

ENTREPRENEURSHIP EDUCATION: A SCORECARD APPROACH TO ASSESS REGIONAL IMPACTS OF UNIVERSITY PROGRAMS

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RESUMO

As Universidades desempenham um papel importante no desenvolvimento das regiões, decorrentes da sua tripla missão (Brennan et al., 2004): Ensino, Investigação e “Envolvimento da Comunidade” (B-HERT, 2006). As Instituições de Ensino Superior estão equipadas com recursos humanos altamente qualificados e desempenham um papel fundamental na criação de conhecimento, bem como no desenvolvimento e na evolução das sociedades (European Union, 2011). Assim, é crucial uma efetiva incorporação destes conhecimentos no desenvolvimento de produtos e inovações (European Union, 2011).

Ao longo das últimas décadas, as atividades de transferência de conhecimento foram alvo de especial atenção, nomeadamente pelo seu potencial para expandir o impacto das Universidades (Sánchez-Barrioluengo, 2014), através do desenvolvimento de relações com a comunidade. Assim, os países europeus estabeleceram políticas promotoras da transferência de conhecimentos da Universidade para as regiões europeias (Berbegal-Mirabent et al., 2013).

A União Europeia (2011) elencou um conjunto de quatro áreas a partir das quais as Universidades estimulam o desenvolvimento regional: reforçar a inovação regional através das suas atividades de investigação; promoção das empresas, desenvolvimento e crescimento de negócios; contribuição para o desenvolvimento do capital humano regional e competências, e melhorar a igualdade social através da regeneração e desenvolvimento cultural. Este artigo centra-se na segunda área, abordando os projetos universitários que visam a promoção do empreendedorismo. O empreendedorismo tem um papel crucial no crescimento económico e na criação de emprego. A educação no empreendedorismo está incluída no leque de ferramentas através das quais se espera que as Universidades contribuam para o desenvolvimento regional (Laukkanen, 2000).

Desde uma fase inicial que a educação ganhou relevância e foi definida como uma prioridade, tanto para a Comissão Europeia, como para as regiões europeias. Neste contexto, as Universidades têm beneficiado das oportunidades criadas pelos programas educacionais que promovem o desenvolvimento de um conjunto variado de competências, promovidos por Políticas de Educação Europeias (Cankaya et al., 2015). Atualmente o programa Erasmus+ cobre uma ampla gama de projetos destinados a aumentar as qualificações e a empregabilidade. O programa apoia parcerias transnacionais no campo da educação, formação e instituições e organizações jovens que promovam a cooperação e estabeleçam pontes entre o mundo da educação e do trabalho, com o objetivo de colmatar as lacunas de competências na Europa. A educação em empreendedorismo está no centro destas preocupações. O Erasmus+ promove o desenvolvimento de competências empresariais que criam um ambiente propício para o empreendedorismo (European Commission, 2010; European Commission, 2016), e oferece suporte para a promoção da educação empreendedora pelas Universidades, (Jansen et al., 2015).

Este artigo propõe uma abordagem inspirada na abordagem de *scorecard* para desenvolver uma metodologia para aferir os impactos regionais dos projetos de empreendedorismo universitários desenvolvidos no âmbito do programa Erasmus+.

Palavras-chave: *Educação em empreendedorismo; transferência de conhecimento; scorecard; cooperação universidade-região*

ABSTRACT

Universities play an important role in the development of regions (Brennan et al., 2004), stemming from their threefold acknowledged mission: Teaching, Research and “Community Engagement” (B-HERT, 2006). Higher Education Institutions (HEI) are equipped with highly qualified human resources and hold a key role in knowledge creation and on the development and evolution of societies (European Union, 2011). To this end an effective incorporation of such knowledge into product development and innovation is crucial (European Union, 2011).

Over the past decades knowledge transfer activities have received special attention, notably for their potential for expanding the impact of Universities (Sánchez-Barrioluengo, 2014) through the development of relationships with communities. On this regard, European countries established policies encouraging the transfer of knowledge from university to the European regions (Berbegal-Mirabent et al., 2013).

The European Union (2011) has put forward four main areas from which Universities stimulate regional development: enhancing regional innovation through their research activities; promoting enterprise, business development and growth; contributing to the development of regional human capital and skills, and improving social equality through regeneration and cultural development. This paper focuses in the second area, by addressing the university projects aiming the promotion of entrepreneurship. Entrepreneurship is regarded as instrumental in economic growth, and job creation. Entrepreneurial education therefore is included in the range of ways by which Universities are expected to contribute to regional development (Laukkanen, 2000).

Education has gain relevance as priority for the European Commission and for European regions from an early stage. In this context, Universities have benefited from the opportunities created by the educational programs fostering the development of a varied set of competences that have been promoted, nurtured by European Education Policies (Cankaya et al., 2015). Currently the Erasmus+ program offers an umbrella

for projects aimed at boosting skills and employability. The program supports transnational partnerships among Education, Training, and Youth institutions and organisations to foster cooperation and bridge the worlds of Education and work in order to tackle the skills gaps in Europe. Entrepreneurship education is at the core of these concerns. Erasmus+ promotes the development of entrepreneurial competencies which grant a propitious environment for entrepreneurship (European Commission, 2010; European Commission, 2016), and offers support for the promotion of entrepreneurship education by Universities (Jansen et al., 2015)

This paper builds on a scorecard approach to develop a methodology for assessing the regional impacts of university entrepreneurship projects developed under the Erasmus+ program.

Keywords: *Entrepreneurship education; knowledge transfer; scorecard; university region cooperation*

1. Introduction

Higher Education Institutions (HEI) are a very important player in today's society. To create and communicate knowledge is the main objective of Universities, which is achieved through teaching and research. Universities are locus of highly qualified human networks, they are actively engaged in the creation of new knowledge. However, it is important for this knowledge not to be confined in the academic world. Instead, it should be implemented in the community to create an impact in citizens' lives, in communities and in societies. To this end, the development of effective knowledge transfer activities from Universities to regions has emerged as a field of attention, backed up and actively encouraged by European policies. The promotion of enterprises, business development and growth was one of the four pillar areas acknowledged by the European Union as important for stimulating regional development of communities (European Union, 2011). Aiming at the development of entrepreneurial education, European Commission through their Education Policies, fosters the dissemination of entrepreneurship competencies by HEI.

The impact of University activity, through the programs developed under the umbrella of entrepreneurship, is regarded by decision-makers and companies alike, as being essential to an intelligent, sustainable and integrated growth of the Economies. Nonetheless, in most cases, there is no follow-up of the business ideas generated in

and by the Universities. Even the contact with alumni is mostly constrained by a number of factors, such as the numerous calls of attention by other entities, the work daily-life and other personal issues. Indeed, it is still very difficult to get accurate numbers of such impact. Our proposal is to use the Balanced Scorecard as an alternative tool for measuring these impacts.

Kaplan and Norton (1992) concluded that the traditional measures of performance, such as financial indicators, were centered on control problems and did not make the connection between operational performance with strategic goals. Thus, these authors proposed the Balanced Scorecard as a monitoring tool for performance and control strategies, including other perspectives.

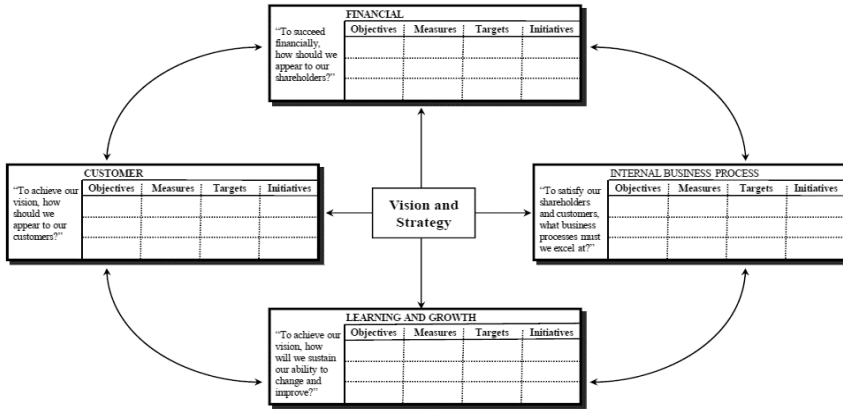
The article addresses the University programs on Entrepreneurship education, aiming at assessing their relevance for their regional context and proposing a new application for the Balanced Scorecard to assess their regional impact, which may be used to evaluate the effective efficacy of HEI regarding entrepreneurship education.

2. The balanced scorecard approach

The Balanced Scorecard (BSC) is an instrument that emerged in the 90's by the work of Robert Kaplan and David Norton of the Harvard Business School, in order to resolve the failure of traditional management systems, which typically do not correlate to long-term organizational strategy with their actions in the near future (short-term) (del Sordo et al., 2012; Urritia, 2005).

The idea of the scorecard's authors was that these tool can use several measures and indicators to evaluate a particular process in question, including financial and non-financial measures, and this is constrained in numbers and clustered into four perspectives (Kaplan, 2010). The following scheme shows the original structure for the Balanced Scorecard (Kaplan, 2010), integrating the four perspectives identified by Kaplan and Norton, when they have built the approach: financial, internal business process, learning and growth and customer.

Figure 1. Original structure of the Balanced Scorecard



Source: Kaplan and Norton (2010)

Despite BSC innovation and the relevance of the inclusion of other three perspectives, apart from financial, there were mention significant difficulties associated with its application in the past. Several improvements and adaptations have been made since the original structure, to overcome such difficulties and to allow for a fit in different situations, besides the original one, which was particularly focused on enterprises as a whole (Cobbold & Lawrie, 2002).

In summary, BSC is a management system that helps organizations to easily and quickly set, track, and achieve their strategies and objectives. The methodology uses a holistic perspective over the organizations, since it addresses not only financial measures to assess the performance, but also indicators that assess the satisfaction and interests of the key stakeholders of the organization.

In an application of the BSC to Universities, del Sordo et al. (2012) consider the rationale behind the BSC particularly suitable for public administration and universities. The approach allows the assessment of the performance, considering the objectives initially established, its quality and the stakeholders involved. For instance, the European Commission developed a scorecard-based approach to assess the outcomes of university-business cooperation activities in the field of education (Healy et al., 2014), which may be used as baseline for the impact analysis of specific programs.

3. Erasmus+ projects

The Erasmus+ is the European Union Program that emerged in the new Europe 2020 funding framework, during the period of 2014-2020 in the field of education, training, youth and sports. These Erasmus+ areas are of key importance to help the Europe to face the socio-economic changes and support the implementation of the European policy agenda for growth, jobs, equity and social inclusion. Although the Erasmus+ Programme includes actions in a number of areas, in order to achieve these goals, it should be noted that there is a big investment in the knowledge, skills and competences that will benefit individuals, organisations and society (European Commission, 2016). In the field of education, training and youth, the Erasmus+ Program defines Strategic Partnerships, that aim to support the development, transfer and/or implementation of innovative practices, promotes the development and modernisation of organisations, implements joint initiatives to promote cooperation, peer learning and exchanges of experience at European, national and regional level.

Strategic Partnerships can be of different dimensions, and the duration of them should be comprised between 6 months to 3 years. The partners involved in the Strategic Partnerships need to develop and implement outputs, such as curricula, pedagogical materials, open educational resources, ICT tools and other kits/toolboxes, etc.

These collaborations are international consortia that involve not only academies, but also other organisations not involved directly in academia, such as consulting agencies, local and regional authorities, chambers of commerce or cultural organisations. These projects go beyond the pure academic projects, since they include study visits, meeting across different countries, putting special focus in regions and communities, revealing their special relevance in the scope of this paper.

4. Methodology

This study aims to present a proposal for the development of a scorecard approach to analyse the effectiveness of knowledge transfer

between the University and the surrounding region and communities through the Erasmus+ programs. The suggested approach builds largely on the scorecard formulation proposed by the European Commission (Healy et al., 2014), namely using the same quadrants: benefits, activities, resources and people.

To put forward indicators for the scorecard for the Erasmus+ projects, an analysis was made about the content of the applications for several Erasmus+ projects in which the University of Aveiro is a partner, for the last 3 years. The process was iterative and conducted in parallel by two of the researchers involved in the study, in order to build two independent lists of indicators that were afterwards compared and discussed before compilation. The resulting list of indicators was finally discussed with researchers with experience in the effective management of Erasmus+ projects, as well as with key stakeholders.

5. Proposal scorecard approach for erasmus+ projects

the aim of a firm, an organization or even a partnership is to achieve success. Success may be reflected not only in financial terms, but also in what concerns the perspective of its beneficiaries and/or customers, the perspective of internal business processes, learning and growth. A scorecard approach enables the utilization of indicators that are considered important, and that will facilitate the assessment of a process, in order to support the reorientation of an organization or a partnership.

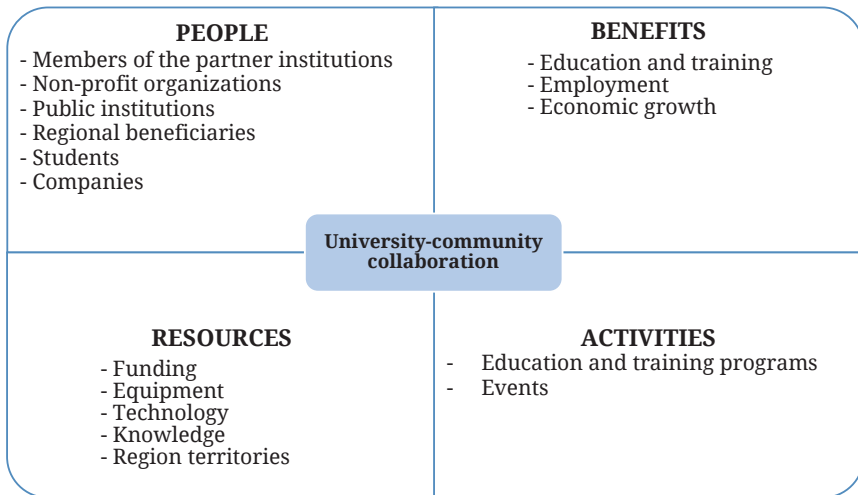
Erasmus+ projects are programs financed by the European Union that allow and encourage the development of individuals and societies. Although there are goals to be achieved, it is considered important the development of a tool that allows project partners and financiers, to have an overall view of the project and see how it could be improved.

To this end the following scorecard approach is proposed as a useful tool to assess the impact of the knowledge transfer between the Universities and the region, namely on its development. These specific

programs were chosen given its special relevance within European universities, and particularly, the University of Aveiro.

Four key quadrants, represented in the diagram below, were put forward to form the structure of the scorecard, representing the collaboration between Universities and the surrounding regions. The four areas are aligned with the most important components in the context of university-community collaboration.

Figure 2. University-community collaboration



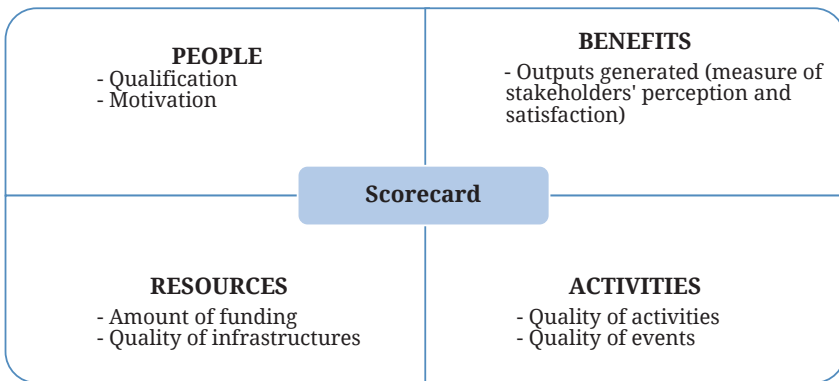
Own elaboration, based on Healy et al. (2014)

Quadrant 1 regards the benefits of the collaboration. These benefits represent the outcomes of a collaboration that will be generated post-hoc, and that may be materialize in short, medium or long term. The second area, represented in quadrant 2, is related with the activities developed in the collaboration between university and the region. In this section are considered the processes used through which the partnership continues. Results generated get better as the quality of the activities increases. In quadrant 3 and 4 are represented, respectively, the resources and people engaged in project execution. These two areas represent the resources brought to the collaboration. Regarding resources, they may include financial resources as funding and equipment, but also intangible assets such as knowledge

and technology. With respect to people, if in the collaboration are involved higher qualified and motivated people, the highest is the probability of having better results.

It is important to mention that the scorecard represents a general instrument that can be adapted for different types of university-regional development. After setting the four main areas, the general structure for the scorecard can be defined. The following diagram reveals the main features addressed in each quadrant of the scorecard, which will allow further assessment of the university-community collaboration.

Figure 3. Scorecard



Own elaboration, based on Healy et al. (2014)

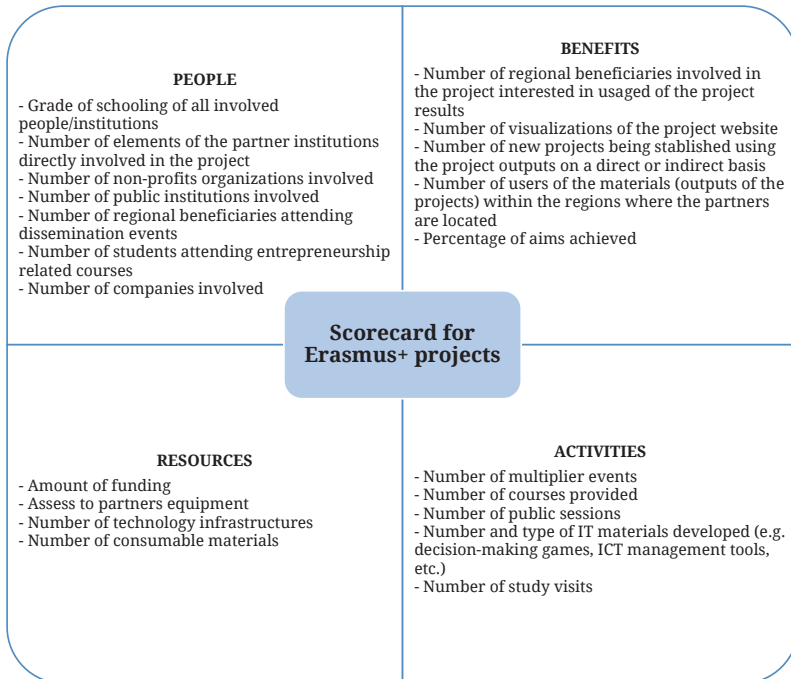
The scorecard approach can be adapted according to each analysis needed, with the intention of providing a view of the specific requirements of each project. In the case of Erasmus+ projects, the European Commission has well defined rules for submission applications, although there is some leeway for authors to define the outputs that they want to achieve. Regarding this, the authors considered an advantage the creation of a specific scorecard for Erasmus+ projects, which will assess the impact of these projects in the transfer knowledge from the university to the region and allows compare different projects. Next, an example of a scorecard for Erasmus+ projects is presented.

5.1 Application of scorecard to Strategic Partnerships of Erasmus+ Program

Given the relevance of Strategic Partnership under the Erasmus+ for regional development, regarding their particular focus on the community involvement, we propose an application of scorecard for this particular projects.

The same quadrants defined in the above diagram were used, specifying the measures for each area of the scorecard, *i.e.*, the most common indicators for this kind of projects. The selection of indicators builds on the analyses of the overall database of the Erasmus+ programs in which the University of Aveiro is a partner, concerning the approved applications. The most referred indicators used in the projects was then gathered in the following diagram.

Figure 4. Scorecard for Erasmus+ projects



Own elaboration, based on Healy et al. (2014)

6. Conclusions

This paper suggests a tool to guide the action of the European Union concerning Erasmus+ projects - Strategic Partnerships. It is a mean to communicate to external stakeholders the impact of such projects, concerning four strategic areas: benefits; activities; resources and people. The study also allows an assessment of the entrepreneurship programs created under the project scope. As well as provides a mean to compare the impact between projects and HEI.

Regarding the four different perspectives comprised in the scorecard, which includes indicators of the inputs and outputs of each project, BSC offers a cost-benefit analysis, providing partner institutions a comparison of the projects in which they are involved (quadrants resources and benefits). Given the particular features of the Strategic Partnerships, which must involve besides partner institutions, the surrounding communities, regions are one of the key beneficiaries of the actions. The suggested BSC assesses such impact, since it addresses insights over the benefits of each project, as well as the satisfaction of the key actor involved (quadrants benefits and people). Last, but not the least, the methodology offers an aggregated vision, delivering an opportunity to assess the Erasmus+ projects, and evaluate how the same inputs may lead to different outputs and benefits for the European regions. The methodology demonstrates, thus, particular interest for partners involved in Strategic Partnerships in the Erasmus+ Program, regions and the European Commission.

As future steps, the authors aim to apply the proposed balanced scorecard to the Erasmus+ projects in which the University of Aveiro is a partner.

References

Berbegal-Mirabent, J., Lafuente, E., & Solé, F. (2013). The pursuit of knowledge transfer activities: An efficiency analysis of Spanish universities. *Journal of Business Research*, 66(10), 2051-2059.

B-HERT. (2006). *Position Paper on Universities' Third Mission: Communities Engagement*. Retrieved from <http://www.bhert.com/publications/position-papers/B-HERTPositionPaper11.pdf>

Brennan, J., King, R., & Lebeau, Y. (2004). *The role of universities in the transformation of societies*. London: Association of Commonwealth Universities/The Open University.

Cankaya, S., Kutlu, Ö., & Cebeci, E. (2015). The Educational Policy of European Union. *Procedia-Social and Behavioral Sciences*, 174, 886-893.

Cobbold, I., & Lawrie, G. (2002). The development of balanced scorecard as a strategic management tool, in Neely, A. (Ed.), *Proceedings of the PMA Conference 2002, The Performance Measurement Association*, Boston.

Davey, T., Baaken, T., Muros, V. G., & Meerman, A. (2011). *The State of European University-Business Cooperation: Final Report–Study on the Cooperation between Higher Education Institutions and Public and Private Organisations in Europe*. Science-to-Business Marketing Research Centre Germany: Muenster.

del Sordo, C., Orelli, R. L., Padovani, E., & Gardini, S. (2012). Assessing global performance in universities: an application of balanced scorecard. *Procedia-Social and Behavioral Sciences*, 46, 4793-4797.

European Commission. (2010). *Europe 2020: A Strategy for Smart, Sustainable and Inclusive Growth: Communication from the Commission*. Publications Office of the European Union.

European Commission. (2016). *Erasmus+ Programme Guide, Version 2*. Retrieved from http://ec.europa.eu/programmes/erasmus-plus/documents/erasmus-plus-programme-guide_en.pdf

European Union. (2011). *Connecting Universities to Regional Growth: A Practical Guide. Smart Specialisation Platform*. Retrieved from http://ec.europa.eu/regional_policy/sources/docgener/presenta/universities2011/universities2011_en.pdf

Healy, A., Perkmann, M., Goddard, J., & Kempton, L. (2014). *Measuring the impact of university–business cooperation. Final Report. EU Commission*. Luxembourg: Publications Office of the European Union.

Jansen, S., van de Zande, T., Brinkkemper, S., Stam, E., & Varma, V. (2015). How education, stimulation, and incubation encourage student entrepreneurship: Observations from MIT, IIT, and Utrecht University. *The International Journal of Management Education*, 13(2), 170-181.

Kaplan, R. S. (2008). Conceptual foundations of the balanced scorecard. *Handbooks of management accounting research*, 3, 1253-1269.

Kaplan, R. S., & Norton, D. P. (1992), The Balanced Scorecard, Measures that Drive Performance. *Harvard Business Review*, jan. – feb 1992, 70-80.

Laukkanen, M. (2000). Exploring alternative approaches in high-level entrepreneurship education: creating micromechanisms for endogenous regional growth. *Entrepreneurship & Regional Development*, 12(1), 25-47.

Sánchez-Barrioluengo, M. (2014). Articulating the ‘three-missions’ in Spanish universities. *Research Policy*, 43(10), 1760-1773.

Urrutia, I., & Eriksen, S. D. (2005). Application of the balanced scorecard in Spanish private health-care management. *Measuring Business Excellence*, 9(4), 16-26.