The recruitment of more and better students, the evolution of new forms of teaching and learning, teachers with more and better qualifications, creation of highly relevant research structures, the innovative nature of

DOI: 10.4018/978-1-5225-8479-7.ch009

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the research developed, the capacity to transfer knowledge to society, the improvement of the quality and performance of the institution and the satisfaction of the needs of the stakeholders, are some of them (Rytmeiter, 2009).

For Nóvoa (2013) the most important challenge facing Higher Education Institutions (HEIs) lies in the link between universities and society in the way that education and science, training and knowledge can contribute to the development of societies of the 21st century. Jongbloed, Enders and Salerno (2008), in the article on the interconnections and interdependencies between the Higher Education (HE) and its communities (local, regional, national or international), understand that from HE is not only expected to have excellent education and excellent research. It is also expected to have mechanisms that allow this excellence to be relevant to the productive process and to the construction of the knowledge society, as the legitimacy, reputation and prestige of the HE will increasingly be determined by the nature, quality and evolution of the bonds with external stakeholders and not only according to internal rules and academic results.

The complexity of the missions of HEIs and the diversity of the information needs of the different stakeholders on the performance and effectiveness of the HEIs have, however, led to a huge difficulty in defining global indicators of performance measurement that can give a complete response (Evenbeck & Kahn, 2001; Bhatia, 2009). The role of HEIs in today's society, shared between teaching, research and the third mission (Mano, 2015), implies that the evaluation and measurement of organizational performance must have the capacity to simultaneously contribute to a continuous improvement of HEIs in which each one has clearly differentiated characteristics and objectives (Cherchye, De Witte, Ooghe, & Nicaise, 2010), but also to contribute to meeting the needs of external stakeholders and to improving the economic and social well-being of the Societies where they are inserted (Alves, Mainardes, & Raposo, 2010).

Despite the numerous studies, there has been a huge difficulty in defining global indicators (Cherchye et al, 2010), particularly in the relation with society. Thus, leading authors and politicians to argue that performance measurement should be in line with the objectives set by the institutions themselves, in an internal logic, aligned with their mission, and not only on the basis of blind indicators, in an external logic (Johnes & Yu, 2008; Grilo, 2010).

The objective of this chapter is to analyse a set of indicators of organizational performance that allow to measure the contribution of HEI to entrepreneurship and to the creation of value for society. The development of this chapter was based on a study of indicators of organizational performance for HEIs, where was identify a reduced number of indicators that can measure the relationship between HEI and society. Thus, considering its importance of this relationship and capacity to create value, in particular through the entrepreneurship activity, an exploratory study was conducted to analyse a set of potential indicators that can measure that relationship, based on the characteristics associated to the performance indicators. The chapter is divided into 7 sections: introduction; organizational performance and importance of performance indicators; organizational performance in Higher Education Institutions; performance indicators in Higher Education Institutions; entrepreneurship as a variable of organizational performance in Higher Education Institutions; monitoring the entrepreneurial activity of Higher Education Institutions; and conclusions.

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ORGANIZATIONAL PERFORMANCE AND IMPORTANCE OF PERFORMANCE INDICATORS

The issues associated with Organizational Performance Indicators (OPI), understood as a set of systems and tools that allow organizations to assess the extent to which their objectives are being met, are gaining increasing importance in supporting the management of organizations. Therefore, a set of new systems and tools have emerged incorporating more comprehensive perspectives, in a vision of the Organizational Development that combines the internal perspective, essential mechanism to improve the management of the organizations, with the external perspective, essential mechanism to improve the answers to the needs of the different stakeholders (Gião, Gomides, Picchioni, Corrêa, & Júnior, 2010). According to Neely, Adams and Kennerley (2002) Organizational Performance can be broken down into three concepts: (a) performance measurement, which consists of the process of quantifying the efficiency and effectiveness of past actions; (b) the performance measure, which is the parameter used to quantify the efficiency and / or effectiveness of these actions; and (c) the performance metric, which consists of the scope, content, and components of a broad-based performance measure. According to the authors, a performance measurement system allows informed policy decisions to be made, as it quantifies the efficiency and effectiveness of previous policies through the acquisition, compilation, classification, analysis and interpretation of data, being the Performance Indicators, the key factor for that system (Pinheiro, 2011).

According to the Organisation de Coopération et de Développement Economiques (OCDE) (2002), a performance indicator is factor or variable quantitative or qualitative that provides a simple and reliable means of measuring and reporting on changes linked to intervention or helping to appreciate the performance of a development actor. From an organizational point of view, indicators can be understood as criteria to quantify meaningfully, each objective and each key variable (Jordan, Neves, & Rodrigues, 2003), taking particular importance for the management of organizations, because they allow to guide them to the main long-term strategies, but also to the effectiveness of short-term decision-making (Walsh, 2006). In addition, indicators are important to eliminate subjectivity, reinforce commitment, identify ambition and encourage continuous improvement, and it's an important mechanism to inform the organization about the level of results achieved so that it can be compared with the pre-established goals (Caldeira, 2009). The set of OPI indicators should therefore reflect a balance between the short and long term objectives, of a financial and non-financial nature, of time and importance, and of the internal and external perspective (Kaplan & Norton, 1996), in a multidimensional approach where it is of particular importance (Bourne, Neely, Mills, & Platts, 2003):

- Not to be an end in itself, but as a mechanism of improvement that helps to prospect the future, quantifying the results achieved and to which should be added other tools of a more qualitative order.
- Be developed based on defined strategy, considering the crucial role they play in monitoring the strategic objectives.
- To be an integral part of the management and planning and control system, considering that its use has consequences on the organizational environment, influencing the behaviour of individuals and groups, sometimes being a guiding element of the activities.
- Be used to assess the impact of actions on stakeholder satisfaction, not only about customers, but also about employees and the local community.

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From an internal perspective, it is not possible to dissociate the objectives from the indicators. In a hierarchical and coherent logic that has the organization's mission at its top, indicators are the crucial elements in the measurement of the key variables that are to be controlled (Rascão, 2008) and the link between strategic intentions and the organizational process (Willson, Roehl-Anderson, & Bragg, 1998) (Figure 1). Being sure that an organizational leader should have as a starting point the mission of the organization, identifying the key priority variables, and only then reflect on the measures and metrics of these variables (Selmer, 1998), it is recommended that, where there is no track record, organizations first establish the indicators in order to identify trends and then establish the objectives (Pires, 2012).

In the external perspective, the alignment between the indicators and the expectations of the external stakeholders is of particular relevance, since the relationship between an organization and its environment has not only the dimension of the coincidence between its mission and the needs of the environment, but also the dimension of creating competitive advantages over other organizations that share that environment (Jabnoun, Khalifah, & Yusuf, 2003). An alignment that is dependent on a correct analysis of the stakeholders, both in terms of their importance and interest in the objectives of the organization (Golder & Gawler, 2005), both in terms of satisfaction patterns and levels of trust (Dervitsiotis, 2003). This perspective that can also be seen based on indicators that help to read the external context of the institution, resulting from opinions, investigations or statistics (Cave M., Hanney, Henkel, & Kogan, 1997), which provide better and more reliable information on the performance of a sector, a comparison between institutions, an organization's own performance assessment, an analysis of policy developments and a contribution to accountability (United Nations Educational, Scientific and Cultural Organization [UNESCO], 2001).

There are those who see performance measurement as an art or as a science, given that sometimes the main added value of performance indicators is psychological, leading to behaviours more than the measure itself and therefore, when poorly implemented, can cause more harm than good (Willson et al, 1998). The process that guides the choice of the OPI should therefore not be neglected, given that improving one indicator can lead to the degradation of another indicator, as is often the case with indicators of quality and cost, which often move in opposite directions (Atkinson & Epstein, 2000). The use of OPI in performance measurement system can be seen as a diagnostic methodology that should have

Figure 1. Internal perspective of Organizational Performance

Font: (Willson et al, 1998, p. 16)



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as main objective to contribute to the personal and professional development of each of the employees of an organization, seeking to improve the productivity and performance of the organization as a whole (Almeida, 2004), so must be closely related to the definition of the variables and goals, the competences of each person and the performance in each job (Steel & Scotter, 2003). Martins (1999), in a comparative study between different authors, identifies 11 characteristics that an OPI assessment model should have: (1) be in line with the strategy; (2) have diversified measures; (3) be oriented towards continuous improvement; (4) identify trends and progress; (5) be a facilitating mechanism for understanding cause-effect relationships; (6) be easily understood by all employees; (7) cover the entire organizational process (from supplier to customer); (8) make information available to the entire organization in real time; (9) be dynamic; (10) being able to influence people's attitudes; (11) be oriented to organizational logic and not to individual logic.

Although in a period of 30 years, between 1980 and 2010, about 30 models of organizational performance measurement system have emerged (Lisiecka & Czyż-Gwiazda, 2013), one of the most serious problems is that there is rarely consistency and integration in OPI assessments, either between each other, either between indicator and the defined strategy (Neely, 2002). More important than the definition of models is its effective implementation, use and revision (Franco-Santos, et al., 2007).

ORGANIZATIONAL PERFORMANCE IN HIGHER EDUCATION INSTITUTIONS

With Organizational Performance (OP) playing a central role in State reforms, in recent decades there has been an adaptation to the public sector of a large number of theories on this subject, not only with regard to the monitoring of the activity developed, but also with regard to decision-making processes and accountability to external entities (OCDE, 1997). Public sector OP management is also seen as a necessary activity promote good policy and good service delivery and is understood as a set of activities of governments and / or their agencies in the planning, implementation, reviewing, evaluating and reporting on the effectiveness of its policies, programs and projects (Mackie, 2008). According Kuhlmann (2010), also the OP in the public sector, especially in its measurement component, can be approached from an internal and external perspective.

From an internal perspective, the public sector is subject to the same constraints and has the same instruments and mechanisms as any other organization. The OP presenting a meaning very similar to the meaning of the private sector (except in the necessary adaptations), which can be seen as a cycle in which, after the performance objectives of the programs and activities have been set, the actual performance is measured and is the subject of a report (Conselho Coordenador de Avaliação de Serviços [CCAS], 2010). The creation of the Common Assessment Framework (CAF) by the European Institute of Public Administration in 2000 is an example of this similarity, since it is based on the European Foundations for Quality Management (EFQM) model of excellence and on the model of Speyer, from the German University of Administrative Sciences, as an instrument for self-assessment, conceptually similar to the principles of total quality management, which helps public organizations, with their specifics, to improve their performance (Direcção Geral da Administração e do Emprego Público [DGAEP], 2007). The main objective of introducing this model is facilitating in the Public Administration the principles of Total Quality Management (TQM), such as self-assessment, PDCA (Plan, Do, Control and Act) and continuous improvement, facilitating bench learning among public sector organizations..

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From an external perspective, the reality of the OP in the public sector differs from other sectors, especially in relation to the role of the State, considering the diverse set of organizations providing public services, be they governmental, private, profitable or voluntary, in a fragmentation of the supply and with problems of control and evaluation of the institutions (Araújo, 2007). A reality fuelled by the new approaches to the public sector that, according to the author, have caused changes at five levels:

1. In the activity of ministers, more focused on political issues than on administrative issues;
2. In the control of services, based on performance reports and not in the hierarchical structure;
3. In public servants, reducing their number, but increasing their quality and introducing mechanisms of flexible remuneration and incentives;
4. In the power of citizens, reinforced by their involvement and greater information on the performance of services;
5. In the coordination and relations between different organizations, based on negotiation processes and not on rules enforcement processes.

In conceptual terms, the Organizational Performance in the scope of Higher Education follows the same line, combining the internal perspective, with the internal structures of governance assuming the central role, and the external perspective, with special focus on the role of the State, Regulatory Entities and Society. However, in both perspectives there are two essential problematics about Public Higher Education: the autonomy and the mission.

The autonomy levels of HEIs have led to the debate on the necessary balance between internal and external responsibilities for the Organizational Performance of these institutions (Legislative Program Review and Investigations Committee, 2010). At the internal level, the complexity and requirements that these institutions are increasingly subject, with increased accountability, transparency, efficiency and growth expectations in the creation of partnerships with the private sector as a way to facilitate the transfer of technology and the commercialization of research (Bradshaw & Fredette, 2009), have put pressure on the main decision-makers in the strategic area (Vilkinas & Peters, 2014). Increased autonomy has also had an impact at the external level, accompanied by a strengthening of the external evaluation of the HEI and new financing mechanisms based on pre-established indicators performance (OCDE, 2003). As regards the mission, based essentially on knowledge, on its different aspects - education, training and research (Gago, 1993), the current context has given relevance to the pragmatic vision of HEI that is at the origin of the diversification of Higher Education (Pacheco, 2003). Diversification not only in terms of the functions of HEIs (Özdem, 2011), but also in terms of form, function and location, closer to where people live and work (Parry, 2013), which implies to look at the mission of HEIs beyond the macro perspective of the three missions of HEIs (teach, research and provide services) (O'Banion, 2010), adding a micro perspective, where the relationship with the outside, responsibility of the internal management bodies, began to assume a differentiating character between HEI and with impacts on its Organizational Performance (Hénard & Mitterle, 2010).

The identification of external stakeholders and their different expectations before the definition of strategic priorities of HEIs is also relevant, as teaching and research activities are being re-evaluated based on their contribution to improving economic and social well-being (Alves et al, 2010). There are gaps between the perspective that students, employers, policy-makers and institutions have on the HE, at the level of objectives, access and results (Pre-Doctoral Leadership Development Institute Class, 2013), the incorporation of different visions into the internal management practices of HEIs and the

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implementation of new management methodologies that incorporate globalization and technological advances have allowed to reinforce the global vision of the external ambient of these institutions, allowing the emergence of new approaches to their management and to the relationship and the construction of synergy with the different stakeholder (Al-Turki, Duffuaa, Ayar, & Demirel, 2008).

The specific characteristics of HEIs and the increasing complexity of the contexts where they operate, have fostered the need to use internal management practices that allow them to identify areas of change (Scott, 2003). Governance, leadership and management are essential requirements for HEI to develop, and it is necessary to define policies, structures, procedures and implement cultures that guarantee a transparent balance of the interests of different stakeholders, building, leading and managing the organization according to a vision of the future, directed to external needs (Deuren, 2013). Requirements that put permanent, variable and difficult management problems to all HEI managers, the most successful of which are those that are able to maintain an open and flexible posture, understanding the problems and making informed and supported decisions in new management methodologies (Bell, Warwick, & Galbraith, 2012). At the same time, there has been an increase in the use of process management methodologies, much derived from the importation of the quality movement into the HEIs, which has implications for the organization's vision, methodological planning, goal setting and measurement of their progress and improvement (Saraiva & Lacerda, 2005). In spite of the specific characteristics of Higher Education, as in the teaching / learning activity, the one that has the greatest impact on the activity of an HEI, which is characterized by being a process with very long cycles and with high levels of transversally, where the decision-making processes involve multiple actors, the adaptation and implementation of process management to HEIs is understood as a way to keep them competitive and to improve the satisfaction of their various clients (Reine, 2012). The pressures to increase the efficiency levels of HEIs have led to the renewal and reformulation of organizational structures and management practices, with process models being seen as a useful and powerful tool for better understanding, analysing and improving existing processes (Vukšić, Bach, & Tomičić-Pupek, 2014).

PERFORMANCE INDICATORS IN HIGHER EDUCATION INSTITUTIONS

The internal perspective of OP has been reinforced in the last years, considering the diversity of HEI and of their stakeholders (students, teachers, parents, employers, public officials, local leaders, society in general, government, syndicates, among others), which vary in function on of the characteristics of each HEI (Evenbeck & Kahn, 2001) and the diversity of their interests, some more concerned with financial issues and service quality levels, others with student preparation for the job market and others with the assurance that the HEI is carrying out the their mission and to achieve results in line with their public utility purposes (Bhatia, 2009).

However, it is in the OP external perspective that references about OPI are more easily found. UNESCO has played a relevant role in the external perspective on the measurement of HEIs. Following the World Conference on Higher Education, organized by UNESCO itself, with a view to highlighting the need for renewal and reorientation of higher education (both at the systems level and institutions level), in the study on accountability and the international cooperation in the renewal of the HE, were identified ways that States are using to measure the progress of HE and enumerated a set of indicators that can be used and others available in need of development (UNESCO, 2001). Based on the different national and international experiences of quantitative information, in 2003 it published the study on possible strategic

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indicators for the monitoring of the development of higher education systems in the 21st century, both by UNESCO itself and by States and their HEIs (UNESCO, 2003), presenting a preliminary framework of indicators based on four dimensions - (1) political issues, (2) resources, (3) participation, access and retention levels, and (4) economic and social outcomes. More recently in 2011 it has issued a practical guide to the development of a system of indicators for the HE which includes a set of general guidelines and tools for the development and presentation of indicators, the framework necessary for the creation of such systems and the objectives and the methodology for creating such systems (UNESCO, 2011).

The OCDE has also been increasingly concerned with the issue of performance measurement, not only in HE but in the all public sector, with the publication in 1997 of the comparative study of public sector performance management practices in nine countries (OCDE, 1997). In the field of education, it has been publishing since 1998 the annual report “Education at a Glance”, which includes analyses of the different levels of education, including analyses about HE like the level of education of adults, the number of students that, per country, is likely to finish ES, the level of influence that parents’ education has on the participation of children in HE and the implications of schooling for participation in the labour market (OCDE, 2015). Since 2013, The State of Higher Education report, integrated into the OECD Higher Education Programme (IMHE), which carries out the monitoring and analysis of HE policies, data collection and the sharing of new ideas, as well as the reflection on past experiences, in a set of comparative data that aims to stimulate thought, reflection and the signalling of trends and potential sources of tension. (OCDE, 2014).

Currently rankings play a relevant role in the measurement the organizational performance of HEIs and are seen as one of the consequences of increased competition between HEIs and between states to attract better students and better teachers, and which can function as an important source of indicators for national systems, as well as a comparison mechanism that helps to explain aspects of regional and international HE systems (UNESCO, 2011). Of the set of rankings stand out:

- Academic Ranking of World University (ARWU, 2015) - Under the responsibility of a group of researchers from the University of Shanghai, study the world-class HEI since 2003, being one of the oldest rankings. It has the advantage of using a solid, stable and transparent methodology that focuses on HEIs that have Nobel Prizes, medallists, highly cited researchers or articles published in the journals Nature or Science, or HEI with a significant number of articles indexed by the Science Citation Index Expanded (SCIE) or Science Citation Index Social (SSCI). It bases the analysis on four criteria: quality of education, quality of the faculty, research results and teachers’ performance.
- QS Top University (QS, 2015) - Based on research performed since 1990, it was first published in 2004. It has been evolving in its analyses and has since created QS Stars which provides a broader framework for measuring the characteristics of institutions based on eleven criteria (to which 50 indicators are associated). They are: research, teaching, employability, internationalization, support services, distance learning, social responsibility, innovation, art and culture, inclusion and specialty criteria.
- THE, World University Ranking, (WUR, 2015) - Responsibility for the Times Higher Education publication has existed since 2004, being the only HEI performance listing that focuses on the essential missions of HEIs, teaching, research and knowledge transfer, to which it adds the international perspective. Based, since 2011, in 5 dimensions (to which 13 indicators are associated). They are: teaching, research, citations, international perspective and industry revenues.

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- Ranking of National Higher Education System U21 (U21, 2015) - Operating since 2012, it has different goals from the previous ones. It seeks to measure the performance not of the individual institutions, but of the higher education systems, comparing the countries based on four areas (to which 22 indicators are associated). These are: resources allocated to Higher Education (in terms of financial resources related to teaching and research activities), the environment (in terms of the type and amount of regulation), connectivity (in terms of links with society and the internationalization of education and research) and output (in terms of the qualifications of graduates and the contribution to knowledge).

From the comparative analysis of studies, proposals and rankings (Lourenço, 2017) it is possible to identify more than 150 OPI associated with HE, of which 44 appear in more than one. Of these 44, grouped based on the traditional missions of HEIs - teaching, research and knowledge transfer - it is found that research and teaching are those with the highest number of indicators, 18 and 15 respectively, with a relatively small number of indicators related to knowledge transfer (2) and a set of indicators (9) that are not directly related to any of the three missions (Table 1)

One of the most common requirements for goals and performance indicators is to be SMART (Comissão Europeia, 2001; Harris & Enfield, 2003) namely: (1) **S**pecific: they should not be general or vague, but practical and concrete; (2) **M**easurable: must answer the questions - how much? when? to what extent?; (3) **A**chievable: must take into account the human and material resources required to achieve them; (4) **R**ealistic: must be achievable; and (5) **T**ime-bound: must take into account the deadlines to achieve them. However, in addition to addressing these issues, the indicators present a set of characteristics that are essential to be considered when choosing which ones to use to measure organizational performance. Of the set of characteristics of the OPI, stand out the following:

- **Relevant:** Should propose to measure, as nearly as possible, the intentions implicit in the objectives (Caldeira, 2009), and must be “characteristic and representative of what is being measured” (Selmer, 1998, p. 68).
- **Useful:** Must offer a benefit of their use (Silva, 2014), helping to answer the following questions: “(1) How are we doing? (2) Should we act or not? (3) What actions can we take? (4) How can we do better?” (Willson et al, 1998, p. 12).
- **Credible:** Must be “fair, accurate, reliable and reproducible” (Selmer, 1998, p. 69), accuracy, reliability and comparability. (Martin & Sauvageot, 2011).
- **Economic:** It should be relatively easy to obtain, maintain and use (Silva, 2014), so that the outcome calculation should not be too time-consuming or expensive (Caldeira, 2009).
- **Simple:** They must be “simple, logical and repeatable (...), defined in a comprehensible way in operational terms” (Willson et al, 1998, p. 17), synthesizing information without distorting it (Martin & Sauvageot, 2011).

The frequency of indicators is also of particular importance, based on the need for trend analysis (Willson et al, 1998) and associated with the duration of the decision cycle (Selmer, 1998). Equally important is the consistency between indicators, allowing for a comprehensive, structured and multi-faceted analysis, linking indicators (Martin & Sauvageot, 2011), which allows for unequivocal readings and complementarity of qualitative and quantitative analyses, since the latter do not always take into account the nature of the activities or processes they intend to monitor (Pires, 2012)

Importance of Entrepreneurship in the Organizational Performance of Higher Education Institutions*Table 1. Organizational Performance Indicator by mission of Higher Educations Institutions**

Teaching	
1	Rate of students who entered 1st option
2	Ratio enrolled 1st year 1st time/Number of places
3	Average rating of new students
4	Number of training offers available
5	Market share of students
6	Number of international students
7	Average rating of graduates
8	Non-graduation rate
9	Average number of enrolments to complete the course
10	Value added to students by the institution
11	Rate of graduates who continued their training
12	Employability rate of graduates
13	Expenditures per student
14	Ratio Personal/Student
15	Ratio Students/Doctorate teachers ETI ¹
Research	
1	Number of articles published
2	Number of citations per College or School
3	Ratio Patent/Doctorate teachers ETI
4	Number of international research co-authorships
5	Ratio of Expenditure on research/Doctorate
6	Number of researchers
7	Number of research students
8	Memberships, prizes and medals of Scientific Societies

*continued in next column**Table 1. Continued*

9	Research Reputation
10	Ratio Students/Doctorate teachers ETI
11	Ratio Teaching/Teaching staff
12	Faculty fee in research units funded by FCT ²
13	Percentage of teachers with doctorates obtained abroad
14	Former students with Nobel or medals
15	Teachers with Nobel or medals
16	Financing obtained for research
17	Ratio of Expenditure on research/Doctorate teachers ETI
18	Ratio Doctorate teachers/Teachers
Knowledge Transfer	
1	Ratio financing by industry/Teachers ETI
2	Employers' evaluation
Others	
1	Total Revenues
2	Private Budget Revenue
3	Positioning in international reputation rankings
4	Ratio international teachers / national teachers
5	Results of external evaluations
6	Quality of information
7	Parents' average level of schooling
8	Peer evaluation
9	Institution Reputation

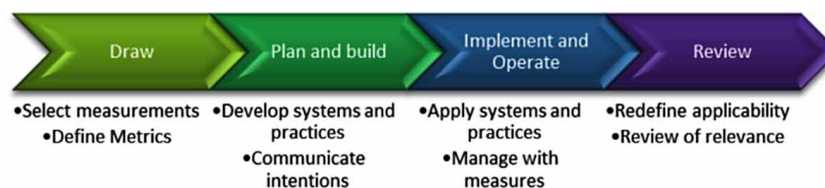
* Note: The assignment of the Organizational Performance Indicators to the missions of the HEIs (Teaching, Research and Knowledge Transfer) was done considering the direct and objective relationship between each indicator and each mission. When this relationship could not be established, the indicator was included in the Other Indicators group.

The credibility of information is a critical success factor, vital for the monitoring process to not lose relevance within the organization (Caldeira, 2009), so if the sources of information do not allow such credibility, it will be preferable for organizations to choose to look for substitution information that comes close to the intended information (Jordan et al, 2003). Neely et al (2002) have proposed four processes for choosing and constructing a system of performance indicators (Figure 2): (1) designing, related to the initial need to understand what should be measured and the definition of how it should be measured; (2) planning and building, including planning of ways of accessing the required data, construction of the indicator system, configuration of data processing and distribution, and overcoming political and cultural concerns regarding of; (3) implement and operationalize, related to the management of the indicators, using them as a mechanism to understand the reality of the organization; and (4) review, associated with procedures that ensure that the system is constantly reviewed and redefined, ensuring that performance measures remain relevant to the needs of the organization.

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Figure 2. Process of Building a System of Performance Indicators

Font: adapt from (Neely et al, 2002, p. 33)



ENTREPRENEURSHIP AS A VARIABLE OF ORGANIZATIONAL PERFORMANCE IN HIGHER EDUCATION INSTITUTIONS

Since 70's there has been an intense debate on the necessary changes in the relationship between HEIs and Society, and it is possible to find institutional declarations at European level that expressly refer to the social dimension of the HE and its institutions, such as the Graz Declaration/2003 and the Bergen Declaration/2005) (Jorge, Hernández, & Cejas, 2012). For the European Commission (2004) knowledge transfer is directly associated with research, and can take four forms:

- Open diffusion of knowledge, where the knowledge of HEIs is seen as a public good, which should be available in a free and accessible way.
- Commercial transfer of knowledge, where the knowledge of HEIs is seen as a tradable asset that links HEIs to the productive industrial context.
- Transfer by organized grouping of knowledge, where the knowledge of HEIs is transferred to companies through two-way cooperation mechanisms that allow the exchange of skills and competences.
- Transfer of knowledge through spill-overs, where knowledge of HEIs is transferred through the creation of autonomous organizations, with essential factors being the knowledge incorporated in human resources and the research produced in HEIs.

Trends such as the growth of the global number of students in higher education, a greater number of graduates, a greater dispersion of students by different formations, increased mobility and distance learning, among others, have boosted students' training as been more important than obtaining a diploma, as well as for HEIs, employability and skills development have become recurrent themes (Lourtie, 2013). A process of social and economic devaluation of academic qualifications and valorisation of aspects that bring added value to the graduates (prestige of the institution, acquired competences, existing partnerships, etc.), which has altered the processes of student choice and requiring from HEIs new approaches, such as the management of students, their preparation for the labour market, the development of institutional brands and the evaluation of the OP (Mainardes, Alves, & Raposo, 2010). Entrepreneurship is one of these variables, and the questions is to know to what extent it will undertake it be an important variable of the organizational performance of higher education institutions, considering that besides being a mechanism of knowledge transfer, it is also a mechanism of creation of value for the society.

Most studies in this area find a positive effect between entrepreneurship education and the intention of future graduates to have an entrepreneurial activity (Walter & Block, 2016). However, according to the authors, it is also possible to find studies that identify a negative effect that discourages students

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from entrepreneurship, suggesting that the conditions of the environment can play a relevant role in the entrepreneurship of graduates. According to the same authors, the characteristics of the countries may influence entrepreneurship, especially about entrepreneurship-friendly regulation, the availability of financial capital, the availability of educational capital, control of corruption and the public image of entrepreneurs. This may mean that the very environment created by HEIs and the support given in the field of entrepreneurship can have a significant impact on the greater or lesser appetite for the creation of the entrepreneurial spirit, both in graduates and in society in general (Ribeiro, Oliveira, & Araujo, 2014). According to the same authors, although HEIs are increasingly concerned about connections abroad, they are still far from being able to respond to the needs of society, necessitating a greater approximation to the business fabric and to the daily life of companies.

According to the Kauffman Foundation, an American foundation dedicated to entrepreneurship, refers that entrepreneurship “is a dominant force in contemporary America. It generates ongoing innovation and improvement of our goods, services, and institutions. It makes them more efficient, affordable, and, thus, effective. Entrepreneurship enhances the quality of our collective and individual lives. It changes the way we work, the way we communicate, the way we live. Innovation and improvement depend on intelligibility. In the final analysis, we cannot devise or enhance the incomprehensible.” (Kauffman Foundation, 2008). In this sense, states that he must be in higher education for four main reasons:

- It is critical to understanding and succeeding in the contemporary global economy.
- It is already an expanding area in the learning processes of American higher education.
- It is becoming a basic part of what universities themselves do.
- It meets many of the objectives of quality higher education.

In Europe there has been a strengthening of the importance of entrepreneurship and its relation to higher education. The report *Survey of Entrepreneurship in Higher Education in Europe* (NIRAS Consultants, FORA, ECON Pöyry, 2008), at the request of the European Commission, which focuses on entrepreneurship education as a way for the European Union to exploit its entrepreneurial potential more comprehensively, not only with a view to transforming its economy, but also to make it more competitive. However, the results suggest a high level of concern, considering that it is estimated that more than half of Europe’s higher education students do not have access to entrepreneurship education, that is, about 11 million students do not have the opportunity to participate in extracurricular activities that can stimulate their entrepreneurial spirit. The same report identifies the strategic dimension of HEIs, in particular the recognition by senior management of HEIs of the importance of teaching entrepreneurship, both in terms of value to the institution and to society as a whole, as crucial to develop the education superior for entrepreneurship. This assumption stems from the fact that it is in this dimension that the greatest differences are found between the leading institutions and the most backward institutions in this respect. According to the same report, the strategic dimension should be developed in three sub-dimensions: entrepreneurial policies, entrepreneurial goals and strategic insertion.

In Portugal, the bet on entrepreneurship has had important developments in the last years, in particular after the creation in 2009 of a program of financial support for the creation of new companies, derived from the discontinuity of the self-employment promotion program, very associated with the fight against unemployment (Agência Piaget para o Desenvolvimento, 2014). The National Strategy for Entrepreneur-

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ship, launched in 2016 by the Ministry of Economy, allowed that entrepreneurship gain a new strong. According to the report published in 2018, the program allowed a significant increase in startups and incubators, a network that has 135 certified entities that directly support more than 3,000 startups, in addition to a significant number of newly created technology companies that have given international visibility, allowing a greater capacity to attract new investor (Ministério da Economia, 2018)

According to the study developed in Portuguese Public Higher Education Institutions (Lourenço, 2017), it was verified that they have a high concern with the Society and with the external environment, confirming the idea that the Society has a decisive role in the future of HEIs. This concern manifests itself in the fact that the External Links appear as one of the most relevant organizational performance variables and in the fact that there is widespread acceptance of the participation of external members in the General Council, the highest body of the institutions, with responsibilities at the level of strategic decision and election of the Rector/President. However, the same study reveals that the levels of overall consistency in the approach to organizational performance are not high. More than 50% of the times an inquired identifies an organizational performance variable does not identify an indicator to measure it. This problem is bigger in the External Links and in the entrepreneurship for three reasons:

- First, the restricted number of performance indicators identifiable in the bibliographic review that have some relationship with this variable (some of them far too diffuse) namely: 1) Ratio financing by industry/teachers ETI; 2) Employers' assessment; 3) Ratio patents/teacher doctorate ETI; 4) Revenue from private budget; 5) Reputation of the institution; 6) Results of external evaluations
- Second, even considering the small number of initiators related with this variable, all of them, except for the ratio of patents, do not have a direct relation with the entrepreneurial activity, neither with regard to the internal activity in this field, nor the impacts of this activity in the society.
- Third, only two of these indicators were identified by the respondents in global terms as being very relevant for de organizational performance of HEI: the results of external evaluations and the reputation of the institution. Two indicators that are already debatable based on the concept of indicator.

In order for entrepreneurship to be seen as a variable of organizational performance of HEIs, being even seen as the fourth mission, responding to the basic idea that entrepreneurship must be born within HEIs, it is essential that be seen as a clear variable in the institutions' strategy, with direct impacts on their performance, and requiring the implementation of internal and external mechanisms to monitor their activities. It is also essential that there be external recognition that this is a relevant activity for the development of HEIs, implying not only more effective public policies for Higher Education, but also mechanisms for social and scientific valorisation of this activity. It should be noted, for example, that the rankings described above, have a very significant importance in the research results, and only one, the Ranking of National Higher Education System, refers to the connection with society (which is not representative of entrepreneurial activity), and another, QS Top University, which refers to innovation (which also is not representative of entrepreneurial activity). In none of them do we find analytical variables such as the impact on the generation of value for society or the impact in terms of the economic and social development of societies through the creation of companies.

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MONITORING THE ENTREPRENEURIAL ACTIVITY OF HIGHER EDUCATION INSTITUTIONS

For entrepreneurship assume a relevant role in HEI activities, particularly in Portugal, considering the points description on this chapter, it is recommended development four realities: a) the strategic importance of creating value for society; b) creation of incentives for entrepreneurial education; c) monitoring of graduates; and d) structured and monitored data of the entrepreneurial activity.

Strategic importance emerges as one of the most crucial conditions, as already discussed in this chapter. It can turn out on several levels. It starts by including the creation of value for society as one of the strategic objectives of HEI, allowing to value not only the entire relationship with the environment, but also all activities that directly or indirectly create value for society, where, of course, entrepreneurial activity can play a very significant role. In recent years, had arisen studies that intend to accurately measure the economic impact of HEIs in the areas where they are implemented. Although these are only economic studies, leaving out a set of other variables, such as social, environmental and even cultural variables, these studies have shown that the fact that HEIs are implemented in certain zones has an impact, both in job creation and in the per capita GDP growth of these regions. Of course, from these studies, it is not possible to draw conclusions about the importance of entrepreneurship in these impacts, and they cannot be expected to be very significant, given the significant number of projects that are unsuccessful. This is an analysis that must be done in the long term. It is also important that the top strategic perspective be translated into the individual perspective of the different actors of the activity of an HEI, in particular the teachers, because only then will it be possible for the strategic expectations and the respective objectives to be translated into real and empowering activity of development.

In entrepreneurial education, it is not enough, but important, that the concepts associated with entrepreneurship be passed during the basic training of students (Carvalho & Costa, 2015). According to the authors, entrepreneurship education has gained increasing importance in educational programs in several countries, emphasizing the importance of reflection on pedagogical methods and the dimensions of this same education. This will not be possible if there is neither a set of curricular units that stimulate the entrepreneurial activity, or a project-based learning perspective, that allows a trainee to develop his idea throughout his training. One of the hypotheses will be for the students to be able to carry out academic internships from the very beginning of their training, so that they have contact with the business reality as soon as possible. The entrepreneurship education it is closely associated with innovation and the possibility of allowing students to develop innovative ideas, whether associated with academic projects or associated with research projects. It is particularly relevant here the integration of students from the beginning of their training in research activities, enhancing their research activity in a logic of invocation.

About the monitoring of graduates, it is linked to the fact that, as mentioned earlier, the social impact of entrepreneurship cannot be measured in the short term. First, because the number of successful projects is not very significant, second, because, even if they succeed, in the first years they may not have an effective return, it is necessary to wait for their sustainable implementation for this return to be effective, and third, because a graduate may not start an entrepreneurial activity at the beginning of his career, but may do so a few years later, after having a more concrete knowledge of the characteristics of the market. This implies that HEIs must have the capacity to accompany their graduates and can understand their professional career. In this aspect the important thing is to analyse the level of entrepreneurship and the creation of companies of the HEI graduates as well as the relevance of these companies in society.

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Finally, for all of this to be possible, and the entrepreneurship activity as an important role in organizational performance of HEIs, there is a need for structured and analysable information, not only to understand the phenomenon in each HEI, but also to understand the levels of evolution and to allow the definition of objectives and policies for the purpose to develop the entrepreneurial activity within HEIs (Vesper & Gartner, 1997). For that is essential to define and select a set of indicators that allow monitor this activity (Nappi & Kelly, 2018). The following is a set of indicators, analysed based on the characteristics of the indicators described in this chapter, with the purpose of contributing to the discussion on the best indicators to measure the entrepreneurial activity of an HEI.

1. Entrepreneurship Education Enhancement Indicators

1.1. Number of Curricular Units Associated With Entrepreneurship

- **Meaning:** It represents the initial level of strategic investment of HEIs in the acquisition of skills in entrepreneurship by students.
- **Positive Characteristics:** Credible, economical and simple

It is relatively easy to collect and understand, since the name of the curricular unit is formally defined and identifies the relationship with the area of entrepreneurship.

- **Negative Characteristics:** Not very useful and not relevant

It is only associated with the input of entrepreneurship, the acquisition of skills, not measuring the main output of entrepreneurship, the creation of direct added value for society. In addition to not allowing conclusions to be drawn about the actual implementation of entrepreneurship projects, it is based on a closed perspective of entrepreneurship, without interconnection between different areas of knowledge.

1.2. Number of Pedagogical Projects Associated With Entrepreneurship

- **Meaning:** It represents an improvement over the previous indicator, increasing the level of strategic betting the HEIs in the acquisition of skills in this area by the students
- **Positive Characteristics:** Useful and pertinent

It translates a broader perspective on entrepreneurship and how competences are acquired in this area, not only associated with curricular units, but introducing the idea of interdisciplinarity, supported in pedagogical projects such as Project Based Learning or activities parallel to the academic curriculum. To some extent already has associated some level of potential realization of ideas.

- **Negative Characteristics:** Slightly credible, expensive and complex

In addition to being not formally defined, making it difficult to identify the pedagogical project associated to entrepreneurship, it is dependent on the classification of the pedagogical project typology as being an enabler of entrepreneurship and information provided by the HEI itself, and can be difficult to understand, especially when compare HEI.

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1.3. Number of Trainings Associated With Entrepreneurship

- **Meaning:** Represents the highest level of strategic investment of HEI in the acquisition of skills in this area by students.
- **Positive Features:** Useful, credible, economical and simple

It allows to understand the specific strategic bet in the education for the entrepreneurship in a certain HEI, being easy to gather information because it is formally defined and in which the name of the formation usually identifies the relation with the area of the entrepreneurship.

- **Negative Characteristics:** Slightly relevant

It continues to be essentially associated with the input of entrepreneurship, the acquisition of skills, still without much relevance in creating value for society. In addition, entrepreneurship and business creation do not always result from specific training in the area, but from a set of factors that foster the entrepreneurial attitude.

1.4. Number of Specific Incentive Programs and Support For Entrepreneurship

- **Meaning:** It represents a broader strategic approach to entrepreneurship education by HEIs, not only based on the formal component of skills acquisition.
- **Positive Characteristics:** Useful, economical, simple and pertinent

It allows us to know to what extent the HEI enhances the emerge of ideas that can create value for society. It is relatively easy to collect information, as these programs are usually formally defined, and the name of the program usually identifies the relationship with the area of entrepreneurship.

- **Negative Characteristics:** Slightly credible

It is totally dependent on information from HEIs because the fact that the programs exist does not mean that they work or that they have a significant number of projects, even if the projects have a significant impact both in terms of innovation and in terms of social impacts.

1.5. Number of Students Involved in Training and Incentive Programs for Entrepreneurship

- **Meaning:** Represents the capacity of HEI to attract students to entrepreneurial education.
- **Positive Characteristics:** Useful, economical and simple

It allows to understand the involvement and interest of the students in the formations and incentive projects associated to entrepreneurship, without which the effective process of creation of companies can become more complex. Is relatively easy to collect because is an official datum.

- **Negative Characteristics:** Slightly credible and slightly relevant

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It is totally dependent on information from HEIs, and the fact that students participate in training actions associated with entrepreneurship may not have any meaning, especially when these formations are part of the curriculum, that is, they are compulsory.

1.6. Number of Students Involved in Research Projects

- Meaning: Represents the involvement of students in research activities.
- Positive Characteristics: Useful, simple and relevant

It allows to understand the involved of the students in research activities during the training process, an activity that is conducive to the generation of entrepreneurial ideas after the end of this training.t.

- Negative Characteristics: Slightly credible and expensive

Is a non-formal information, being dependent on the information of the HEI itself, and a structure is needed to validate this information.

2. Indicators for the Results of Entrepreneurial Education

2.1. Number of Candidate Projects for Entrepreneurship Support Programs

- Meaning: It represents the entrepreneurial spirit and the ability to generate innovative ideas on the part of the HEI students.
- Positive Characteristics: Useful, simple and relevant

It allows to know the dynamics of ideas creation within an HEI, and the accompaniment of its evolution is a mirror of the results of entrepreneurial education. Being associated with indicator 1.4, it is relatively easy to understand and collect information.

- Negative Characteristics: Slightly credible and expensive

It is totally dependent on information provided by the HEI, and it is not always possible to identify projects that apply for programs outside the HEI, requiring a good structure to collect information. In addition, the number of candidates does not by itself mean that the projects are genuinely innovative or have a relevant social impact.

2.2. Number of Startups Incubated and Integrated Into Entrepreneurship Support Programs

- Meaning: It represents an improvement over the previous indicator, representing the capacity of the entrepreneurship of HE students to generate ideas with potential for growth.
- Positive Characteristics: Useful, simple and relevant

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It allows knowledge about the value of the ideas created within the HEI, since the processes of incubation and support to entrepreneurship are always subject to a process of prior evaluation and selection.

- Negative Characteristics: Slightly credible and expensive

The collection of information is dependent on the HEI itself, and the number of incubated startups does not always represent the number of startups in operation, either because they have never actually worked or because they have already worked but are no longer incubated. In addition, as in the previous indicator, a good information-gathering framework will be required to gain access to information from program-supported startups not integrated in the HEI.

2.3. Number of Awards in Entrepreneurship Contests

- Meaning: It represents the certification of the capacity of the innovative spirit of the IES students to generate innovative ideas and with social impact.
- Positive Characteristics: Useful, credible, simple and relevant

It allows to assess the recognition that is given to innovative ideas and with social impact, being a safe source and associated with the process of evaluation and selection based on specific criteria associated with the growth potential.

- Negative Characteristics: Expensive

If the competitions are not within the HEI itself, the information is dependent on external actors, requiring a network to collect information on all the competitions and on the origin of the candidates, in order to identify those who are from the HEI.

2.4. Number Created Startups

- Meaning: It represents the true entrepreneurship capacity of HEIs.
- Positive Characteristics: Useful, simple and relevant

It is centred on the most important output of entrepreneurship, the creation of value for society, and for this reason it allows us to know the real value of HEIs for the creation of companies and the generation of value for society.

- Negative Characteristics: Slightly credible and expensive

In addition to requiring a very advanced information collection structure, which included the ongoing monitoring of former students, on the one hand, the information collected does not always represent the totality of newly created companies (usually err underneath) and, on the other hand, not always the number of companies means a high value for society, nor is it necessarily related to the area of formation of HEI.

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3. Indicators for the Results of Entrepreneurial Activity

3.1. Ratio Number of Patents/Startup Created

- Meaning: It represents the capacity of innovation of HEIs.
- Positive Characteristics: Useful, simple, credible and relevant

Although patents are essentially associated with invocation and not directly to entrepreneurship, the combination with established startups allows to know the level of innovation certified by HEIs with real potential to bring added value to society in the long term. In this case, the patent process depends on an official body, so the information is credible and relatively easy to obtain.

- Negative Characteristics: Expensive

Given that it depends on the number of startups created, it presents the same problem of collecting information associated with indicator 2.4.

3.2. Ratio Jobs Created/Startup Created

- Meaning: Represents the social value of the entrepreneurial activities of HEIs
- Positive Characteristics: Useful, simple and relevant

It allows to know the dimension of the companies created through the entrepreneurial activity and, as such, the social impact that the entrepreneurial activity of the HEI has in society. The combination with the number of stargazes created allows to know the average size of these companies, introducing interesting levels of comparability on the typology of companies that result from entrepreneurship activities.

- Negative Characteristics: Expensive and Unreliable

Given that it depends on the number of startups created, it presents my problem of collecting information associated with indicator 2.4. In this case, the information still suffers from another problem since information on the number of jobs may not be public and, even if it is, it may not be sufficiently updated.

3.3. Ratio Investment/Startup Created

- Meaning: Represents the economic value of HEI entrepreneurship activities
- Positive Characteristics: Useful, simple and relevant

It allows to know the economic impact of the companies created through the entrepreneurial activity, and the combination with the number of startups created, allows to know the average impact on the economy of these companies, also introducing interesting levels of comparability.

- Negative Characteristics: Expensive and Unreliable

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Given that it also depends on the number of startups created, it presents the same problem of collecting information associated with indicator 2.4. Information, like the previous indicator, still suffers from another problem since information about the level of investment may not be public.

3.4. Mortality Ratio of Projects / Startup Created

- **Meaning:** It represents the effective impact of the entrepreneurial activity of HEIs in society
- **Positive Characteristics:** Useful, simple and relevant

It allows us to know the effective level of creation of value for society in the long term, which combined with the number of startups created allows us to know the number of companies that can be kept in the market beyond the initial idea.

- **Negative Characteristics:** Expensive and Unreliable

Given that it also depends on the number of startups created, it presents the same problem of collecting information associated with indicator 2.4. Information, like the previous indicators, still suffers from another problem since information about the actual activity of the company is not usually public.

Many other indicators could be identified. In addition, the information of each of the indicators is always very rich, but simultaneously closed, and it is only possible to have an effective perspective of the entrepreneurial activity of an HEI and its real importance for its performance if there is an integration of indicators, which allow a global reading, and that can create causal relationship between education for entrepreneurship, the results of that education and the results of the entrepreneurial activity as a whole. As it was already discussed in this chapter, the most important is the choice of indicators in the creation of the measurement performance system in this area. There are several dangers associated with errors in the development of performance indicator systems, including the fact that the measures are designed to satisfy customers, employees, shareholders and other stakeholders, but are not oriented towards the key variables that lead organizations to achieve this satisfaction, and the fact that they do not take into account the need for data that allows organizational learning (Pires, 2012). Some of the major problems in assessing organizational performance are more related to obtaining relevant data than to using a model or system (Clarkson, 1995). The development of clear procedures for the creation of a system of performance indicators, metrics and information sources has proved to be central to OP measurement processes (Russ-Eft & Preskill, 2001), highlighting three aspects:

- **Agreement between stakeholders:** Since the OPI represent the formulation of a management contract between the different hierarchical levels, its definition must start from an agreement between the different actors (Jordan et al, 2003).
- **Definition of the number of indicators to monitor:** While on the one hand it is accepted by the scientific community that there is a limited capacity for information processing by users and it should be avoided to include too many indicators (Sousa & Rodrigues, 2002), on the other hand, there is a need to extend the field of analysis to enrich it by monitoring several categories of indicators, avoiding placing too much emphasis on a single or very few indicators (Willson et al, 1998).

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- **Credibility of information sources:** The credibility of information is a critical success factor, vital for the monitoring process to not lose relevance within the organization (Caldeira, 2009), so if the sources of information do not allow such credibility, it will be preferable for organizations to choose to look for substitution information that comes close to the intended information (Jordan et al, 2003).

The essential point will be, from a perspective of internal organizational performance, that HEIs identify the indicators associated to entrepreneurship that best respond not only to their strategic definition, but essentially that are adequate to the state of evolution of the entrepreneurial activity. It will also be essential that, from an external perspective of organizational performance, there are cross-cutting indicators common to all HEIs, whether in terms of rankings, whether in terms of definition of funding, or in terms of appraisal for support programs, that function as reference so that each HEI can be positioned relative to others HEIs.

LIMITATIONS OF THE STUDY

The present study presents a set of limitations, namely the failure to carry out an exhaustive survey in terms of bibliographic review of the indicators associated with the entrepreneurial activity, as well as the fact that there has been no international comparative analysis of those that may be effectively to be used in the measurement of the HEI organizational performance. The main limitation derives from the fact that it is an exploratory study and, as such, does not present validation for the analysed indicators, and it is not possible to conclude from the feasibility of the use of each of them in the measurement of such performance.

FUTURE RESEARCH DIRECTIONS

Considering the limitations presented, the future research activity goes through three phases. To elaborate an exhaustive bibliographical study on potential indicators associated to the measurement of the entrepreneurial activity, not only from the role of HEI, but also from other entities involved in this process. To carry out an exhaustive study on the number of indicators that are effectively being used, both internally and externally, in the measurement of the organizational performance of the HEIs that have a direct relation with the entrepreneurial activity. To conduct an exploratory study, based on case studies, to assess the feasibility of using the indicators identified in this study or others that emerge from previous studies, in the measurement of the organizational performance of HEIs in this area. Finally, it should be noted that other studies, particularly those that can measure the social and economic impact of HEIs entrepreneurship activities on society, cannot be ruled out.

CONCLUSION

The creation of value for society is currently one of the essential requisites for valorise the activity of higher education institutions, it is evident that, despite the concern with external links, these concerns

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have not been translated into performance measures that enable understanding the effective contribution of each institution to entrepreneurship. The entrepreneurial activity of HEIs, whether in education or in terms of creating conditions for the creation of companies, is increasingly a variable that has an important impact on value creation. This means that it will be necessary for HEI to incorporate into their strategies specific measures for the internal development of this activity, with the risk to become less attractive to potential students, given that it is becoming less important for them to training, in its narrow sense, acquired in the HEI, becoming increasingly important other variables, where of course the innovative spirit and the entrepreneurship potential of these HEIs are relevant.

It is not enough, however, that the HEIs incorporate strategic measures to support entrepreneurship. It will be necessary to have political, a framework that fosters these same initiatives, to create a right of the HEIs to bet on this area in a continuous and structured way. In recent years, this has been a reality, and it is increasingly common to find national and international policies to stimulate entrepreneurship.

Finally, such a bet only becomes effective about the organizational performance of HEI, if it is possible to measure this activity, not only as a way of understanding evolution, but also as a way of positioning the different HEIs in relation to entrepreneurial activity. What is verified is some shortage of indicators in this area, used both by the HEIs and by the external entities perform analysis of the organizational performance of HEIs.

The present study presented a set of indicators that enhance this measurement, presenting its main characteristics. It cannot be said that there is a perfect indicator to measure the entrepreneurial activities of HEIs. What exists is a combination of indicators, which measure different perspectives, so give different information. The important thing is that, at an early stage, each HEI defines their system, including the organizational performance indicators that most respond to their strategies in this area, in an internal alignment of the performance, taking into account the current point and future prospects of its development in this area.

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ENDNOTES

- ¹ ETI - Equivalent to integral time.
- ² FCT - Foundation for Science and Technology.