



**11TH INTERNATIONAL CONFERENCE OF
EDUCATION,
RESEARCH AND
INNOVATION**

The title "CONFERENCE PROCEEDINGS" is displayed in a large, bold, white sans-serif font with a black outline. It is centered over a horizontal band that shows a close-up of a modern building's facade with a complex, geometric, yellow and white pattern. The right side of the band shows a blue sky with white clouds.

**CONFERENCE
PROCEEDINGS**

**SEVILLE (SPAIN)
12-14 NOVEMBER 2018**



**11TH INTERNATIONAL CONFERENCE OF
EDUCATION,
RESEARCH AND
INNOVATION**

**CONFERENCE
PROCEEDINGS**

**SEVILLE (SPAIN)
12-14 NOVEMBER 2018**

Published by
IATED Academy
iated.org

ICERI2018 Proceedings
11th International Conference of Education, Research and Innovation
November 12th-14th, 2018 — Seville, Spain

Edited by
L. Gómez Chova, A. López Martínez, I. Candel Torres
IATED Academy

ISBN: 978-84-09-05948-5
ISSN: 2340-1095
Depósito Legal: V-2884-2018

Book cover designed by
J.L. Bernat

All rights reserved. Copyright © 2018, IATED

The papers published in these proceedings reflect the views only of the authors. The publisher cannot be held responsible for the validity or use of the information therein contained.

THE ROLE OF TQM, INNOVATION AND INTERNATIONALIZATION STRATEGIES ON THE FINANCIAL SUSTAINABILITY OF HIGHER EDUCATION INSTITUTIONS (HEIS)

M. Godinho Antunes¹, P. Ribeiro Mucharreira², M. Texeira Fernandes Justino¹,
J. Texeira Quirós³

¹*ISCAL – Lisbon Accounting and Business School of the Lisbon Polytechnic Institute
(PORTUGAL)*

²*Institute of Education, University of Lisbon (PORTUGAL)*

³*University of Extremadura (SPAIN)*

Abstract

This research aims to study the role that Total Quality Management (TQM), innovation and internationalization strategies may have on the financial sustainability of Portuguese higher education institutions (HEIs), through a literature review that supports the presentation of a research model proposed by the authors. This research is justified by the observation of a reality still relatively little studied at the level of higher education institutions, not only in Portugal, but also in other countries, particularly regarding the prospect of financial sustainability, in line with the growing relevance that quality and innovation strategies have been taken in these institutions. Undoubtedly, also the perspective of internationalization is something that currently HEIs cannot ignore at all if they want to be considered competitive and innovative in the academic world. Increasingly, international rankings that follow strict criteria for assessing the quality, innovation and scientific research of HEIs have assumed paramount importance in the analysis of the performance of these institutions. Education, and particularly education provided in HEIs, is a resource of enormous value for the development of any society [1-2]. The literature has demonstrated that TQM practices are a powerful tool for improving organizational learning and increasing competitive advantage [3-4]. In addition to the importance of the quality of education in HEIs, emphasized through the implementation of TQM practices, this will be more easily achieved by considering organizational learning and organizational innovation to provide better services, not only to students, but also to the whole society. Despite the importance identified in the relationship between these different dimensions, the literature has also highlighted the fact that educational institutions, despite the growing recognition of their importance, are falling short of other organizations, concerning the implementation of practices leading to a culture of total quality [5]. Regarding the methodology, the data will be obtained through the application of a questionnaire prepared by the authors, to evaluate the different dimensions of the proposed research model. The sample will be for convenience, consisting of about 200 emails from members of the management boards of Portuguese universities and polytechnics. In the treatment of quantitative data, the use of the multiple linear regression model is considered, to investigate the possible relationships between the different dimensions incorporated in the model. According to Hair *et al.* [6], it is a practical statistical tool that examines the linkages between a set of independent variables with a dependent variable. In this way, we consider this statistical method the most adequate for the development of our research. In terms of discussion of results, it is intended to characterize the various dimensions of the TQM, as well as the strategies of innovation and internationalization in the institutions of university and polytechnic higher education in Portugal, seeking to understand their role and possible relations with the financial sustainability of these institutions.

Keywords: Total Quality Management, innovation, internationalization strategies, financial sustainability, higher education.

1 INTRODUCTION

Education and science are deeply embedded in economics and social life, and their level significantly affects the life quality and the possibility of constant development in both a country and the international community at large. Therefore, science and qualified personnel are recognized in Europe as the decisive factor in achieving the objectives of internationalization of the educational process, that is, to make European education more competitive, dynamic and capable of ensuring sustainable growth, employment of the population and social cohesion.

The modern labor market requires graduates to be able to operate these technologies and knowledge that meet the needs of the information society, preparing young people for new roles in this society. Thus, conditioned by globalization and the constant changes that have taken place today, higher education institutions (HEIs) are forced to seek new quality assurance instruments in higher education. States seem to pursue this goal by attempting to create an efficient operational system of higher education that meets the needs of various social groups. The dimension of quality is the most important element of efficient and effective higher education.

HEIs are characterized by several distinctive features that differentiate them from any other type of institution, and these aspects reflect the strategy of the whole educational system as well as the development strategy of each educational institution. Many factors can affect HEIs quality, such as the organizational culture and the rapid change that occurs in the contexts where they are inserted and that inevitably affect all organizations, including HEIs. One of the ways to achieve a quality organization is the implementation of the Total Quality Management (TQM) approach that encompasses all the processes and stakeholders of an institution.

On the other hand, there is also the concept of innovation. The concept of innovation in HEIs is understood as a procedure or method of educational activity that differs significantly from established practice and is used to increase the level of efficiency in a competitive environment. Educational innovations include pedagogical innovation, scientific and methodological innovation, educational and technological innovation. Higher education institutions that have chosen innovation-based development become competitive leaders in the education market. The creation of new forms of education and the use of perfect control mechanisms in each educational institution will give the opportunity to create a unique educational space capable of meeting the needs of society in quality education with specific opportunities of clients in the educational market. Thus, higher education systems should seek to innovate [7], that is, HEIs should rethink their working model, provide their graduates with the skills and knowledge appropriate to the job market and create knowledge that can be marketed in new products and services.

The issue of internationalization has, over the last few years, taken on a leading role not only in Europe but throughout the world. Concerning the internationalization of HEIs, several authors have analyzed the question of quality in these institutions with a view to obtaining a sustainable competitive advantage [8-10]. Due to an increasingly competitive environment among HEIs globally, these institutions have been concerned with the need to adopt management techniques to improve the quality of study programs and services [11-12]. In addition to this, HEIs have taken a more active approach than they did in the past, with institutions now focusing not only on services but also on influential environmental factors and their impacts on potential students [10]. The quality of higher education is affected by a variety of factors, not only the content of the courses of study, but also the performance of faculty, student support services and other aspects should be recognized when assessing higher education, especially the quality of HEIs.

Among the existing studies about the performance of institutions, is possible to state that there isn't a single criterion for defining the performance, which makes difficult to measure or compare the results. Some studies considered performance only regarding operational levels [13], while others measured only the financial performance [14], and still, others evaluated the performance at various levels [15]. To overcome this ambiguity concerning the performance criterion, in this research will be considered the financial sustainability of HEIs as the desirable outcome of the HEIs analysis.

2 THEORETICAL FRAMEWORK

Since higher education is considered a public good, thus being a public responsibility, the pressure is continuously on the demand for maximum effectiveness and efficiency in the management of resources and in the search for quality assurance, and the organization itself is the first instance where evaluation processes should be established. The internal structures and mechanisms for quality assurance should be a fundamental first line of intervention in evaluation processes, with the ultimate objective of promoting the internalization of a quality culture that permeates all the activities carried out within the institution [16].

Parallel to an internal validation of quality, over time, the debate over quality assurance systems through evaluation and accreditation processes has emerged in many countries, such as in Portugal. Although evaluation and accreditation, which are part of quality assurance systems, are processes that are naturally interconnected, the evaluation is more oriented towards the systematic and

sustained improvement of the quality of the institution and can thus validate accurate and pertinent information about the institution, while accreditation is linked to the purposes of transparency and compliance, being associated with certification through an official recognition [16].

In line with the increase in quality assurance systems in the European area, Portugal has created the agency A3ES (Decree-Law 369/2007, November 5th), with the purpose of promoting and guaranteeing the quality of higher education. The A3ES is an institution with legal personality and recognized as being of public utility and is independent in its decisions that must nevertheless consider the guidelines prescribed by the Portuguese State [17-18].

Although in the last decades there has been a significant increase in the rates of attendance and completion of higher education courses in Portugal, with the positive externalities that result from the level of qualifications of the Portuguese working population, it is important to point out a clear underfunding of the Portuguese higher education system, putting into question the quality of the system [19].

Higher education institutions, traditionally dependent on the State Budget, have begun to feel the need to resort to own revenues- facing of the steady reduction of public funding in recent decades - such as those from fees, contracts with companies or research centers, rental of space and equipment, among others. Official data confirm that in less than a decade and a half Portugal has passed public funding in the order of 95% to 69% in 2010, thus approaching the OECD average in the same year, 68.4%, but far from the EU average, which stood at 76.4%.

Accompanying the decline in public funding, also in Portugal the global trend of cost sharing / cost-sharing has been affirmed, among the government, or taxpayers, parents, students and / or individual or institutional donors [20]. According to Cerdeira *et al.* [21] it should be noted that Portugal, like other southern European countries, involves high costs in the education of many individuals which, by emigrating, implies that can be offered high qualified workers for free or at a zero-cost basis to the importing countries. Other strategies to ensure the sustainability of higher education in Portugal should attract more population for higher education attendance, particularly for low-skilled adults [19]. Likewise, it is expected that the autonomy in the management of higher education institutions will be strengthened, incentives for research centers will be negotiated, a reinforcement of the financial allocation for the sub-sector will be carried out, so that it fulfills its commitment to society, and be, at the same time, a factor of growth and economic development, because the option of increasing fees will not be a viable option since the sharing of costs by households is already quite high compared to other EU and OECD countries. Other aspects referenced as core, for sustainability and quality assurance of the system, focus on the need for a better (re) organization of university and polytechnic higher education institutions, redefinition of relations between public and private institutions, the possibility and the need to strengthen partnerships with companies and, no less important, to continue to pay special attention to the evaluation and accreditation processes of higher education courses and their institutions.

2.1 Total Quality Management in Higher Education

Total Quality Management (TQM) is a management philosophy that aims at continuous improvement of organizational performance and customer satisfaction, being transversal to the whole organization and incorporating in its model all the actors of the organizational structure. Many of the researches that have focused on the effects of TQM over the competitive advantage have shown that its presence leads to improved performance and increased competitiveness [22-27]. TQM principles have been applied in the industrial sector for several decades, however, its application in service companies and, more specifically, in HEIs has recently emerged as a new concept, framed in new realities that began to recognize higher education institutions as profitable organizations [28].

Investigations on the implementation of TQM practices in HEIs have had projection due to the growing competitiveness of educational institutions, not only in the private but also public sector, and in the increase of expectations generated around the labor market. Nowadays, due to globalization and internationalization, there are constant changes that occur very quickly, which means that, in business environments, organizations must react quickly and efficiently to these changes, if they want to be successful in the business world.

Thus, to differentiate themselves from their competitors, organizations must develop their resources, promoting the creation of knowledge and the dissemination of information. It is in this perspective that

the new paradigm of how to manage and develop knowledge and the strategic forces of organizations, thus becoming the central focus of recent investigations.

Education is a resource of enormous value for the development of any society and the recognized quality of education provided in institutions is a fundamental element of the administrative management of higher education institutions [1-2]. Quality assumes a role of relevance in customer satisfaction and recognition of the institution in the market, and nowadays one of the primary objectives of any institution is to achieve excellence in its area of business. However, as already mentioned, this task is more complex when it comes to assessing something intangible, such as education systems and the processes of higher education institutions [16], and it is therefore essential to define adequate tools for the evaluation of these intangible assets.

TQM has been considered an evolution in quality management approach, playing a key role in the development of new management practices. Many researchers point out the TQM as an approach to improve the efficiency, flexibility and business competitiveness to meet the customer's requirements which, in turn, will provide operational and financial benefits to the organization, translating into competitive advantage. TQM is based on a principle of continuous improvement that can provide a set of scientific skills and tools to meet the current and future needs and expectations of educational institutions. Many researchers have demonstrated that TQM practices are a powerful tool for improving organizational learning and increasing competitive advantage [3-4]. Although the TQM principles were initially used in the industrial sector, the implementation of TQM practices is also applicable to higher education institutions [29], having the potential to improve quality in educational institutions and achieve continuous improvement [30]. The implementation of TQM practices at HEIs has been driven by increased competition, the adaptation to the educational environment in constant evolution, and by meeting the expectations of all stakeholders [31].

Nowadays, the most relevant aspects of education in higher education are translated by learning, dynamic structures, flexibility and quality. Consequently, the higher education system will have to adapt to the continuous changes and new requirements, to achieve the success and the proposed objectives. This means that the entire education system will, necessarily, to coat itself on high levels of quality. On the other hand, the emphasis placed on costumers and quality leads to consider as priorities organizational learning and innovation so that institutions provide the best services to students and teachers as well as to society itself, promoting, ultimately, growth and economic development [32].

The potential benefits of TQM in educational institutions are very evident, insofar as TQM can help the institution or university to provide better service to its "customers" / primary users, namely students and lecturers. Beyond this aspect, continuous improvement, which emerges as one of the great pillars of the TQM theory, assumes relevance to ensure the requirements accountability affects to educational reform.

The current context of higher education emphasizes the importance of the TQM principles in the education system. However, the existing literature has highlighted the fact that educational institutions have lagged other organizations, regarding the culture of total quality [27]. These authors defined TQM's philosophy as the culture of an organization committed to customer satisfaction through continuous improvement, and this culture may vary from one country to another and between different industries. However, there are certain key principles that can be implemented to ensure greater market achievement, increased profits and reduced costs, regardless of the organization's field of expertise [5]. Many of the investigations that have focused on TQM's repercussions on competitive advantage have shown that their presence leads to improved performance and increased competitiveness [22-27]. In this sense, the following hypotheses of the research were defined, with the aim to analyze the several dimensions of TQM and their possible relationship with financial sustainability.

H1: Communication has a significant association with financial sustainability of HEI's.

H2: Involvement/teacher empowerment has a significant association with financial sustainability of HEI's.

H3: Development/teacher training has a significant association with financial sustainability of HEI's.

H4: Continuous improvement has a significant association with financial sustainability of HEI's.

H5: Leadership/administration's commitment has a significant association with financial sustainability of HEI's.

H6: Data analysis/measurement of results has a significant association with financial sustainability of HEI's.

H7: Focus on students has a significant association with financial sustainability of HEI's.

2.2 Innovation in Higher Education

In the current context of global and highly competitive markets, performance evaluation has become an extremely important element in the development of institutions' strategies. Thus, an innovation strategy can have positive effects on HEIs performance, however, a company will not be able to benefit from the advantages of innovation if there is no defined organizational structure to follow this strategy. Innovation may reflect a significant impact on the institution's performance by enabling a better position in the market, which, in turn, can give it a competitive advantage and superior performance.

In the last decades, the theme of innovation has attracted the attention of many researchers and professionals, and innovation has been considered as a strategic driver to take advantage of new opportunities and to protect knowledge assets [33-35]. Innovation plays a major role in providing unique products and services, creating more value than previously recognized and setting barriers to entry for new competitors [36]. Therefore, innovation has sparked the interest of many researchers identify their push factors [37].

In the literature, several definitions of the concept of innovation are found. Damanpour [38] defines innovation as anything new to the business, which may consist of a system, a policy, a process, a product or a service, and is considered a tool for the success of the organization. Lafley and Charan [39] refer to innovation as a new idea that materializes in benefits, revenues and profits. Crossan and Apaydin [40] gave a more exhaustive definition of the concept, characterizing innovation as the production or adoption, assimilation and exploitation of innovative added value in economic and social spheres; renewal and creation of products, services and markets; development of new production methods; and definition of new management systems, being both a process and an outcome.

Competitiveness as one of the elements of any market environment improves the quality of specialist training, because it leads HEIS to provide qualified professional standards to all stakeholders, such as teachers, non-teaching staff and students. The higher education market, through competitive mechanisms, promotes participation in innovation processes. Competition based on innovation, its quality and opportunity are an important feature of the survival of HEIs, it serves as a crucial factor for the development and implementation of new offers. Higher education institutions that opt for innovation-based development become competitive leaders in the education market, and only those institutions will be able to adapt quickly to change. In this way, the following hypothesis of investigation is put forward:

H8: Innovation strategies have a significant association with financial sustainability of HEI's.

2.3 The Role of in Internationalization Higher Education

National economies cannot effectively participate in global markets if their universities fail to keep up with the dynamics of internationalization. These changes consist of increasing mobility of students and academic staff, the growing number of foreign students and courses, programs and qualifications that focus on international issues. In addition, national states have begun to promote the internationalization of universities in a coordinated way, such as the Bologna Process and the EU Erasmus Program, which improve the mobility of students and academic staff and support other forms of international activity. In this way, and lastly, the following hypothesis of investigation is put forward

H9: Internationalization strategy has a significant association with financial sustainability of HEI's.

Considering the brief theoretical framework presented, the research model proposed for this research is shown in Figure 1.

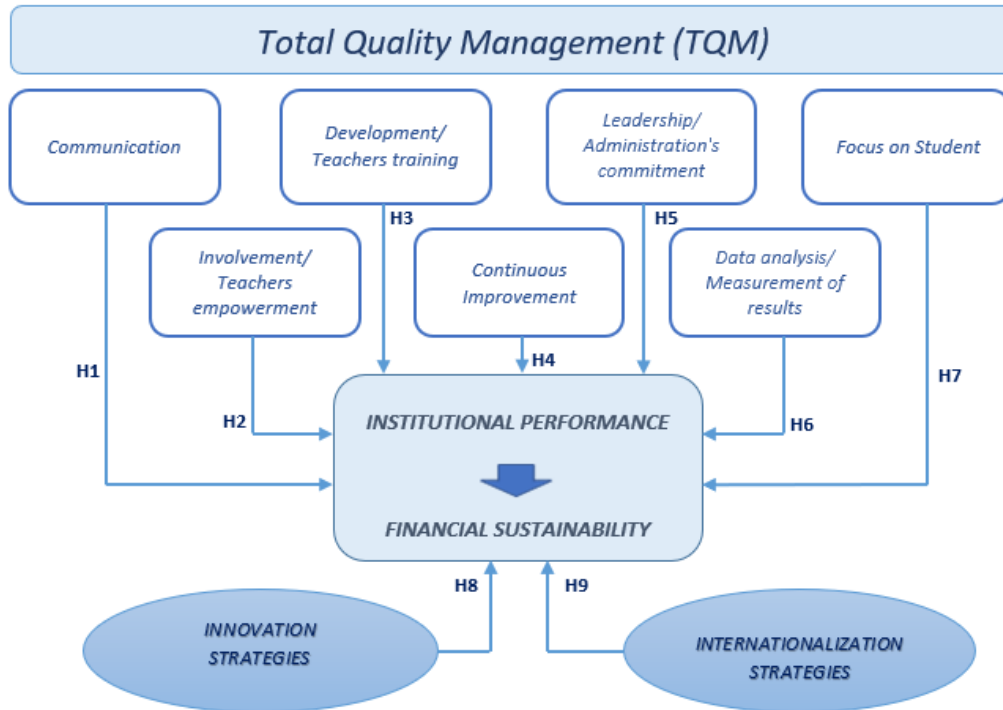


Figure 1. Conceptual Model.

To examine the association between TQM dimensions, innovation strategies, and internationalization strategies with financial sustainability of HEI's, we have chosen to use multiple linear regression analysis. According to Hair *et al.* [6], it is a practical statistical tool that examines the linkages between a set of independent variables with one dependent variable.

In this study, a nine-predictor multiple linear regression model was proposed. The nine predictor variables are Communication (X1), Involvement/teacher empowerment (X2), Development/Teacher training (X3), Continuous improvement (X4), Leadership/Administration's Commitment (X5), Data analysis/Masurement of results (X6), Focus on students (X7), Innovation Strategies (X8), and internationalization strategy (X9). The equation of the proposed multiple linear regression model is illustrated as follows:

$$Y (P1) = b_0 + b_1 (X1) + b_2 (X2) + b_3 (X3) + b_4 (X4) + b_5 (X5) + b_6 (X6) + b_7 (X7) + b_8 (X8) + b_9 (X9) + \varepsilon$$

where:

$Y (P1)$ = Dependent variable (financial sustainability of HEI's), b_0 = Constant, ε = Error

3 METHODOLOGY

Regarding to methodology, this research is of a qualitative nature, although using quantitative techniques, being the data obtained through the application of a survey elaborated by the authors to evaluate the different dimensions of the proposed conceptual model. The sample will consist of about 200 emails from members of the Direction of Portuguese universities and polytechnics. In the treatment of quantitative data, the use of the multiple linear regression model is considered, to investigate the possible relationships between the different dimensions incorporated in the model. In this way, we consider this statistical method the most adequate for the development of our research. It is expected to start the data collection in the next two months, being expected to complete the research in the next six months. The questionnaire will be designed with closed questions, using a Likert scale of five points for the evaluation of the opinions of respondents about the considered dimensions. For the characterization of the respondents and organizations, nominal and ordinal scales will be used.

4 FINAL CONSIDERATIONS

TQM has come to be recognized as a tool which allows to obtain a significant competitive edge in the global market. Some of the most frequent topics mentioned in various definitions suggested for TQM are related to continuous improvement, the customer orientation, the employee autonomy and management commitment, stressing also that the interests of customers, employees, suppliers, competitors and all large-scale society should be considered. Having been demonstrated the role of TQM practices in HEIs, with this research proposal, it is intended to highlight the importance of quality in education, precisely in HEIs, since the existing literature has highlighted the fact that educational institutions have lagged from other organizations, regarding the culture of total quality. However, higher education system will have to adapt to the continuous changes and new requirements, to achieve the success and the proposed objectives.

The conclusions obtained in the various studies carried out focusing on the usefulness of TQM in education are not consensual [41]. Some authors point out that TQM practices can be applied in HEIs [42-43], while others disagree about their applicability in dynamic and constantly changing environments such as those that characterize the reality of HEIs [44-45]. A possible explanation for the divergent results obtained is the application of TQM practices and the interpretation of their assumptions.

In the current market environment, quality is a key aspect for the competitiveness of institutions. Faced with a dynamic and complex environment, HEIs realized the relationship between TQM and performance assessment, starting to adjust their courses and offerings to meet the needs of various markets and customers. TQM assumes itself as an organizational strategy and a commitment of organizations to continually improve and develop their procedures to manage quality results and respond to customer satisfaction. Being the process of quality linked to business strategy, this will bring advantages to the performance its organization.

One of the assumptions assumed by organizations is that innovation strategies can provide organizations with certain benefits, which often justify the investments made to develop new products and services in order to reach new markets or the development of technologies, processes and procedures to support the production of these products and the provision of services. However, in order to achieve these objectives, it is not enough, and by itself, to define an innovation strategy. The organization will also have to develop an organizational structure that facilitates the implementation of this strategy to be feasible the defined plan [46]. Innovation has a significant impact on the performance of the organization by enabling a better position in the market, which in turn will confer a competitive advantage and superior performance. On the other hand, the issue of internationalization has, in recent years, been playing a leading role, not only in Europe but throughout the world. With regard to the issue of the internationalization of HEIs, several authors have analyzed the question of their effects on these institutions in order to obtain a sustainable competitive advantage [46].

In this way, this study intended to characterize the various dimensions of the TQM, as well as the strategies of innovation and internationalization in the institutions of university and polytechnic higher education in Portugal, providing a theoretical model that seeks to understand the role and possible relations of those independent variables with the financial sustainability of these institutions,

ACKNOWLEDGEMENTS

This communication / participation is part of the research project developed under the funding promoted by IDI&CA 2018 (3rd edition), of the Lisbon Polytechnic Institute.

REFERENCES

- [1] R. Reed; D. J. Lemak; & J. C. Montgomery, "Beyond process: TQM content and firm performance", *Academy of Management Review*, vol. 21, no. 1, pp. 173 – 201, 1996.
- [2] S. Rahman, "The future of TQM is past. Can TQM be resurrected?", *Total Quality Management*, vol. 15, no. 4, pp. 411-422, 2004.
- [3] K. S. Hendricks; & V. R. Singhal, "Firm characteristics, total quality management and financial performance", *Journal of Operations Management*, vol. 19, no. 3, pp. 269-285, 2001.

- [4] M. Martinez-Costa; & D. Jiménez-Jiménez, "Are companies that implement TQM better learning organizations? An empirical study", *Total Quality Management*, vol. 19, no. 11, pp. 1101-1115, 2008.
- [5] M. B. Sirvanci, "Critical issues for TQM implementation in higher education", *The TQM Magazine*, vol. 16, no. 6, pp. 382-386, 2004.
- [6] J. F. Hair; R. E. Anderson; R. Tatham; & W. C. Blank, *Multivariate Data Analysis*. Prentice Hall, Englewood Cliffs, NJ, 1998.
- [7] M. Barber; K. Donnelly; & S. Rizvi, *An Avalanche Is Coming Higher Education and the Revolution Ahead*. Institute for Public Policy Research, London, 2013.
- [8] S. Aldridge; & J. Rowley, "Measuring customer satisfaction in higher education", *Quality Assurance in Education*, vol. 6, no. 4, pp. 197-204, 1998.
- [9] A. Athiyaman, "Linking student satisfaction and service quality perceptions: the case of university education", *European Journal of Marketing*, vol. 31, no. 7, pp. 528-540, 1997.
- [10] Y. J. Moogan; S. Baron; & S. Bainbridge, "Timings and trade-offs in the marketing of higher education courses: a conjoint approach", *Marketing Intelligence & Planning*, vol. 19, no. 3, pp. 179-187, 2001.
- [11] R. Telford; & R. Masson, "The congruence of quality values in higher education", *Quality Assurance in Education*, vol. 13, no. 2, pp. 107-119, 2005.
- [12] R. K. Yeo, "Brewing service quality in higher education", *Quality Assurance in Education*, vol. 16, no. 3, pp. 266-286, 2008.
- [13] D. Samson; & M. Terziovski, "The relationship between total quality management practices and operational performance", *Journal of Operations Management*, vol. 17, no. 4, pp. 393-409, 1999.
- [14] T. J. Douglas; & W. Q. Judge, "Total quality management implementation and competitive advantage: the role of structural control and exploration", *Academy of Management Journal*, vol. 44, no. 1, pp. 158-169, 2001.
- [15] A. Das; R. Handfield; R. Calantone; & S. Ghosh, "A contingent view of quality management – the impact of international competition on quality", *Decision Sciences*, vol. 31, no. 3, pp. 649-690, 2000.
- [16] B. G. Cabrito, "Avaliar a qualidade em educação: avaliar o quê? Avaliar como? Avaliar para quê?", *Caderno Cedes*, vol. 29, no. 78, pp. 178-200, 2009.
- [17] N. G. Araújo; L. Cerdeira; & P. R. Mucharreira, "Políticas de Formação Docente: breve cenário entre a experiência de Brasil e Portugal", In A. Q. Neto, F. D. A. Silva, & V. A. Souza (eds.). *Formação e Trabalho Docente: história, políticas educacionais e práticas pedagógicas*. Curitiba: Editora CRV, pp. 115-130, 2017.
- [18] P. R. Mucharreira; B. G. Cabrito; & L. Cerdeira, "A formação docente em Portugal: o papel das instituições do ensino superior na formação dos educadores de infância e dos professores do ensino básico e secundário", In B. Cabrito, J. Macedo, & L. Cerdeira (Orgs.). *Ensino Superior no Brasil e em Portugal – atualidades, questões e inquietações*. Lisboa: Educa, pp. 207-226, 2018.
- [19] L. Cerdeira, "Pensar o Ensino Superior. Que futuro?", *Conferência Pensar a Educação, Portugal 2015*. Lisboa: ISEG, 2015.
- [20] B. Johnstone, "The Economics and Politics of Cost Sharing in Higher Education: Comparative Perspectives", *Economics of Education Review*. vol. 23, no. 4, pp.1, 2004
- [21] L. Cerdeira; B. G. Cabrito; M. Machado-Taylor; & T. Patrocínio, "Transfer investment on education on a free cost basis: some evidence from Portugal, Spain, Greece and Italy", *Revista Ensaio: Avaliação e Políticas Públicas em Educação*, vol. 24, no. 93, pp. 777-803, 2016.
- [22] M. Terziovski; & D. Samson, "The link between total quality management practice and organizational performance", *International Journal of Quality and Reliability Management*, vol. 16, no. 3, pp. 226-237, 1999.

- [23] Z. Zhang, "Developing a model of quality management methods and evaluating their effects on business performance", *Total Quality Management*, vol. 11, no. 1, pp. 129-137, 2000.
- [24] J. Texeira-Quirós; & M. R. Justino, "A comparative analysis between certified and non-certified companies through the quality management system", *International Journal of Quality & Reliability Management*, vol. 30, no. 9, pp. 958 – 969, 2013.
- [25] J. Texeira-Quirós; J. Alმაça; & M. R. Justino, "Nonparametric decision tree: the impact of ISO 9000 on certified and non- certified companies", *Intangible Capital*, vol. 9, no. 3, pp. 559-570, 2013.
- [26] M. G. Antunes; J. Texeira-Quirós; & M. R. Justino, "The relationship between innovation and total quality management and the innovation effects on organizational performance", *International Journal of Quality & Reliability Management*, vol. 34, no. 9, pp. 1474-1492, 2017.
- [27] M. G. Antunes; J. Texeira-Quirós; & M. R. Justino, "Total quality management and quality certification: effects in organisational performance", *International Journal of Services and Operations Management*, vol. 29, no. 4, pp. 2018.
- [28] M. G. Antunes; P. R. Mucharreira; M. R. Justino; & J. T. Quirós, "Total Quality Management implementation in Portuguese Higher Education Institutions", *ICETIC Proceedings*. Badajoz: Universidad de Extremadura, pp. 9-10, 2018.
- [29] M. S. Owlia; & E. M. Aspinwall, "TQM in higher education – a review", *International Journal of Quality and Reliability Management*, vol. 14, no. 5, pp. 527–543, 1997.
- [30] G. K. Kanji; A. Malek; & W. Wallace, "A comparative study of quality practices in higher education institutions in the US and Malaysia", *Total Quality Management*, vol. 10, no. 3, pp. 357–371, 1999.
- [31] E. Bayraktar; E. Tatoglu; & S. Zaim, "An instrument formeasuring the critical factors of TQM in Turkish higher education", *Total Quality Management. Business Excellence*, vol. 19, no. 6, pp. 551–574, 2008.
- [32] P. R. Mucharreira; & M. G. Antunes, "Os efeitos das variáveis macroeconómicas no desempenho das organizações: Evidência das pequenas e médias empresas em Portugal", *Portuguese Journal of Accounting and Management – Revista Científica da Ordem dos Contabilistas Certificados*, no. 17, pp. 113-143, 2015.
- [33] D. Teece, *Managing Intellectual Capital*. Oxford: Oxford University Press, 2000.
- [34] H. Gatignon; M. Tushman; W. Smith; & P. Anderson, "A structural approach to assessing innovation: construct development of innovation locus, type, and characteristics", *Management Science*, vol. 48, no. 9, pp. 1103-1122, 2002.
- [35] P. Hurmelinna-Laukkanen; L. Sainio; & T. Jauhiainen, "Appropriability regime for radical and incremental innovations", *R&D Management*, vol. 38, no. 3, pp. 278-289, 2008.
- [36] F. Lloréns-Montes; A. Ruiz Moreno; & V. Garcia Morales, "Influence of support leadership and teamwork cohesion on organizational learning, innovations and performance: an empirical examination", *Technovation*, vol. 25, no. 10, pp. 1159-1172, 2005.
- [37] N. Becheikh; R. Landry; & N. Amara, "Lessons from innovation empirical studies in the manufacturing sector: a systematic review of the literature from 1993-2003", *Technovation*, vol. 26, no. 5/6, pp. 644-664, 2006.
- [38] F. Damanpour, "Organizational innovation: a meta-analysis of effects of determinants and moderators", *Academy of Management Journal*, vol. 34, no. 3, pp. 550-590, 1991.
- [39] A. Lafley; & R. Charan, *The game-changer: how you can drive revenue and profit growth with innovation*. New York: Crown Business, 2008.
- [40] M. Crossan; & M. Apaydin, "A multi-dimensional framework of organizational innovation: a systematic review of the literature", *Journal of Management Studies*, vol. 47, no. 6, pp. 1154-1191, 2010.
- [41] G. Meirovich; & E. J. Romar, "The difficulty in implementing TQM in higher education instruction—the duality of instructor/student roles", *Quality Assurance in Education*, vol. 14, no. 4, pp. 324–337, 2006.

- [42] S. Helms; & C. Key, "Are students more than customers in the classroom?", *Quality Progress*, vol. 27, no. 9, pp. 97–100, 1994.
- [43] J. V. Koch; & J. L. Fisher, "Higher education and total quality management", *Total Quality Management Business Excellence*, vol. 9, no. 8, pp. 659–668, 1998.
- [44] D. Houston, "TQM and higher education: a critical systems perspective on fitness for purpose", *Quality in Higher Education*, vol. 13, no. 1, pp. 3–17, 2007.
- [45] W. E. Matthews, "The missing element in higher education", *Journal for Quality and Participation*, vol. 16, no. 1, pp. 102–108, 1993.
- [46] M. Ebrahimi; & M. Sadeghi, "Quality management and performance: an annotated review", *International Journal of Production Research*, vol. 51, no. 18, pp. 5625-5643, 2014.