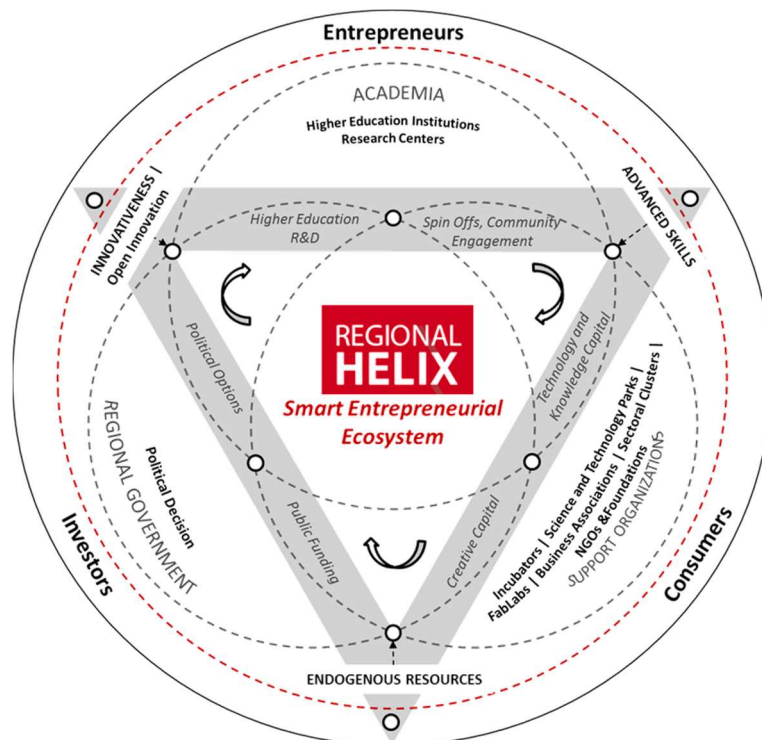


# Regional HELIX'17

## International Conference on Innovation, Entrepreneurship and Technology Transfer

21-23 of June, 2017 – Covilhã, Portugal  
University of Beira Interior

## Book of Proceedings



Organisers:



NECE



Instituto Politécnico de Castelo Branco



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Regional HELIX'17 – International Conference on Innovation, Entrepreneurship and Technology Transfer

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## **Foreword**

The emergence of new business models based on innovation, cooperation networks, and the enhancement of endogenous resources, currently constitutes an important set of opportunities for the dynamic and competitive repositioning of regional ecosystems, opening new strategic avenues of cooperation between regional, national and international actors, academia, business and policy makers.

It is intended, into the Smart Entrepreneurial Ecosystems logic, that the event is not based on a purely academic but also technological and entrepreneurial dimensions, across the most diverse sectors of activity.

The Regional HELIX'17 (second edition) involves a partnership with scientific, business, and political stakeholders. It took place at the University of Beira Interior (UBI), Portugal, organised by NECE – Research Center in Business Sciences, at the 21-23 of June, 2017.

The table of contents includes only the abstracts of the papers submitted.

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## Abstracts

### **A CYBER-PHYSICAL SYSTEM BASED COLLABORATIVE DISTRIBUTED MANUFACTURING SYSTEM ARCHITECTURE FOR INTELLIGENT MANUFACTURING**

ABHISHEK THAKUR, NISHANT CHAUDHARY, PIYUSH TILOKANI, VIJAYA MANUPATI, ERIC COSTA, LEONILDE VARELA AND JOSÉ MACHADO

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This paper systematically reviews the cyber-physical systems (CPS) based on collaborative distributed manufacturing systems architecture for intelligent manufacturing. This paper systematically reviews the literature, examining the role of Internet of things, big data, distributed manufacturing systems, collaborative manufacturing, and intelligent manufacturing. To this end, 25 relevant journal articles were analyzed, with the identification of some important issues, as well as gaps in the existing knowledge. Moreover, a CPS architecture in distributed manufacturing is proposed that acts as a platform for the collaborative environment to intelligently performing the tasks. The proposed architecture encapsulates different resources which can act as a guide to building a CPS framework for the equipment interconnection, to the data collection, processing and the final knowledge procurement and learning. Furthermore, enabling technologies are discussed in the context of distributed manufacturing environment for successful integration of different technologies to minimize the interoperability.

### **LINKING INTANGIBLE RESOURCES AND ENTREPRENEURIAL ORIENTATION TO EXPORT PERFORMANCE: THE MEDIATING EFFECT OF DYNAMIC CAPABILITIES**

ALBERTINA PAULA MONTEIRO, ANA MARIA SOARES AND ORLANDO RUA

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This research draws upon the Resource-Based View (RBV), Dynamic Capabilities View (DCV) and the Entrepreneurship premises that a firm's resources, capabilities and entrepreneurial orientation determine export performance. Specifically, we develop and test a model entailing the relationship between intangible resources, dynamic capabilities and entrepreneurial orientation with export performance, considering the mediating effect of dynamic capabilities between intangible resources and export performance. The results of a survey of 265 Portuguese exporting companies show that export performance is directly impacted by dynamic capabilities and entrepreneurial orientation and indirectly by financial, informational and relational resources. Thus, intangibles resources have a positive and significant relation with export performance through the mediation of dynamic capabilities. Our findings highlight the importance of dynamic capabilities since intangible resources indirectly affect export

performance. These findings constitute valuable inputs for exporting managers and public entities.

### **A STUDY OF MARKETING INNOVATION USING FACTORIAL ANALYSIS AND MULTIVARIATE LINEAR REGRESSION**

ALDINA CORREIA, VÍTOR BRAGA, ANA MACHADO AND ALEXANDRA BRAGA

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The recognized importance of innovation and their role in competitiveness of firms is well known. Innovation in marketing is not an exception being one question of great relevance for the economy. Based on a sample of 6840 Portuguese companies which replied the 2012 Community Innovation Survey, it has been used multivariate techniques as factor analysis and multivariate linear regression which measured the factors associated with main strategies and obstacles for reaching the enterprise's goals and their contribution to innovative performance, mainly focused in the marketing innovation. It was verified that the majority of Portuguese firms, in this survey, do not have any marketing innovation, and a little percentage of them innovated in design or packaging, product promotion and placement and pricing, the four levels of marketing innovation considered in the survey. Five factors were found associated with main strategies and obstacles for reaching the enterprise's goals: costs, improvement of goods or services and cooperation, internationalization, market and financial issues. Within these factors, which contributes most to the marketing innovation, according to the results obtained with the linear regression, is that which is correlated with the importance give by the firm to the improvement of goods or services and cooperation.

### **INTANGIBLE RESOURCES AND EXPORT PERFORMANCE: THE MEDIATING EFFECT OF ABSORPTIVE CAPABILITIES**

ALEXANDRA FRANÇA AND ORLANDO RUA

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This paper develops a framework to test the relationship between intangible resources and export performance, considering the mediating effect of absorptive capabilities. Based on survey data from Portuguese small and medium-sized enterprises (SMEs) exporting footwear findings suggest that: (1) intangible resources directly and positively influences absorptive capabilities, but does not have however a positive influence on export performance; (2) in turn, absorptive capabilities directly and positively influences export performance; and finally (3) absorptive capabilities does have a mediating effect on the relationship between intangible resources and export performance.

This study deepens our understanding and provides novel insights into strategic management literature, since it combines multiple factors and has obtained the importance of each construct in SMEs business growth.

### **EXPERIENTIALITY IN CULINARY TOURISM: MEMORABILITY, QUALITY OF LIFE AND PLACE ATTACHMENT AS EXPERIENTIAL ANTECEDENTS OF LOYALTY.**

ANA MARÍA CAMPÓN-CERRO, ELIDE DI-CLEMENTE AND JOSÉ MANUEL HERNÁNDEZ-MOGOLLÓN

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The quest for experientiality is making a new trend in the tourism industry. By the one side, destinations and tourism companies are facing a new competitive scenario and need innovative strategies to successfully remain in the market. By the other side, experientiality is bringing to the surface new components defining the tourism phenomenon which should be given major attention in order to properly integrate modern tourism proposals into the new experiential stream. The present research sees in Memorability, Quality of Life and Place Attachment potential experiential variables which can drive future loyal intentions towards the destination. Culinary tourism has been chosen as a proper context to test experientiality and its effects on marketing outcomes. The causal relationships between these concepts have been analysed using structural equation modelling and the partial least squares (PLS) technique. Results achieved confirmed that new concepts should be considered in order to reach a better understanding of the current experiential phenomenon and to provide destinations and practitioners with new strategies in line with the requirements of the sector and the modern consumers' expectations.

### **MANAGEMENT ACCOUNTING AND CONTROL SYSTEM IN THE INTERNATIONALIZATION PROCESS – A CASE STUDY**

ANA ROQUE, MARIA DO CÉU ALVES AND MÁRIO RAPOSO

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In the last years, several authors have studied the relationship between organizational structure and business strategy. Whereas the internationalization is a strategy for companies that long to achieve competitive advantage, it is considered that Management Accounting and Control Systems (MACSs) should be designed according to the strategies, in order to improve the company's performance. Thus, we propose, with this work, to investigate how MACS contributes to the successful implementation of the internationalization process and consecutively to the improvement of the company's performance.

To achieve this, and after a broad review of literature, a case study was developed in a Portuguese company of the automotive sector. Data were collected through interviews and documental analysis. The internationalization model of the company was studied and the

relationship between the MACS and the implementation process of the internationalization strategy was analysed. Given the growing interest in internationalization, we hope to contribute, with this study, to improve the knowledge of the relationship between MACS and the internationalization process and its effects on the company's performance. This study points to promising results that justify further studies of this relationship, in the future.

#### **FROM THE CURRENT INDUSTRIAL STAGE TO THE INDUSTRY 4.0: TRANSFORMATION PROCESSES AND CASE ANALYSIS OF THE FESTO COMPANY**

ANAPATRÍCIA VILHA, PAULO SANTOS, ELIANE MESSAGE, ALBERTO SUEN AND DÉBORA MEDEIROS

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Despite of the acceleration of investments and the expansion of countries towards the industry 4.0, companies have difficulties in planning the transition processes and implementation of the scenarios of Industry 4.0. To benefit from the industry approach 4.0, it is necessary to take technological and organizational transition processes into account, since the phenomenon involves interoperability between humans; Between humans and machines; And between machines and production. This paper proposes to examine the transformation processes of the current industrial model to the industry 4.0 model of Festo AG, in addition to the framework proposition for the analysis of transformation processes for industry 4.0. Through the face-to-face interviews and the institutional materials of Festo, it was observed that the company inserted in its strategy of products and innovation the concept of Industry 4.0. To do so, Festo planned and built a new production plant based on connectivity, sustainability and collaborative environment, especially between man and machine. To support this orientation, Festo has strengthened its technological base, culture, training of its productive, commercial and management teams.

#### **WHAT DO WE KNOW ABOUT THE TRIPLE HELIX MODEL? PAST, PRESENT AND FUTURE RESEARCH**

ANDERSON GALVÃO, CARLA MASCARENHAS, CARLA MARQUES AND JOÃO FERRREIRA

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A growing interest in the relationships between universities, companies, societies and the environment is increasingly evident in the scientific literature, in all fields of research. This systematic literature review sought to identify the most extensively studied topics with respect to the triple, quadruple and quintuple helix models developed to explain these links. The review also focused on ascertaining future trends within this field. Relevant documents obtained from a search in the Institute for Scientific Information's Web of Science were submitted to bibliometric analysis using VOSviewer software. The results of this systematic review illustrate

that, despite growing concern about society and the environment, issues related to the three helixes of universities, industries and governments continue to be the most often studied. However, an additional focus on research on quadruple and quintuple helix models has emerged in the more specialised literature. An analysis of co-citations also identified four clusters of research: Policies of Innovation and Knowledge, Entrepreneurial Universities, Business Innovation Strategy and Triple Helix Stakeholders in Innovation, Knowledge and Regional Development.

### **DEVELOPMENT OF AN EASY AND EFFECTIVE ATTACHMENT SYSTEM FOR LOWER LIMB PROSTHESIS**

ANDREIA S. SILVEIRA, PATRÍCIA A. SENRA, EURICO SEABRA AND LUÍS F. SILVA

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This study aimed to introduce a new suspension system that is capable of increasing the amputee's satisfaction in terms of locking the residual limb inside the prosthetic socket. This paper describes the design and development phases carried out to optimize the final solution. The design system was based on the amputee's needs and the requirements of prosthetic suspension systems. The final solution is a combination of a guiding and fixation system, to overcome some of the reported problems with the current systems, presenting a new simple suspension method that improves the donning and doffing of prosthesis. The new suspension system is a good alternative system to improve the life quality of amputees with lower activity level on the daily basis and, consequently, ease their rehabilitation.

### **ANALYSIS AND COMPARISON OF A HYDRAULIC AND PNEUMATIC SYSTEM**

ÂNGELA CUNHA, JOÃO VEIGA, LUÍS F. SILVA AND EURICO SEABRA

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This work addresses the modeling of a system using Modelica language and the Dymola software tool. Dymola is a modeling and simulation environment that uses the open Modelica language to map hardware components of physical systems directly into software components. Therefore, this modeling language allows the user to model a system in a physical form, rather than a mathematical fashion, through the use of general equations, objects, and links. This paper as an informative character about a tool for the development of mechatronic systems. The topics covered here are part of a more extensive modeling and simulation work on the dynamics of mechanical systems, within the scope of an Integrated Master in Mechanical Engineering. This study was carried out based on the comparison between pneumatic and hydraulic models of the same system. Therefore, it was modeled a system used in backhoe loaders that can be operated

either using a hydraulic or a pneumatic cylinder. The activity focuses, essentially, on the analysis of parameters that describe the behavior of the system, emphasizing the position, velocity, acceleration and loads observed in both cylinders. The goal is to introduce the reader to the Dymola environment and Modelica language by addressing the modeling of a system. This study also pretends to identify significant differences regarding the behavior performance of the pneumatic and hydraulic approaches to model the selected system, and the causes that lead to such differences.

### **MIDDLE-LEVEL MANAGERS AS INDUCTOR AGENTS FOR THE DYNAMIZATION OF ENTREPRENEURSHIP AND INNOVATION ACTIVITIES IN ORGANIZATIONS**

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The economic environment we live in nowadays is increasingly characterized by its dynamism and globalization, setting up a competitive and ever-changing global environment. Middle-level managers, by their position in organizations, allow them to play a role that encourages and stimulates entrepreneurship activities in the organizations. In order to measure middle-level managers' perception on the organizational environment to promote entrepreneurship and innovation activities in the organizations, we applied an assessment tool developed by Hornsby, Kuratko and Zahra (2002) through a questionnaire survey of 66 intermediate level managers in non-financial organizations with activity in Portugal. On the one hand, the results suggest that organizations favor a climate of support, and on the other hand, they also create constraints.

### **INDUSTRY-UNIVERSITY COOPERATION: A SYSTEMATIC LITERATURE REVIEW**

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This systematic review examines the literature related to university-industry cooperation and seeks to identify the trends and future research agenda. Hence, the aim of the present paper is to: 1) describe how this field of research is organised in terms of publications and authors, 2) identify the main co-cited references and the groups (i.e. clusters) they form, and 3) discuss the challenges this literature presents (i.e. opportunities and difficulties) in the study of university-industry cooperation. The analysis suggests that four main streams of research can be identified: 1) Absorption Capacity, Knowledge and Competitiveness in University-Industry Relations, 2) Impact of Knowledge Spill-overs on University-Industry Relations, 3) Strategic Alliances for Industry Innovation and 4) University-Industry Cooperation. A critical analysis of articles

suggest there are still substantial gaps in knowledge which open new paths for future research agenda in this new and stimulating field of research.

### **THE IMPACT OF ENTREPRENEURSHIP EDUCATION ON THE INDIVIDUAL ENTREPRENEURIAL ORIENTATION OF UNIVERSITY STUDENTS**

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This study sought to evaluate the impact of entrepreneurship education (EE) on the entrepreneurial orientation (EO) of higher education students, as mediated by gender and family history. A survey tool for measuring EO was developed and used in one university. The responses were processed using statistical methods. The data were collected with an online questionnaire distributed to students of engineering and business and social sciences in the last year of their degree program at the undergraduate and graduate levels. Some respondents had had a class in entrepreneurship while others had not. The results highlight that EE generally has a greater impact on business and social sciences students. Family background and gender are moderating variables with a positive influence on individual entrepreneurial orientation (IEO). This study's main practical implication is that evidence was found that universities need to develop more effective didactic approaches to EE. These must take into account new market demands and students' profile, as well as always taking into account their different academic areas and levels of previous EE. This paper contributes to filling a gap in the literature by identifying the importance of EE, gender, and family background to the development of IEO in students of different academic programs (i.e., engineering and business and social sciences).

### **MARKET ORIENTATION AND BUSINESS PERFORMANCE IN THE HOTEL INDUSTRY-DOES SERVICE QUALITY PLAYS A MEDIATING ROLE?**

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This study seeks to explore the nature of the relationship between market orientation and business performance in the Portuguese hotel industry and to evaluate the mediating role of service quality in this relationship. Research results shows that market orientation has a positive direct effect on business performance. Moreover, results indicate that market orientation effects on business performance are mediated through hotels ability to provide service quality. By producing a positive effect on service quality, which in turn has a positive effect on business performance, market orientation makes a significant and positive indirect effect on business



performance. Working data shows that the proposed models holds convergent and discriminant validity as well as reliability.

## **THEORY OF KNOWLEDGE ACCOUNT**

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The aim of this paper is to demonstrate how a group of companies manufacturing the footwear in the Rioja invest in intellectual capital. Intellectual capital through knowledge generated relational and organizational capital with positive results for the group. We'll see how investing in knowledge within the group has generated significant results: higher turnover, greater enrichment of enterprises and a more prosperous future from the point of view of value added to the product. We analyze time series where we see the evolution of the sector compared to the two companies. The products of these companies are low priced products without brand. We come to the conclusion that now is the time to invest in R & D and knowledge, to get another range of product and company. This is why work and study I do. Try to make an inclusion in the intellectual capital of the company through the implicit knowledge. Case method for two footwear manufacturing companies located in the Rioja is used. We rely on a purely qualitative and comparative study time series; accompanied by the completion of a questionnaire / interview the workers of the two companies.

## **AGRICULTURAL ENTREPRENEURSHIP AND THE FINANCIAL CRISIS**

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This paper aims to analyse the influence of the recent financial crisis, that began in 2008, on European agricultural entrepreneurship, given the impact of the crisis on European economic activity and the lack of studies on agricultural entrepreneurship. Using individual-level data from the Total Early-Stage Entrepreneurial Activity (TEA) for the European agricultural sector in 2007 (before the crisis) and 2012 (after the crisis), taken from the Global Entrepreneurship Monitor (GEM), we investigate whether the financial crisis changes the role of motive, demographic and economic factors (gender, age, education, household income) perceived characteristics (opportunity perception, self-confidence, fear of failure, meeting other entrepreneurs) and innovativeness (clients, technology and competition). This study includes 22 European countries and the results allow us to conclude that the role of these variables is changed by the crisis, except for the role of gender, to meet other entrepreneurs, customers and competition, which may reflect specific characteristics of the agricultural sector.

**MULTIVARIATE STATISTICAL ANALYSIS, WITHIN THE FRAMEWORK OF "CIS 2010 - COMMUNITY INNOVATION SURVEY"**

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Innovation is a central theme and of great relevance for all those involved in the current global market, increasingly competitive and dynamic. The "CIS 2010 - Community Innovation Survey" is a Eurostat tool for an effective and harmonized understanding of the obstacles, sources and results in the various aspects of innovation that European companies have. In this study, a factorial analysis was elaborated to understand the companies' posture regarding innovation and the business strategy adopted by them. Regarding the strategies, two factors were identified: Cost containment strategy and Growth strategy. Through the discriminant analysis it was possible to perceive that the variables related to the creativity and competences of the company are those with greater power of differentiation in relation to the companies that really innovate in some way and to those that do not innovate at all. An analysis of the structure of the survey was also made, after the results obtained.

**AN ANALYSIS OF THE PATENT APPLICATIONS ON THE CONTEXT OF THE PORTUGUESE HIGHER EDUCATION SYSTEM: UNIVERSITIES VERSUS POLYTECHNIC INSTITUTES**

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This paper analyses the distribution of patents applications filled in Portugal on the context of the dual higher education system, comprising both universities and polytechnics institutes, for the decade 2007-2016, using data from the National Institute of Industrial Property (INPI). Evidence shows a tendency towards the increase in the total number of patent applications from 2007 onwards but it also points out to a clear gap that exists between universities and polytechnics institutes patent production patterns – in absolute terms, polytechnic institutes lag behind universities, although there some exceptions that the paper underlines. The paper will then arise some questions that have to be considered in terms of higher education innovation policy in Portugal, specially taking in account the need to stimulate the patent output of the polytechnic institutions, as a means to impede the exacerbation of differences across universities and polytechnic institutions in terms of financial resources and research outcome.

## **A MULTINOMIAL LOGISTICS APPROACH TO MODEL EXPERTS' PERCEPTIONS ON ENTREPRENEURSHIP**

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In this paper a multinomial logistics regression is used to model the experts' perceptions about different subjects, in particular, about the Entrepreneurship Framework Conditions. The most recently available data from GEM, i.e., NES 2013, is used. The type of expert is described by a nominal variable with five categories: "entrepreneur"; "investor, financier, banker"; "policy maker"; "business and support services provider"; and "educator, teacher, entrepreneurship researcher". The odds of an experts being an "entrepreneur" over being an "educator, teacher, entrepreneurship researcher" increases with the increase in the perception of "the people working for government agencies are competent and effective in supporting new and growing firms". The same occurs for the odds of being "investor, financier, banker" and "policy maker". The odds of being a "policy maker" over being an "educator, teacher, entrepreneurship researcher" increases with the increase of the perception of "the markets for business-to-business goods and services change dramatically from year to year". The same effect is observed for "business and support services provider". The odds of being a "business and support services provider" also increases with the increase of "the anti-trust legislation is effective and well enforced". The multinomial logit regression model presented an overall percentage correctness of 54.1%.

## **STRATEGIES AND PRACTICES OF TECHNOLOGICAL INNOVATION IN BRAZIL UNDER THE OPTICS OF TRIPLE HELIX**

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We are facing a greater complexity of the scientific, technological and innovative problems at present, that is, innovation increasingly depends on the generation of scientific and technological knowledge. Thus, the innovation process addresses the need for the interaction of the company with multiple actors to seek knowledge with a view to expanding its capacity to provide innovations, or even to access new technologies and markets. The Brazilian innovation system is considered immature and weak in relation to the interactions of scientific, technological and innovative actors. The objective of this work was to analyze the maturity of the companies installed in Brazil around the construction of competitive strategies and technological innovation, as well as the examination of the efforts for the realization of partnerships for technological and innovative development in collaboration and transfer of technologies promoted by the Federal University Of ABC. The findings of the UFABC case study revealed that

the university has captured substantial resources for the development of a variety of projects. To this end, distinctive initiatives reflected in its pedagogical project, organizational structure and research, and the promotion of innovative areas and projects have shown its dynamic positioning for collaborative arrangements.

### **DETERMINANTS OF INNOVATION ACTIVITIES ONGOING OR ABANDONED**

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This paper analyses R&D, Barriers and Cooperation as determinants of ongoing or abandoned innovation activities. The conjugation of this three determinants that encompass the most important factors of all procedures of innovation activities, allow knowing which is the most influent as determinants to Portuguese SMEs abandon or ongoing there innovations activities. The database was obtained through the Community Innovation Survey 2010 (CIS 2010). The three most important determinants that lead firm's to abandon their innovation projects are R&D activities carried out internally, insufficiency of firm's own capital or of the capital of the and the lack of related sources from competitors or other firm's in the same sector of activity. About their ongoing activities, the main factors are investment in R&D activities carried out internally, investing in shares/procedures involved in the introduction of new products or processes or their significant improvement and investment in the acquisition of external R&D.

### **CREDIT GUARANTEE AND THE IMPACT IN FINANCIAL STRUCTURE OF THE PORTUGUESE SMES**

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The aim of this work is to show the relevance of guarantees provided by the Mutual Credit Guarantee System (MCGS - the Portuguese Society of Credit Guarantee SPMG) as an instrument used in the financing of SMEs, especially in restructuring long-term debt (LTD) and bank loans. The study provides empirical evidence and puts forward an explanatory model of the influence of the mutual credit guarantees on the financing of SMEs. The results obtained show that long-term debt (LTD) financing is positively influenced by the guarantees provided by the MCGS to SMEs as it allows greater debt capacity, especially in the medium and long term, for firms that usually cannot obtain this type of financing. The results also suggest that this type of guarantees creates an environment of confidence among all stakeholders involved.

**MATHEMATICAL AND COMPUTATIONAL MODELING IN MATLAB FOR THE STUDY OF AN ORC SOLAR SYSTEM**

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The main objective of the internship was to acquire the necessary thermodynamic knowledge in order to perform a thermodynamic and economic analysis of a solar ORC system of capacity Of 10KW. For this, a model and computer program was developed in Matlab R2008a, version 7.6.0, which analyzes the efficiency of the collector based on the gross solar radiation introduced and the efficiency of the ORC cycle against the power of the respective radiation. Based on the behavior of the collector and the ORC cycle, the program returns as outputs the area and quantity of manifold required for the desired power. Taking into account the best scenario obtained, an economic analysis is carried out in order to determine the payback of the investment with the solar collectors. With this study it is concluded that for the best scenario, the collector area required is 1044.1 m<sup>2</sup> and collector 590 respectively. The annual profit is 48360 € / year and an 8 year payback for the initial investment with the vacuum tube collectors.

**KNOWLEDGE MANAGEMENT AND ORGANIZATIONAL LEARNING: CONCEPTS, APPLICATIONS, AND INTERRELATIONSHIPS**

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The aim of this research is the understanding of the linkages between knowledge management and organizational learning concepts, exploring models developed, analysing empirical studies, models and concepts that approach business outcomes. We developed a systematic review of the literature and propose an integrative model. Organizational learning is seen as a form of growth of the Organization and its concept is approached to incorporate the dynamic capabilities in the internal processes of the company. The model presented summarizes the key concepts and approaches and can be used in the new future guidelines, with application practice organizations and your diagnosis, fomenting the given moment the strategic decision-making.

**ENTREPRENEURIAL MARKETING (EM): LITERATURE REVIEW, CONCEPTS RELATIONSHIPS AND SYSTEMATIZATION MODEL**

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Given the objective of better perception of concepts, the development of the Marketing Entrepreneur field in recent decades, this study aims to contribute to the theoretical field of Entrepreneurial Marketing. Has been prepared a systematic review of the literature, particularly relevant to the development of conceptual framework, evolution models and empirical studies. The systematization of concepts presented can be used by managers in defining strategy and planning policies of EM. We intend to contribute to the clarification of their field of study. The overlapping of the theories of conventional marketing, as well as the issues indicated by entrepreneurship lead to the development of marketing entrepreneur, as a spirit, an orientation. It translates into a process of looking for opportunities and growth companies that create value noticeable by the customer, through relationships, innovation, creativity and flexibility. Given the scarcity of this type of study in entrepreneurial marketing field can the systematization be used by managers, contribute to the development of new concepts and be used for new lines of future orientation. This work appears with the aim of better perception of concepts, their thread in the theoretical field, its evolution in recent decades, listing a conceptual systematization.

**USING A HUMANOID ROBOT AS THE PROMOTOR OF THE INTERACTION WITH CHILDREN IN THE CONTEXT OF EDUCATIONAL GAMES**

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Society should care about those with special needs. Part of a proper care involves the development of new technologies and devices aiming at improving their quality of life. Research conducted at universities on this subject should be followed by the industrial development of commercial products and governmental institutions may play an important role by establishing conditions ensuring that the results are made available to those who need them. This paper presents the details of a system, still at the early stages of research level, aimed at helping children with Autism Spectrum Disorders (ASD). It uses ZECA, a humanoid robot Zeno R-50, acting as the promoter of the interaction with children, by teaching colours and geometric figures in the context of two educational game scenarios: identification of five geometric figures and identification of five colours. So far, the system was tested in a school environment with

typically developing children, in order to validate the experimental setup and the game design. The results obtained in these tests allowed optimizing the system before starting the work in special education units with children with ASD, which is the next step in the research.

### **PERCEPTIONS ON EFFECTIVENESS OF PUBLIC POLICIES SUPPORTING ENTREPRENEURSHIP AND INTERNATIONALIZATION**

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The economic and financial crisis that has plagued the world in recent years has stimulated entrepreneurs to be more creative and policy makers to be more effective in the important role they can play in economic growth through government support to entrepreneurship and internationalization of firms. The literature shows that entrepreneurship is an important growth factor, so it becomes prominent to try to understand if these supports have been effective in stimulating business activity. This article's main goal is first, to show the importance of some aspects for policy at the national level and second try to understand if public policies and programs are effective in entrepreneurship and internationalization of firms. In order to achieve that goal we'll use the Global Entrepreneurship Monitor (GEM) dataset, and perform a multivariate analysis through a multiple linear regression and also a questionnaire to five large firms.

### **WHAT DO WE KNOW ABOUT INNOVATIVE PERFORMANCE OF EUROPEAN REGIONS? A REFLECTION ON STRATEGIES FOR SMART SPECIALISATION**

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This research aims to identify what kind of variables explain the performance of innovative regions of Europe, based on regional strategies for smart specialisation. The data were collected from the Regional Innovation Scoreboard 2016 and a linear regression was applied as a method. The results led to an explanatory model of the innovation performance in Moderate Innovator Regions, and some measures were identified and suggested that can be implemented in order to help decision-makers to improve the innovation performance in these regions, as well can help to foster the development and economic growth.

### **SMART SPECIALIZATION AS BOOSTER FOR THE REGIONAL INNOVATION ECOSYSTEMS**

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This research seeks to contribute to smart specialization systematization as booster for the regional innovation ecosystems as well as identifying future trends in this field. An extensive investigation was conducted in the Web of Science database using and based on 344 articles selected, six clusters were identified: cluster 1 – innovation networks and triple helix; cluster 2 - regional innovation systems; cluster 3 – regional innovation network; cluster 4 - smart innovation policies; clusters cluster 5 – smart specialization; and cluster 6 - Asian innovation systems. Furthermore, twenty-five future lines of research recently published in literature distributed by the six clusters were identified. This research contributes to open new horizons for future agenda.

### **DESIGN AS STRATEGY FOR THE DEVELOPMENT OF ORGANIZATIONS – FROM A CREATIVE PRACTICE TO A VALUE CREATION INSIGHT**

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Design and design culture are part of social, cultural and economic contemporaneity. It is a global territory that deals with methods, strategies and creativity, and copes with new, more complex challenges and work forms, so it is necessary to address its role in terms of strategy. The following paper develops a description of this emerging thematic within design—design as strategy. Understood as strategy, we build a conscious knowledge and theoretical ground of how design happens in practice and how it triggers its action at the strategic level. Design, in its contemporary setting, becomes involved in issues beyond its traditional configuration and territory; it is not confined to its traditional roles and is with innovation. It extends towards other areas, using its integrative profile in order to promote interdisciplinarity and interaction with different stakeholders. The purpose of the following paper is to provide insight into the field of design, acknowledging its scope, its multiple creative processes, outcomes, and its justification by many organizational needs. In this organizational and corporate interpretation, it becomes a constituent for development.



**THE ROLE OF CIRCULAR ECONOMY IN PERIPHERAL COUNTRIES: A MULTIPLE HELIX APPROACH**

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Over the past decades, more attention has been given worldwide to sustainability issues, like the scarcity of natural resources, waste management and climate changes. Circular economy has been assumed as a strategy to overcome these issues, since it implies the adoption of clean production, reuse of materials, use of renewable energies, waste recycling, among others. In recognition of this, several countries, like China, Japan, German and Netherlands, have implemented legislation in favour of circular economy, whence successful experiences were obtained. An important learned lesson emphasis the participation of all actors (governments, regional authorities, business and non-governmental organizations) in the transaction towards a Circular economy strategy. The purpose of this study is to use a Multiple Helix approaches to analyze and discuss the challenges and opportunities towards a Circular Economy in peripheral countries, identifying the implications of fostering sustainable economic growth and enhancing local competitiveness by means of an integrated approach.

**NATIONAL, REGIONAL OR INDUSTRIAL EXPLANATION FOR FIRMS' DEATHS IN THE EUROPEAN UNION SINCE 2010 UNTIL 2014 – A SHIFT-SHARE APPLICATION**

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The concept of business closure is one of the main events in business demography which importance for the business cycle is well recognized in the specialised literature. Traditionally, firms' closure has been associated with regional factors. Still, a region can have different from the nation aggregate rate of activity because it has a different mix of industries and/or because it enjoys comparatively more favourable local conditions for that activity (Fotopoulos & Spence, 2001). Thus, business closure may be driven by the business cycle, industrial composition as well as regional advantage (Cheng, 2011). Regarding previous framework, the research work is dedicated to analyse each of these three factors that may drove business closure in European Union countries between 2010 and 2014, and to find out which of them has/have been the most important one(s). For this purpose a shift-share decomposition analysis of business closure will be applied. The results proved that regional component had the highest impact on firms' deaths during the investigated period of time for almost all countries included in the analysis. Only for few countries and in specific industries the most influential factor was the industrial composition, and even for less the national macroeconomic path.

**MECHATRONIC SYSTEM FOR DRYING HUMAN BODY AFTER BATH**

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From several tasks needed for taking care of disabled and/or bedridden people, bath is one of them. After bath, of those persons, one of most important tasks is related with during the human body, mainly in users with reduced mobility. Those users need some specific assisting devices that can help them performing drying their own body after bath. Existing devices, for those purposes are not satisfying those people for several reasons that are explained on this paper. The main added value of this paper is the proposition of a mechatronic device for performing those tasks, related with human body drying, and covering some gaps detected when other similar systems have been analysed. An equipment, for being attractive in this domain, must combine three main requirements: comfort, efficiency and safety. Those three characteristics were always taken in consideration during the design of the proposed solution. That solution is presented in this paper as a future and it is expected that can to solve the majority of the identified problems in the mentioned context. A conceptual model of the proposed solution is presented.

**REMOTE CONTROL SYSTEM FOR A MOBILE PLATFORM WITH FOUR MECANUM WHEELS**

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Providing the industry with efficient transportation systems is of utmost importance and academic research on this topic deserves encouragement from governmental institutions. In many workplaces the space is reduced. Ensuring the required manoeuvrability of mobile platforms inside such environments is quite a challenge. Anthropomorphic robots are not a viable option in most situations. Usually, mobile platforms – including mobile robots – with wheels are the most cost effective option, but the use of traditional steering systems leads to severe constraints regarding freedom of movements. The use of omnidirectional steering systems allows overcoming this limitation. Since its invention, Mecanum wheels have been used on various mobile platforms, including Automatic Guided Vehicles (AGV), enabling them to perform omnidirectional movements. This paper describes a robust, intuitive and functional remote control system for a mobile platform with four Mecanum wheels, capable of performing rotation movements, translation movements and movements resulting from simultaneous rotation and translation. The system was designed in order to maximize the freedom of

movements of the platform. A graphical interface for monitoring several parameters inherent to the operation of the platform is also presented.

### **NONPROFIT STAKEHOLDERS DEMAND INNOVATION IN ACCOUNTABILITY**

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Nonprofit stakeholders continue to demand innovation in the provision of information for decision-making and evaluation purposes. Traditionally the NPOs accountability has been characterized by a strong incidence of financial indicators derived from the traditional financial statements. However several studies, point to the need for non-financial indicators for proper decision-making. This poses a research challenge to NPOs, which consists of being, or not, capable of bringing innovation to the accountability of NPOs. The disclosure of information about the NPO performance seems to be complex because each organization is related and interacts with a set of stakeholders who are affected or may affect the achievement of organizational goals. The questions that need to be answered are: how do stakeholders evaluate the organization's performance? Are the evaluation criteria common to several categories of stakeholders?

A deep literature review revealed that the performance evaluation of NPO is not properly treated and it is an underexplored social reality. A deeper understanding of this reality requires the analysis and observation of different poorly structured information sources. Therefore, a qualitative methodology is chosen using an exploratory case study. The study of a large Portuguese NPO allowed the identification of how different categories of stakeholders assess the organization's performance and how the NPO could satisfy their information needs.

### **SMART, SUSTAINABLE AND INCLUSIVE GROWTH: CURRENT DIGITAL REVOLUTION AND ITS POTENTIAL IN THE LOW DENSITY AND PERIPHERAL PORTUGUESE BEIRAS REGION**

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For the past decades, incremental digitalization and automation of system has allowed significant developments affecting not only manufacturing and industrial systems, but also major aspects of current modern life and trends. These vast technological changes are having a disruptive impact on conventional business practices and social norms, allowing forecasting even more beneficial impacts on society, with special relevance to low density and peripheral territories. However, despite the projected potential of digital technologies to these regions, major developments have yet to take place, as the mere availability of such technology does not

automatically translate into progress and results. Therefore, a fundamental question remains, regarding to what can be achieved with such array of technologies and how it can affect and improve the everyday life of peripheral territories' inhabitants, like those of Portuguese Beiras Region. With this research it is intended to present the potential of state-of-the-art of digital technologies regarding the parameterization of technical and living systems in order to promote innovative and competitive business solutions that may present advantages for low density and peripheral regional ecosystems, like the one located in the Portuguese Beiras Region.

### **INDUSTRIAL ENGINEERING @ IPCB: 20 YEARS PROMOTING UNIVERSITY'S THIRD MISSION**

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The production, diffusion and preservation of knowledge are typically perceived as the main goals of universities and remaining academia actors alike. Nonetheless, considering a Multiple Helix framework, special focus has to be put into the academia relations with surrounding stakeholders and society in general. Such relations and activities, also known as the university's third mission, focus on the knowledge transfer and application to enhance innovation and promote social development. To this end, in a knowledge driven society, third mission activities allow promoting new institutional and social dynamics that cannot be considered a minor undertaking when related to both combined missions, namely teaching and research & investigation. In the Portuguese Castelo Branco's Polytechnic Institute (IPCB), lecturers, researchers, students and graduates of local Industrial Engineering degree have been working towards the promotion of academia's third mission since the early days of its creation, more than twenty years ago. Located in the peripheral inland region of the country, the Industrial Engineering degree was created to help supporting the main industries' attributes of the region. Dedicated strategies between academia and surrounding stakeholders allowed enhancing the differentiating attributes of local industry, making it more relevant for the region's economy. In this paper, special focus will be put into the different strategies carried out by local Industrial Engineering academia actors towards the promotion of the university's third mission, namely the close industry-academia-industry interactions that resulted in various joint undertakings that will be presented and further discussed as a case study in the light of the multiple helix framework. The body of knowledge that is created here is meant to support mainly students and instructors, but also new researchers, who wish to address the potential of the third mission actions in small regional ecosystem to promote their development and growth.

**NEW AND GROWING FIRMS AND ECONOMIC DEVELOPMENT LEVEL**

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This study aims to address the problem of entrepreneurship using the Global Entrepreneurship Monitor (GEM) project, in particular the NES\_2013 database. According to the authors Sarkar (2007) and Bosma, Wennekers, and Amorós (2012) the GEM project has three main objectives: to measure differences in the level of entrepreneurial activity between countries, to discover the factors that determine the levels of entrepreneurial activity and to identify policies that promote the entrepreneurial activity. Furthermore, according to Swanson and DeVereaux (2017), entrepreneurship involves the presence of lucrative opportunities, enterprising individuals, and risk. Reynolds, Hay, and Camp (1999) defined entrepreneurship as "Any attempt at new business or new venture creation, such as self-employment, a new business organization, or the expansion of an existing business, a team of individuals, or an established business". In this study multivariate statistical analysis tools are used, through the SPSS Software, in order to analyze entrepreneur's perceptions about conditions to create new and growing firms and the economic development level. A factor analysis was applied to reduce the items /variables related to the new and growing firms and a discriminant analysis was used to relate the economic development level with the perceptions about conditions to develop new and growing firms.

**CROSS-COUNTRY ANALYSIS TO HIGH-GROWTH BUSINESS: UNVEILING ITS DETERMINANTS**

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CROSS-COUNTRY ANALYSIS TO HIGH-GROWTH BUSINESS: UNVEILING ITS DETERMINANTS

Entrepreneurship is defined as the effort to create and create jobs and innovate leading to economic growth. Despite the importance that has been given to this phenomenon in relation to the entrepreneurial activity remain. This research aims to find the determinants that high growth companies have in different countries in the international world.

**THE IMPORTANCE OF MARKETING AND ORGANISATION OF MAJOR EVENTS FOR THE PROMOTION OF THE REGION – THE WTCC IN VILA REAL**

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Since the year 2015, the city of Vila Real has hosted the World Touring Car Championship (WTCC), a sports car race that has an economic, social, cultural and political impact on the city of Vila Real and even on the region. The WTCC is an example of a major event that, like all others, entails a properly planned and structured event management and organisation, as well as a

strong investment in marketing strategies, specifically sports marketing, in order to achieve the impact and the expected audience. Thus, this study seeks to distinguish the role / importance (1) of the work of the organisation, (2) the organisation of the event and (3) the strategies of divulgation of the event for public participation and adhesion, since it is the public participation and adhesion that serves to measure the impact of the event, as well as the quality of the work of the organisation and the promotion of the event. On the other hand, it is through the adhesion of the public that one can promote the city and the region.

#### **INDUSTRY 4.0 AND TELECOLLABORATION TO PROMOTE COOPERATION NETWORKS: A PILOT SURVEY IN THE PORTUGUESE REGION OF CASTELO BRANCO**

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According to the World Economic Forum, the Fourth Industrial Revolution – also known as Industry 4.0 – is expected to take place before 2020, fostering significant changes in the way people think, live and work. Impending changes will have great impact on people and businesses. Growing digital interconnectivity will promote new business contexts, fostering communication beyond geographical borders and preventing physical constraints. Technological developments will also cause social and economic concerns, since they can create mass unemployment, inequality or talent shortages. In response to these foreseen working modifications, workers must be prepared to communicate digitally in a common language, known as lingua franca, usually English for global digital communications. In such context, local, regional and global communication is normally conducted through digital environments. Thus, as telecollaboration relates to the engagement of geographically dispersed learners in online intercultural exchanges using ICT (information and communications technologies), the potential of such collaborative methodology appears to be particularly promising for the forthcoming Industry 4.0 context, in which over one-third of skills that are considered important in today's workforce will have changed. In order to assess the potential of such collaborative ICT-based learning methodologies to promote digital cooperation networks amongst companies and enterprises, a pilot survey focused on telecollaboration was carried-out in the Portuguese region of Castelo Branco. Preliminary results allowed discussing the advantages of combining such learning methodologies with the digital interconnectivity related to the Industry 4.0 context to develop new strategic avenues of cooperation between regional, national and international.

**THE INFLUENCE OF BUSINESS INTELLIGENCE CAPACITY, NETWORK LEARNING AND INNOVATIVENESS ON STARTUPS PERFORMANCE**

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The aim of this paper is to present a study of the relationship between Business Intelligence characteristics (BIC) and its impact on network learning (NL), innovativeness (INNOV) and performance (PERF) of startups. According to Hoppe (2015) there is less attention directed to intelligence studies in entrepreneurship and we try to make a contribution to this gap.

The paper proposes a model to investigate the direct effects of BI on performance, and the indirect effects, through network learning (NL) and innovativeness (INNOV). The investigation is based on a sample of 228 startups from different European countries. We explore those relationships using Structural Equation modeling. The preliminary results of this study point to positive effects among the different variables and we can conclude that Business Intelligence capacities have an impact on network learning, innovativeness and performance. From these findings, it can be argued that some attention must be made to the business intelligence capacities in startups, given the impact it can have on firm performance.

**ANALYSIS OF THE RESEARCHER'S MOTIVATORS TO COLLABORATE WITH FIRMS AS DRIVERS OF THE TRIPLE HELIX DYNAMICS**

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This paper advances the study of the researcher's motivators to collaborate with firms from a Triple Helix perspective. Based on a conceptual framework that relates the Agency Theory assumptions with those variables that literature considers as motivators of the researchers and firms to collaborate, we worked with a sample of 420 research groups of eight regions of Spain, France and Portugal. First, we studied the determinants of the researchers' interest to collaborate and then, among those researchers who were previously interested, we studied if the determinants of the final engagement in private contracts of science commercialization were the same than the determinants of the researchers' previous interest. Results suggest that the field of science is important in signaling those research groups more interested in collaborating, the research budget is a good motivator of the interest and final engagement of the researchers, previous experience in collaboration increases the future interest of researchers and country also matters.

**EMPIRICAL STUDY ABOUT THE LINKAGE BETWEEN ENTREPRENEURIAL ORIENTATION, INTANGIBLE RESOURCES AND ABSORPTIVE CAPABILITIES TO EXPORT PERFORMANCE: THE ROLE OF COMPETITIVE ADVANTAGE**

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The main goal of this study is to analyse the influence of entrepreneurial orientation, intangible resources and absorptive capabilities on export performance, considering the mediating effect of competitive advantage. Based on survey data from 247 Portuguese small and medium-sized enterprises (SMEs) findings suggest that entrepreneurial orientation has a positive and significant influence on differentiation and export performance. Moreover, the results also highlight the role of intangible resources in the design of both differentiation and cost leadership strategies, which drives export performance. Finally, absorptive capabilities are highly related with export performance. This study deepens our understanding and provides novel insights into entrepreneurship and strategic management literature, since it combines multiple factors and has obtained the importance of each construct in SMEs business growth. Moreover, this paper presents further evidences of the strategies that small firm managers should pursue and policy makers should promote.

**IOT-CARE: A IOT PLATFORM FOR ELDERLY CITIZENS' WELLBEING**

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Population ageing is one of the greatest social and economic challenges facing the EU. Demographic statistics show that elderly are more likely to be living alone in urban areas. Modern cities will therefore face a key challenge – developing new approaches which will allow them to support the autonomy of senior citizens and improve their quality of living. All of these goals will have to be reached on smaller budgets than ever before. In this context, there is a great opportunity to build a cross-domain IoT platform that combines e-health and smart city domains for elderly citizen's wellbeing in urban areas. The IoT-CARE innovative concept presented in this paper will help smart cities to respond to the challenges of an aging population.

**LOW-COMPLEXITY ITERATIVE DETECTION TECHNIQUES FOR QUASI-OPTIMUM UPLINK PERFORMANCE IN A LARGE-SCALE MU-MIMO SYSTEM**

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This paper deals with SC/FDE for uplink transmission within a broadband MU-MIMO system where a large number of BS antennas can be adopted, possibly much larger than the number of transmitter antennas jointly using the same time-frequency resource at mobile terminals. In this



context, we propose low-complexity iterative DF detection techniques which can be an interesting alternative to the usually recommended linear detection techniques. Our performance results, for a range of QAM schemes, are discussed with the help of selected performance bounds, with a special attention being devoted to the impact of an imperfect channel estimation. They confirm that simple linear detection techniques, designed to avoid the need of complex matrix inversions, can lead to unacceptably high error floor levels. However, it is shown that, by combining the use of such simple linear detectors with the appropriate interference cancellation procedures, within the proposed class of iterative DF detection techniques, a non-negligible performance advantage over the somewhat more complex (due to the required matrix inversions) linear MMSE detection technique and a close approximation to the optimum performance can be achieved.

### **THE IMPACT OF SUPPLY CHAIN LEADERSHIP AND FOLLOWERSHIP ON PURCHASING SOCIAL RESPONSIBILITY: AN EMPIRICAL STUDY ABOUT A PORTUGUESE ENERGY SUPPLIER**

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The purpose of the present study is to identify the impact of the supply chain leadership (SCL) and supply chain followership (SCF) on purchasing social responsibility (PSR), considering the moderator role of the supply chain leadership dependency (SCLD). Additionally, we considered the mediator effects of information sharing (IS) and shared values (SV), since these variables contribute to a better understanding of leadership and followership phenomena as key drivers of a sustainable supply chain management (SSCM). This study uses a structured questionnaire to gather data from a cross-sectional sample of 425 supply chain partners from a Portuguese's energy supplier namely EDP - Energias de Portugal. Structural Equation Modelling is used to test the proposed hypotheses, and a multi-group analysis is conducted to find how the EDP suppliers dependency can impact on the suggested relationships. We conclude that SCL has a positive impact on IS, SV and PSR. SCF has a positive impact on IS and SV. IS and SV have a positive impact in PSR. It was also possible to conclude that SCLD moderate all the relations, except the relation between SCL and PCR and the relation between IS and PCR.

**AN APPROACH TO THE ENTREPRENEURIAL UNIVERSITY EDUCATION FROM THE MODEL OF THE ENTREPRENEURIAL ECOSYSTEM. M2E OR MICROECOSYSTEM EMFITUR.**

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There is consensus on which the enterprising initiative is necessary for the progress of the company, this takes place not only in the Academia, but in the areas of the public administrations and in the private agents dedicated to the promotion of the Entrepreneurship. Nevertheless, sometimes it is doubted if the enterprising talent can and must be taught, or, simply, some persons have the enterprising talent, of birth. In many occasions, the Entrepreneurial Education suffers from a rigorous, long-term, systematic exposition and good connected with the agents of the entrepreneurship. This work approaches this topic and its context, offering answers and arguments for the action. Finally, and departing from the Model of Ecosystem, it contributes a royal model of Entrepreneurial University Education (EEU), based on a microcosm or opened system, to which there is named EMFITUR, M2E, developed in a slightly favourable context and with a double dynamic Bottom Up.

**ENTREPRENEURSHIP IN NONPROFIT ORGANIZATIONS: A SYSTEMATIC REVIEW OF THE LITERATURE**

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Nonprofit organizations play an important role in society. However, in this context, we perceive a reduction in donations over time, which causes nonprofit organizations to use new forms of fundraising, entrepreneurship among them. Given the importance of this sector and theme, this study aims to identify, analyze and systematize research on entrepreneurship in nonprofit organizations. For this purpose, a temporal analysis, as well as one for the methodologies used, and the evolution of the last three decades of research on the theme will be the object of this study. We adopted a systematic literature review as research method. We used the ISI web of Knowledge database to collect data, and after the selection process, 25 articles were identified and analyzed. Through the analysis of the results, we perceived that this is a recent topic addressed in the literature, with this review identifying the first research in 1995. Another conclusion is that most studies are of the empirical-quantitative type. Of the three decades analyzed in this study, the last decade (2011-2017) was the one in which the largest number of publications was registered. Finally, we present conclusions, theoretical and practical implications, suggestions for future research and limitations.

## **THE ROLE OF HIGHER EDUCATION IN THE DEVELOPMENT OF STUDENTS' ENTREPRENEURIAL INTENTION**

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The great majority of Higher Education Institution students who attend Education for Entrepreneurship (EE) programs develop new skills related to the subject, and, probably, this will increase their future Entrepreneurial Intent (EI). However, this evidence does not always prove to be important, since more and more studies are carried out to determine if there is a correlation between EE and EI. Based on Ajzen's Theory of Planned Behavior (TPB) model, the objective of this study is to evaluate the impact of an EE program applied to undergraduate students analyzing the role of this as a promoter of EI in first year students. Aiming to test the relationship between the inherent dimensions of the TPB model and EI, among students from first year of undergraduate degree in Languages and Business Relations (LRE). Based on Paço, Ferreira, Raposo, Rodrigues, and Dinis (2011) study a questionnaire was applied in two moments: before and after classes whose content was related to EE. The results show that the TPB model is an adequate analysis tool to evaluate the impact of EE in EI, suggesting a positive influence of EE in students' EI in the early stages of academic learning. It was also verified that it is not only the EE that influences EI; personal, social and behavioral variables also interfere with this decision. The insufficiency of research, relating the importance of EE among first year university students, was the main motivation for the present investigation. Besides, the outputs found reveal an importance of this type of educational programs mainly among students who are not linked to management scientific area.

## **MOBILE PLATFORM MOTION CONTROL SYSTEM BASED ON HUMAN GESTURES**

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Controllers based on human gestures recognition may be a suitable and user friendly solution for the interaction between machines and humans. The academic research on this topic may benefit the industry and the society in general, deserving a proper support from governmental institutions. A challenging field of application of such systems is the control of mobile platforms. Traditional mobile platform controllers may be limitative regarding freedom of movements and are inadequate in some applications. Mobile platforms with four Mecanum wheels allow the improvement of pre-existing solutions, such as wheelchairs or forklifts, endowing them with higher manoeuvrability, but they require a complex motion control because of the wide variety of movements allowed. The control of all possible movements of such a platform cannot be

achieved with a simple joystick or steering wheel. This paper describes a motion control system for a mobile platform with four Mecanum wheels. The system is based on hand tracking and gestures recognition using an Intel RealSense 3D sensor.

## **ENTREPRENEURSHIP AND ENTREPRENEURIAL INTENTIONS IN EUROPE**

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The significant importance of entrepreneurship for the economic development, job creation and innovation have increased the concerns of researchers and decision makers at different levels for the understanding and investigation of the factors that could have an impact on the level of entrepreneurial activity. In fact, differences in entrepreneurial activity and entrepreneurship are substantial, persistent and distinct from their background in different nations and / or regions, especially in Europe. Theoretical studies and empirical studies confirm that the entrepreneurial activities of individuals are the main drivers of the development of entrepreneurship, namely in terms of economic growth, mainly through the contribution to the creation of new jobs, the development of competitiveness and innovations at the enterprise. For this purpose, we used two Global Databases Entrepreneurship Monitor (GEM) of the year 2015, which were duly adapted and thus created the database for the analysis of this study, having as justification performed literature review considered the variables necessary for this purpose. Results reveal that the key determinants of the entrepreneurial intention in the European countries are: “perceived capacity” by the individual; the “entrepreneurial intention” itself which will, in fact, influence the “rate of nascent entrepreneurship”; the “governmental and political factors” in relation to the respective “financing for the entrepreneur”, and the “basic education and training” in entrepreneurship which influence “research & development”.

## **CORPORATE REPUTATION CORRELATION AS A STRATEGIC MARKETING TOOL IN SERVICE DESIGN MANAGEMENT**

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This paper focused on the scope of the Design Management as a differentiating agent in the use of resources of the design and its interaction with the strategies and goals of a Service Sector, particularly in Higher Education Institutions (HEI). Currently the Reputation of HEI represents an intangible capital and a valuable asset and is recognized an important role in the differentiation and competitive advantage (Ruão, 2008). This competitive environment together with limitations of public resources for Higher Education makes the image an essential part of the strategic management of HEI (Luque-Martinez & Del Barrio Garcia, 2009). Conducting a

diagnostic study is essential for building a sustained reputation. Very strong and positive correlations were obtained in most of the Corporate Character Scale dimensions, which reflects that these are very important when IPB's strong and sustained reputation. However, the presence of strong and positive relationships in dimensions such as ruthlessness, informality and machismo reflect the need to pay more attention to these characteristics in order to contribute to the overall satisfaction of the image perceived by the IPB Community. This paper aims to show that one of the ways to create new communication strategies can be through correlational analysis as a strategic marketing tool in Service Design Management in order to add value to the services, increasing their corporate reputation.

### **BUSINESS INCUBATORS: SOME INSIGHTS FROM THREE CASE STUDIES**

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The ever-increasing competitive business world in which firms operate nowadays and the need to have a change in the type of economic growth of countries, has led several countries to adopt measures or instruments that give them a competitive advantage and delivery growth based on entrepreneurship and innovation. One of the mostly used instruments are business incubators, which aim to support the development of new business ideas which the incubators help to survive and grow during their initial stages. Given the relevance of this topic and the fact that it remains a relatively under researched topic in Portugal, the objective of this article was to analyze the incubation process of new businesses ideas in three Portuguese business incubators (a regional incubator, an independent commercial incubator and a university incubator), contributing to a broader knowledge about this subject. The main findings of the paper are the following: the three incubators are focused on stimulating entrepreneurship, new business ideas and innovation, and are concerned in being a facilitator agent of the success of those new projects; however, some differences might be seen among these incubators, namely in terms of criteria used to select the new business ideas or projects, the support services provided to the incubatees, the incubation period, and the type of projects supported.

### **FINANCIAL REALITY IN THE EUROPEAN UNION FARMS: RELATIONSHIPS WITH THE FARMS-GOVERNMENT INTERACTIONS WITHIN THE TRIPLE HELIX CONCEPT**

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The structural and organizational realities among the several farms of the European Union countries are significantly different and this has consequences in the financial contexts. The objective of this study is to investigate the financial realities of the agricultural sector in the

European Union countries, at farm level, and their relationships with the frameworks in terms of farming investments and public structural subsidies (farms-government relationships as part of the Triple Helix perspective). In a first step was analysed the statistical information available in the Farm Accountancy Data Network for the former twenty seven European Union countries, about the several items of the accounting balance sheet. For that were built balance sheets for the farms of the several countries. In a second phase were calculated various financial indicators to investigate the main financial constraints in these farms and finally was related these findings with the levels of investment and structural supports. As main conclusions, of referring that will be needed more adjusted structural policies in the European Union, taking into account these microeconomic realities.