



**JOÃO MANUEL  
LOPES DE ALMEIDA**

**O PAPEL DA ORIENTAÇÃO PARA O MERCADO E  
ORIENTAÇÃO EMPREENDEDORA NO  
DESEMPENHO DAS JÚNIOR EMPRESAS**

**THE ROLE OF MARKET ORIENTATION AND  
ENTREPRENEURIAL ORIENTATION ON THE  
PERFORMANCE OF JUNIOR ENTERPRISES**





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Dissertação apresentada à Universidade de Aveiro para cumprimento dos requisitos necessários à obtenção do grau de Mestre em Gestão, realizada sob a orientação científica da Doutora Ana Isabel Dias Daniel, Investigadora Auxiliar do Departamento de Economia, Gestão, Engenharia Industrial e Turismo da Universidade de Aveiro

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Aos meus pais por todo o seu esforço, força e exemplo.



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**palavras-chave**

Orientação empreendedora, orientação para mercado, empreendedorismo, desempenho, júnior empresa

**resumo**

Este estudo explora a orientação para o mercado (MO), a orientação empreendedora (EO) e as suas relações com o desempenho das Júnior Empresas (JEs). Utilizando uma amostra de 93 Júnior Empresas, foi testada a adequação das escalas MO e EO propostas por Kohli, Jaworski, and Kumar (1993) e Hughes and Morgan (2007) respetivamente, tendo sido criadas novas dimensões e escalas que melhor se adequam às características das JEs. Com estas novas dimensões, foi testado o efeito de MO e EO no desempenho das JEs e o efeito mediador de EO na relação entre MO e desempenho. Os resultados sugerem que tanto as dimensões de MO e como de EO têm um impacto positivo no desempenho das JEs e que as dimensões de EO mediam, parcial ou totalmente, a ligação entre as dimensões de MO e o desempenho. Este estudo oferece um entendimento mais detalhado das características das JEs e o impacto das orientações estratégicas no seu desempenho, fornecendo por um lado implicações para a investigação pela análise destes constructos num novo contexto e pela análise de EO como mediador, algo pouco discutido na literatura. Por outro lado, implicações para as JEs e federações nacionais e internacionais que podem assim adaptar as suas estratégias e planos de formação tendo em conta estes tópicos, bem como para as universidades que podem perceber melhor o contexto e potencial das JEs e assim apoiar estas mais eficazmente.



**keywords**

Entrepreneurial orientation, market orientation, entrepreneurship, performance, junior enterprise

**abstract**

This study explores the market orientation (MO), entrepreneurial orientation (EO) and its relationship with the performance of Junior Enterprises (JEs). Using a sample of 93 Junior Enterprises, we tested the suitability of the MO and EO scales proposed by Kohli, Jaworski, and Kumar (1993) and Hughes and Morgan (2007) respectively, and new dimensions and scales were created that better fit JEs characteristics. With these new dimensions, we tested the effect of MO and EO on performance and the mediating effect of EO between MO and performance. Results suggest that both MO and EO dimensions have a positive impact on JEs' performance and that EO dimensions partially or totally mediate the link between MO dimensions and performance. The study provides a more detailed understanding of JEs organizational characteristics and the impact of strategic orientations in their performance, providing, on the one hand, implications for research through the analysis of these constructs in a new context and through the analysis of EO as mediator. On the other hand, implications for JEs and national/international federations that can adapt their strategies and training plans bearing in mind these topics, as well as for universities that can better understand the context and potential of JEs and thus support them more effectively.



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## List of Acronyms

<b>CF</b>	Competitive Focus
<b>CP</b>	Customer Performance
<b>DP</b>	Development Performance
<b>EB</b>	Entrepreneurial Behaviour
<b>EO</b>	Entrepreneurial Orientation
<b>EP</b>	Economic Performance
<b>IDMI</b>	Interdepartmental Dissemination of Market Information
<b>JA</b>	Job Autonomy
<b>JE(s)</b>	Junior Enterprise(s)
<b>JEGC</b>	Junior Enterprise Global Council
<b>JI(s)</b>	Junior Initiative(s)
<b>KMO</b>	Kaiser-Meyer and Olkin
<b>MO</b>	Market Orientation
<b>MV</b>	Market Vigilance
<b>NPO(s)</b>	Non-Profit Organization(s)
<b>OECD</b>	Organization for Economic Co-operation and Development
<b>PCA</b>	Principal Component Analysis
<b>RMC</b>	Reactiveness to Market Changes
<b>SDG(s)</b>	Sustainable Development Goals(s)
<b>SE(s)</b>	Social Enterprise(s)
<b>SME(s)</b>	Small and Medium Enterprise(s)
<b>UNESCO</b>	United Nations Educational, Scientific and Cultural Organization

## Introduction

Strategic orientations are regarded as “principles that directly influence the activities of a firm and generate the behaviours intended to ensure its viability and performance” (Hakala, 2011, p. 199). Two of the most studied strategic orientations are market orientation (MO) and entrepreneurial orientation (EO), due to their already established impact in organizations’ performance (Ellis, 2006; Hakala, 2011; Rauch, Wiklund, Lumpkin, & Frese, 2009).

MO is defined as the “persistent search for market opportunities and the development of congruent response strategies that enable firms to optimise their performance” (González-Benito, González-Benito, & Munoz-Gallego, 2009, p. 501), and EO is a strategic orientation that captures specifically entrepreneurial aspects of organizations’ strategies (Hakala, 2011; Lumpkin & Dess, 1996), being better prepared to adjust their operations in dynamic competitive environments (Covin & Slevin, 1989). Despite these orientations being widely reported in the literature, there is still a debate related to their nature, dimensionality and measurement, with many researchers suggesting that new research approaches should be proposed in particular contexts (George & Marino, 2011; Wales, 2016).

This research will study the context of Junior Enterprises (JEs). A JE is a non-profit organization created and managed exclusively by university students, which provides services for companies, institutions and society, under the guidance of teachers and professionals. The main aim is to consolidate and enhance the learning and business experience of their members. JEs are similar to real companies, respecting the principles of corporate governance like a management council, executive board, and own regulation (JADE, 2017a).

Despite the research carried out around JEs being very scarce, the few studies that exist found that the JE experience provide to students practical experiences (to integrate their academic knowledge), early contact with the business world (helping them in the construction of professional networks that will be useful in their future), development of entrepreneurial and managerial skills, improving their employability and fostering their entrepreneurial spirit (Bogo, Henning, Schmitt, & Marco, 2014; Gruber-Muecke & Kailer, 2011; Pennarola, Pistilli, & Dawson, 2016). However, there are no studies published exploring the organizational characteristics of a JE. This lack of research leads to a lack of understanding of how JEs operate and how their performance can be improved.

In a more connected, competitive and uncertain environment, organizations need to redefine and reinforce their position in order to attain a better and sustainable performance (González-Benito et al., 2009; Miles & Arnold, 1991; Sciascia, Naldi, & Hunter, 2006), and despite JEs’ main goal being the development of their students, those companies need to implement strategies to improve its performance in order to be able to fulfil its mission. Therefore, understanding JEs strategic orientations is crucial to promote its success, similarly to what happens in enterprises or other organizations.

Organizations' performance is usually dependent on their MO (Mahmoud & Yusif, 2012; Sciascia et al., 2006; Slater & Narver, 1995) and EO (Chen & Hsu, 2013; Lumpkin & Dess, 1996; Sciascia et al., 2006). Although in the case of JEs it is unclear which factors have an impact on their performance, we follow this rationale, analysing EO and MO on JEs.

Despite MO and EO are widely reported in the literature (Ellis, 2006; Gupta, Atav, & Dutta, 2017; Wales, Gupta, & Mousa, 2013), these constructs were never assessed in JEs or similar organizations, which highlight the need to develop adequate measurement instruments to assess MO and EO in the case of this type of organizations.

Based on these assumptions, this study aims to promote an in-depth knowledge of JEs' organizational characteristics and strategic orientations through the assessment of their EO and MO and their impact on performance, seeking to identify practical implications for JEs to improve their processes and practices, so they can improve their educational, economic and social impact. In addition, through these analyses, we aim to contribute for literature on MO and EO adapting previous measurement instruments to a new context and testing its applicability.

Given the goals of this research, the main question that we aim to answer is the following:

**What is the relationship between market orientation, entrepreneurial orientation and performance in the case of Junior Enterprises?**

This dissertation proceeds as follows. Chapter one presents a brief discussion of the concept of JE, its development and impact, and the literature review of MO, EO and performance. Afterwards, in chapter two we explore the relationships between these constructs, developing hypotheses based in the literature. A final conceptual model based on these hypotheses is proposed. The third chapter overviews the methodology used in this study, concerning the sample, the survey development and the statistical procedures used. The following chapter presents our analysis and discusses its interpretation. Finally, we derive some conclusions, highlighting implications for JEs and for universities, limitations of the study and directions for further research.

# 1. Literature Review

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## 1.1. Junior Enterprises

### 1.1.1. The concept

A Junior Enterprise (JE) is a non-profit civil society organization, formed and managed exclusively by university students, which provides services for companies, institutions and society, under the guidance of teachers and industry professionals. The main goal is to consolidate and enhance the learning of their members. JEs are similar to real companies, ruled by principles of corporate governance as a management council, executive board and own regulation (JADE, 2017b).

Therefore, JEs aim at fostering the entrepreneurial spirit, through the professional and personal development of their members, and the development of JEs national network (Junior Enterprise Global Council, 2018c). According to JADE (2017a), the main goals of a JE are:

- to encourage a business-education approach: the theoretical knowledge learned in classes is put into practice, through projects addressing complex business challenges;
- to promote learning-by-doing philosophy: students learn how to manage and strategically develop a company by working in their JE;
- to foster the entrepreneurial spirit: JEs are a lab to develop entrepreneurial skills, such as the ability to recognize opportunities, and to plan, implement and get results;
- to enhance employability: JE experience enhances students' employability;
- to create social and economic impact: JEs engage in activities that foster the growth of local SMEs and the creation of new businesses, impacting the society through delivering high-quality projects and talent to the market and through the development of active citizens and future world change makers.



Figure 1 - The goals of a JE (JADE, 2017b).

### 1.1.2. History of the Junior Enterprise Network

The first JE (*Junior ESSEC Conseil - L'Ecole Supérieure des Sciences Economiques et Commerciales*) was founded 51 years ago, in 1967, in France, by an ESSEC student who wanted to create a professional student-led organization (Junior ESSEC, 2018). After that, universities all over France start replicating Junior ESSEC, and, in 1969, it was founded the first national confederation CNJE, the French Confederation of JEs. In the following years, the JE network expanded across Europe, starting in Switzerland (1983), Spain (1984), Germany (1986), The

Netherlands (1987), Italy (1988), Austria (1989), Portugal (1990) and Belgium (1991). In 1988 was created the first JE outside Europe (in Brazil), and a few years later the movement reaches Cameroon (1995) and Morocco (1998).

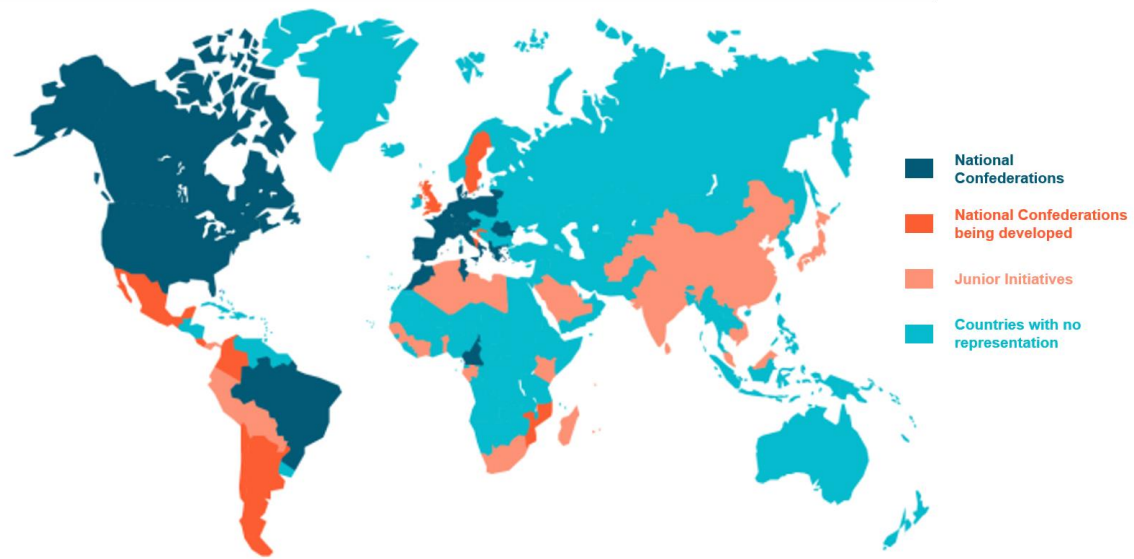
An important step for the JE network was taken in 1992 with the creation of the European Confederation of Junior Enterprises (JADE), which aimed at connecting all the existing national confederations of JEs in Europe. The founding country members were The Netherlands, France, Portugal, Italy and Switzerland. Based in Brussels, JADE works closely with European Institutions, and with international organisations, such as UNESCO, OECD, World Bank, to promote entrepreneurship education, youth entrepreneurship and the main goals of JEs network. Together with Brazil Junior, the Brazilian Confederation of JEs founded in 2003, JADE has been boosting up the JE concept across the world. In 2004, it was organized the first Junior Enterprise World Conference (JEWEC) and, since then, the connection between JEs and confederations from different countries around the world had increased leading to the creation of the Junior Enterprise Global Council in the JEWEC 2016, to be a collaboration platform to strengthen the JE Global Network (Junior Enterprise Global Council, 2018d).

### 1.1.3. The Junior Enterprise Network nowadays

The JE network is present in more than 500 universities in 40 countries, accounting more than 990 JEs and 50000 students enrolled (Junior Enterprise Global Council, 2018a). The concept is well rooted in Europe, where exist 334 JEs (33.74%) with more than 29000 students enrolled (58%) in 14 countries (Portugal, Spain, Italy, France, United Kingdom, Poland, Germany, Croatia, Sweden, Belgium, Switzerland, Austria, The Netherlands and Norway). In the case of Brazil, there are 601 JEs (60.71%) with more than 20000 students enrolled (40%). Also, the network has less, but still significant, presence in other countries, such as Canada, Tunisia, Morocco, United States of America or Cameroon. **Annexe I** present a table with the number of JEs per country.

The Global Network, composed by 18 confederations of 16 countries, is represented by the Junior Enterprise Global Council which handles the growth and development of national confederations, and whose mission is “to strengthen the JE Global Network towards boosting educational, economical and collaborative impact” (Junior Enterprise Global Council, 2018d).

**Figure 2** presents the JE Global Network highlighting the countries that have national confederations, national confederations being developed and countries with only Junior Initiatives, which are formal or informal groups of students that share the intention of creating a JE, following the process and under the guidance of a JEs' Confederation.

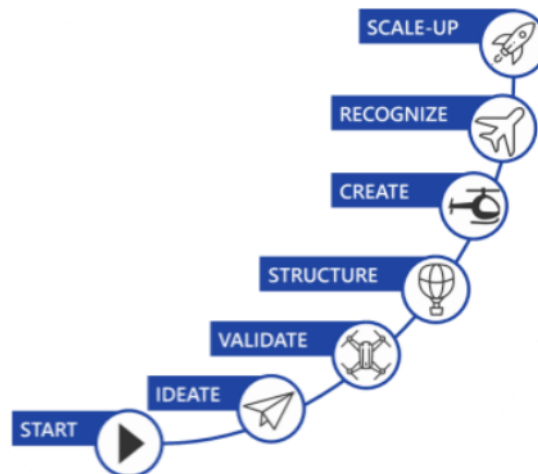


**Figure 2 - JE Global Network** (Junior Enterprise Global Council, 2018a)

#### 1.1.4. Creation and development of a Junior Enterprise

To create a JE, the organization or group of students has to follow the process proposed by the international rules and the JEs' national confederation. Until the conclusion of the process, this initiative is designated a Junior Initiative (JI) (JADE, 2018c).

To guide the process of creation and development of a JI and recognition as JE, JADE and the JEGC created the "JE International Maturity Model framework" in 2018 (JADE, 2018c), a 7-step development program to create a JE (**Figure 3**).



**Figure 3 - JE Maturity Model** (JADE, 2018c)

This process comprises the following steps:

*Step #1: Start* - The main goals of this step are to gain a deep knowledge about the JE Movement at both national and international levels, its history, characteristics and purpose, as well as to design a roadmap with clear goals, tasks and deadlines for the development of the JI.

*Step #2: Ideate* - The focus of this step is to create an initial business model canvas and value proposition that define the JI business guidelines. To do this, the team need to run a market research and define an initial portfolio of services based on their members' skills and knowledge.

*Step #3: Validate* - In this step, the JI must develop its corporate visual identity and present the organization to key stakeholders (teachers, potential clients and partners, local institutions, students' associations, etc.), to build a strong local network.

*Step #4: Structure* - In step 4, the JI should define the institutional documents that will govern the future JE as an organization, establishing the JI as a non-profit association, granting it legal personality and completing the main processes and requirements imposed by the law.

*Step #5: Create* – The JI must now focus on defining and implementing internal processes, such as human resources management, project and quality management, commercial procedures, knowledge management, marketing and communication strategy, as well as defining its departments and responsibilities and building their first strategic goals.

*Step #6: Recognize* – The JI should get in touch with other JEs and with the national confederation following the membership procedures to be recognized as JE in its national network and consequently at the international level.

*Step #7: Scale-up* – After gaining the status of JE and joining the JE network, it is time for the organization to grow internally (recruiting more people and growing in projects and clients) and externally (in the local community and in the JE national and international network).

After this development program, the students start working both internally and externally. JEs' work is very similar to "real" companies. Those enterprises have an executive board and are organized in departments, being the most common departments: human resources, finances, sales and marketing, projects and technology. JEs normally focus their business activity in consulting services or technological development providing a range of services in accordance to their core business and to the academic background of their members (as an example, some services provided by JEs include business plans, market analysis, design and communication, events' organization, etc.).

JEs have a clear and strong project and quality management processes to ensure the quality of the services provided. Normally there is a project leader in each project that is supervised by the executive board or the department director. It is also common that JEs have the support of a board of professors and/or a board of alumni that help the enterprise in its internal and external development.



### 1.1.5. Junior Enterprises' Impact

According to JADE, Brazil Junior and JEGC, the purpose of the JE network is “to empower, through the JE concept students capable and committed to generating a relevant impact” (JADE, 2017b). This impact is generated at three levels: in the academia (educational impact), in the business world (economic impact) and in society (global impact).

Regarding the impact in the academia (educational impact), JEs position themselves as the best way to complement the development of entrepreneurial skills in higher education students. Those organizations provide an adequate setting for students to gain practical experience and apply what they have learnt in classes (Costa & Saraiva, 2012). Also, in higher education institutions, JEs can create a positive impact by involving professors and enabling companies to benefit from the creativity and dynamism of higher education students (Costa & Saraiva, 2012).

JEs educational impact has also been recognised over the last years. Those are recognised as an example of best practice in practical education being highlighted on the *Lisbon Strategy: governing strategy of EU in 2000-2010*, and also included in the *EU strategy for 2010-2020 as a key priority for Education and Youth Framework of this strategy* - “support young people’s entrepreneurship inter alia via entrepreneurship education, support to ‘start-up’ funds, mentoring programmes, and encourage recognition of junior enterprise” (Council of the European Union, 2009). Also, many policy-makers and business leaders publicly recognize this impact (JADE, 2016a, 2016b). For instance, the President of the European Commission, Jean-Claude Juncker, stated that “by helping young people to develop both technical competences and soft skills, [Junior Enterprises] are nurturing the next generations of entrepreneurs (...) building a vital partnership between higher education and the world of work, ensuring that teaching and learning adapt to our fast-changing economy” (JADE, 2016b). Additionally, Tibor Navracsis (Commissioner for Education, Culture, Youth and Sport) stated that “bridging the gap between education and the labour market and fostering an entrepreneurial mindset is vital – for policy-makers as well as for business and civil society (...) through their [Junior Enterprises] daily activity, they support young people in developing valuable skills, boosting their entrepreneurial spirit and ensuring a smooth transition to the job market” (JADE, 2016a).

In a study carried out by the European Commission in 2012 (European Commission, 2012) it was observed that 78% of JADE Alumni found a job right after graduation compared to 66% of other students that have taken entrepreneurial education courses, and to 59% of students who have not received any kind of entrepreneurship education. Also, Gruber-Muecke and Kailer's (2011) study on 980 former and active JE members report that the activities carried out in JEs affect the creation of an entrepreneurial identity and are linked to entrepreneurial behavioural of JE members. These and other internal reports carried by JADE or countries confederations (JADE, 2018b; JADE Portugal, 2017) confirm this impact on the development of entrepreneurial and managerial skills, entrepreneurial intention and employability among students that participate in JEs.

JEs' impact in the business world is twofold: through delivering high-quality projects to the market and through providing talent to the business world. Firstly, the number of projects and the turnover of JE network are increasing over the last years. In 2017, the JE network provided more than 16600 projects to external stakeholders with a total turnover of more than 18.5 million euros (Junior Enterprise Global Council, 2018a). Half of this projects were contracted to SMEs, 20% to individual entrepreneurs, and the remaining 30% to other types of organizations. SMEs and individual entrepreneurs are considered the backbone of the economy in many developed (Eurostat, 2018) and developing economies (Wang, 2016). To the European Commission, SMEs and entrepreneurship are a "key to ensuring economic growth, innovation, job creation, and social integration in the EU" (Eurostat, 2018). However, the great majority of SMEs and new start-ups face many difficulties in their growth process due to the lack of financial and human resources (OECD, 1997). These facts reinforce the impact of JEs in the business environment because they offer accessible consultancy services mainly to SMEs and individual entrepreneurs, helping them in both internal and external growth of their business (Junior Enterprise Global Council, 2018a). Secondly, in a study promoted by the European Commission (European Commission, 2012) it was assessed the impact of participating in a JE and the likelihood of starting a new business. The results had shown that 25% of JADE Alumni are (very) likely to start their own business within the next ten years, compared to 16% of other students that were enrolled in informal entrepreneurial education courses and to 10% of students that had not received any kind of entrepreneurship education. These results highlight that students who were enrolled in JEs can bring dynamism and innovation to the market by creating a new business or by bringing entrepreneurial practices to companies they became part of.

Regarding the impact in the society (global impact), Myltos Kyrkos (Member of the European Parliament) stated that JEs "fit perfectly the ideal definition of a contemporary start-up: rather than only profit-seeking, they are building causes" (JADE, 2018a).

One direct impact of JEs in society is through providing pro-bono services for many non-profit organizations and thus helping those organizations in implementing their social mission. Many JEs have clear strategies in social responsibility since both national and international confederations of JEs encourage this dimension in JEs activity (through social responsibility training, events, awards, etc.). An example of a socially responsible project is the winner of the Most Socially Responsible Project 2018 in the JADE Excellence Awards - Junior Enterprise Genève (Switzerland) – that created a Legal Council, a non-profit law office exclusively formed by students, to provide legal advice to other students, refugees and young entrepreneurs (JADE, 2018a).

Another important impact in the society is the development of active citizens and future changemakers. For instance, JEs' may impact on the achievement of the Sustainable Development Goals (SDGs). The SDGs are "the blueprint to achieve a better and more sustainable future for all", addressing current global challenges (poverty, inequality, climate, environmental degradation, prosperity, and peace and justice) (United Nations, 2018a). Bearing in mind the educational and

economic impact of JEs, those organizations can contribute, at least, to two of the seventeen goals – Quality Education (SDG4) and Decent Work and Economic Growth (SDG8).

The SDG 8 (Decent Work and Economic Growth) aim at promoting inclusive and sustainable economic growth, employment and decent work for all having as targets: to achieve higher levels of economic productivity through diversification and tech development; to promote development-oriented policies that support job creation, entrepreneurship, creativity and innovation, and encourage the formalization and growth of micro- and SMEs; to implement policies that reduce the proportion of youth not in employment, education or training; among other things (United Nations, 2018b).

Within this goal, the JE network can have an important contribution through delivering affordable high-quality services to individual entrepreneurs and SMEs which foster their productivity and growth and consequently impacting the local economic development. The JE network also enables students to acquire the knowledge and business experience which is relevant to overcome the skills and experience gap that many companies identify as a weakness in youth people higher education training, contributing in this way for the reduction of youth unemployment. Also, through promoting the development of students' entrepreneurial mindset, JEs contribute to the creation of new businesses and innovative solutions.

SDG 4 (Quality Education) aims to ensure inclusive and equitable quality education and to promote lifelong learning opportunities for all, being considered one of the most important goals. Despite the relevance of all goals and its interconnectedness (United Nations, 2018a), SDG 4 has been recognized as an integral element and a key enabler for sustainable development, highly influencing all the other goals (UN Division for Sustainable Development Goals, 2018; Vladimirova & Blanc, 2015). For example, by the end of 2030 it is expected to increase the number of youth and adults who have relevant skills (technical and vocational), for employment, decent jobs and entrepreneurship; and that all learners acquire the knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development and sustainable lifestyles (UN Division for Sustainable Development Goals, 2018).

Within this key goal, the JE network can play an important role, complementing formal education with learning-by-doing and business-education approaches, boosting students' technical, social and entrepreneurial skills. By the close and early contact with the business local community, JEs challenge young students to go further and to think innovatively to answer today's world challenges towards a better future and sustainable societies (JADE, 2017a).

#### **1.1.6. The future of the Junior Enterprise Network**

The JE network has been growing in the last years. On the one hand, the movement is taking its first steps into new countries, with several JIs being created in South America (Argentina, Bolivia, Chile, Colombia, Costa Rica, Ecuador, Mexico and Peru), in Africa (Benin, Mozambique, South Africa, Senegal, Saudi Arabia and Kenya) and in Asia (China, Vietnam, Malaysia and India). On the

other hand, the movement has become more consolidated in the countries where the JE concept is already present. According to the last Global Report (Junior Enterprise Global Council, 2018a), there are more than 1450 JIs around the world, which represents a huge growth potential of the JE Network. The Junior Enterprise Global Council (2018b) estimates that the JE Network will be present in 70 countries by the end of 2021. JADE's (2018a) Network Strategy 2018-2021 estimates that there will be 170 new JEs in 21 European countries, and in the case of Brasil Júnior's (2018) Network Strategy, it estimates a growth to 2000 JEs by the end of 2021. Therefore, it is estimated that by the end of 2021 there will be more than 100000 students participating in JEs only in Europe and Brazil.

These are ambitious but realistic numbers not only due to the growth of JE Network in the last years but also because entrepreneurial education and skills development are becoming a priority in higher education institutes. Thus, universities' interest and support to initiatives that complement students' curricula (as JEs) are growing (European Commission, 2012).

## **1.2. Why is it important to study Junior Enterprises?**

As seen before, the impact of JEs in students, in the economy and society is widely recognised. However, the research carried out around JEs is scarce. Only eight articles were found in the database *Scopus*, using the keyword "Junior Enterprises" and "Junior Enterprise" (**Table 1**). One article is a conference paper of the *2016 International Conference on Information Systems* (Pennarola et al., 2016), another one is a book chapter of the book *Human Resource Management in Consulting Firms* (Günther, Harms, Schilling, & Schneider, 2006) and the remaining articles are published in scientific journals such as *Journal of Business Research*; *Revista Ibérica de Sistemas e Tecnologias de Informação*; *Organization*; *Gestão e Produção*; and *Perspectivas em Ciência da Informação*.

Some of these studies focused on JEs' impact on students' skills and competences or on the university itself. Those studies concluded that activities carried out in JEs enable its members to gain practical experiences (to integrate academic knowledge), early contact with the business world (helping them in the construction of professional networks that will be useful in their future)(Costa & Saraiva, 2012), develop their entrepreneurial and managerial skills (Gruber-Muecke & Kailer, 2011), improving their employability (Pennarola et al., 2016) and fostering their entrepreneurial spirit (Costa & Saraiva, 2012; Gruber-Muecke & Kailer, 2011).

One study describes the process of creating a JE within a science and technology undergraduate course (Colette & Silva, 2014). Another one described the human resources management processes of a JE, and its main differences to real consulting companies (Günther et al., 2006). Costa and Saraiva (2012) interviewed students and tutors of six JEs to understand their entrepreneurial discourse through a qualitative analysis. Costal, Turrioni and Martins's (2013) study did not focus on JEs, however, it used Brazilian JE in a field experiment to validate the prototype of

a process that computerizes the documentation of a quality management system. Finally, Michaelis, Wagner and Schweizer's (2015) study was the only one focusing on what impact JEs' performance. It surveys 69 JE's Presidents and founded that high-performance work systems positively impact JEs' workforce productivity via employee exchange and the combination of knowledge. **Table 1** presents a summary of the research questions, data, methodology, variables and main findings of these articles.

Analysing these studies, we conclude that are no studies published exploring the organizational behaviours and strategies of a JE and only one measuring the impact of a variable in JEs' performance. This lack of research leads to a lack of understanding of how JEs operate and how their performance can be improved and, in the end, how this impact on JE's participants' development can be enhanced. Therefore, this study aims to promote a better understanding of JEs organizational characteristics and their impact on performance, suggesting practical implications for JEs to improve their most relevant processes and capabilities in order to improve their educational, economic and global impact.

**Table 1** - Articles found about Junior Enterprises on the database *Scopus*.

Article	Research questions	Data	Method	Variables	Findings
<b>(Michaelis et al., 2015)</b>	Develop and test a theoretical model linking high-performance work systems (HPWS) and workforce productivity via employee exchange and the combination of knowledge.	Survey to 96 German JEs' Presidents. Response rate 72%.	Regression	(1) HPMS; (2) Knowledge Exchange and Combination; (3) Knowledge Management Effectiveness; (4) Workforce Productivity.	(1) HPMS relate directly to knowledge exchange and combination among employees; (2) Knowledge exchange and combination mediates the HPWS influence on workforce productivity; (3) HPWS positively impacts work-force productivity; (4) Knowledge-management effectiveness emerges as an intra-organizational boundary condition for knowledge exchange and combination to impact workforce productivity.
<b>(Gruber-Muecke &amp; Kailer, 2011)</b>	How does work experience from a developmental network influence the linkage between entrepreneurial competences and the formation of an entrepreneurial identity?	Survey to 20000 active/former JE members. Response rate 5%. 587 active and 393 former JE Members.	Regression	(1) Developmental Networks activities; (2) Cognitive competences; (3) Behavioural competences.	Activities carried out in JEs impact competences and entrepreneurial identity.
<b>(Pennarola et al., 2016)</b>	(1) Does the enrolment in a JE enhance, other things being equal, the likelihood of being hired as a consultant? (2) What impacts do strong IT skills have on obtaining a JE affiliation and subsequently obtaining a career in consulting? (3) What moderates the impact of strong IT skills on obtaining a JE affiliation and subsequently obtaining a career in consulting?	Analysis of 768 LinkedIn profiles (384 former JE members and 384 non-JE members).	CV analysis and Regression	(1) Obtaining a job in consulting; (2) IT skills; (3) Participation in a JE; (4) Control Variables (Gender, French Nationality, Social Scientist, Internship, Student Employment, Managerial Role).	(1) IT skills are positively correlated to individual probability of becoming a consultant; (2) Gender, undergraduate major and JE experience moderate the relation between IT skills and the probability of becoming a consultant.

Article	Research questions	Data	Method	Variables	Findings
<b>(Costa &amp; Saraiva, 2012)</b>	Identify which orders of discourse emerge from the entrepreneurial discourse of these Brazilian JEs	60 interviews with students and tutors of 6 Brazilian JEs	Qualitative	Understanding the experiences, beliefs, values and behaviours in the specific social contexts of the respondents	Identification of three orders of discourse: (1) a consensus regarding the centrality of companies in terms of thinking and acting of a given individual in the world; (2) the exemplarity of the neoliberal capitalist entrepreneurial model and (3) the absence of feasible alternatives for the contemporary capitalism model.
<b>(Brum &amp; Barbos, 2009)</b>	(1) Determine the JE's participants profile; (2) Analyse the different information sources used by JE's participants and evaluate and their relevance and reliability; (3) Analyse how JE's participants use the information to perform their tasks in the JE.	Survey to 460 JE's participants. Response rate 58.7%.	Percentage	(1) Type of information sources; (2) Frequency of use.	(1) the most used information sources are personal sources (either through the internet or direct contacts; (2) the most reliable information sources are the books and the teachers; (3) JE's participants use predetermined information sources mainly for learning and sharing the information with other people.
<b>(Günther et al., 2006)</b>	Analyse the Human Resources Management (HRM) processes	Case Study Analysis to German JEs	Qualitative	(1) Internal HRM (staff marketing, selection of personnel, staff commitment, staff development, leaving the JE); (2) Conceptual works of JEs (selection of personnel, staff bonding, advanced training and concept for alumni).	High turnover of JE's members require systematic and creative approaches in HRM
<b>(Colette &amp; Silva, 2014)</b>	To create ways to support entrepreneurial initiatives of the students related to the field of training	Survey on 634 students of four different study fields. Response rate 30%.	Action Research	_____	(1) The Action Research methodology and the instruments adopted in the project contributed to the validation of the ideas and to the empowerment of their authors; (2) Creation of a JE.
<b>(Costal et al., 2013)</b>	To develop a software that will be an alternative for computerizing the documentation of quality management systems.	Expert panel analysis; A field test on a JE	Qualitative	_____	The software was successfully implemented in the JE, complying the minimum requirements for the quality management systems used.

### 1.3. Market Orientation

Market orientation (MO) is one of the most researched topics in marketing literature and it relates to the adoption and implementation of the marketing concept as a business strategy to create superior performance (González-Benito et al., 2009; Kohli & Jaworski, 1990; Narver & Slater, 1990). A market-oriented organization is characterized by its focus on market needs and opportunities and its capacity to accumulate market information and to respond effectively, which has many positive consequences for the organization, such as, improved profitability (Narver & Slater, 1990), job satisfaction and commitment of employees, customer satisfaction and retention and business performance (Kohli & Jaworski, 1990). This has led to an increasing interest of managers and researchers in this topic, as reported on Gupta, Atav and Dutta's (2017) review.

The conceptualisation of MO has been dominated by two approaches based on two different perspectives (González-Benito et al., 2009; Sciascia et al., 2006): Kohli and Jaworski's (1990) that focuses on a behavioural perspective, and Narver and Slater's (1990), which is based on a cultural perspective.

On the one hand, Kohli and Jaworski (1990) conclude that a "market-oriented organization is one in which the three pillars of the marketing concept (customer focus, coordinated marketing, profitability) are operationally manifest" (Kohli & Jaworski, 1990, p. 3). *Customer focus* involves getting information from customers' needs and preferences, to take actions based on market intelligence. Then, the second pillar (*coordinated marketing*) reflects the need for coordination related to marketing intelligence to facilitate the operationalization of a market-oriented strategy. Finally, *profitability* is seen as a consequent of MO and not part of it (Kohli & Jaworski, 1990).

By deepening the first two pillars, Kohli and Jaworski (1990) define MO as the "organization-wide generation of market intelligence pertaining to current and future customer needs, dissemination of the intelligence across departments, and organization-wide responsiveness to it" (Kohli & Jaworski, 1990, p. 6) measuring MO with three constructs: intelligence generation, intelligence dissemination and responsiveness (Kohli et al., 1993). According to Kohli and Jaworski (1990) the starting point of MO is market intelligence, so the first construct is *intelligence generation* that "refers to the collection and assessment of both customer needs/preferences and the forces that influence the development and refinement of those needs" (Kohli et al., 1993, p. 468). Linked to this construct, *intelligence dissemination* is the process of exchange market information within an organization (Kohli et al., 1993). The third construct is *responsiveness* to market intelligence, that involves taking actions based on the intelligence generated and disseminated, that include selecting target markets, positioning products/services, distributing and promoting them, etc. (Kohli & Jaworski, 1990).

In contrast, taking a cultural perspective, Narver and Slater (1990) proposed a MO conceptualisation that emphasis on profit and long-term focus (González-Benito et al., 2009) which is defined as the organizational culture and behaviours aiming to create superior value for buyers,

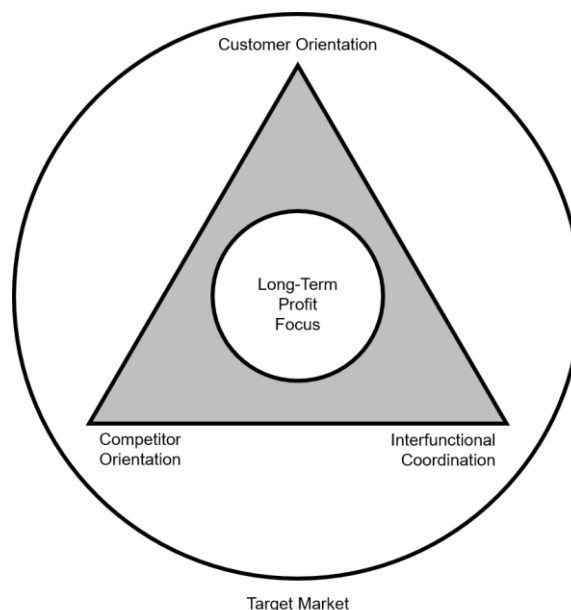


and consequently superior performance. In this case, MO encompasses three components: customer orientation, competitor orientation and inter-functional coordination (Narver & Slater, 1990). *Customer orientation* relates to the firm's propensity to acquire information from clients, understand all the buyer's value chain and to create superior value for them continuously (Narver & Slater, 1990). *Competitor orientation* relates to the firm's capacity "to understand the short-term strengths and weaknesses and long-term capabilities and strategies" of its competitors (Narver & Slater, 1990, p. 21). Finally, *inter-functional coordination* relates to the coordination of customer and competitor orientation in the firm's departments (Narver & Slater, 1990).

Most of the studies on MO focus on for-profit organizations, being the non-profit sector less reported in the literature, maybe because the desired performance outcome in the non-profit sector is still a matter of discussion (Zhou, Chao, & Huang, 2009). However, the importance of being market-oriented is well documented and tested in the literature over the past years (Ellis, 2006; Gupta et al., 2017).

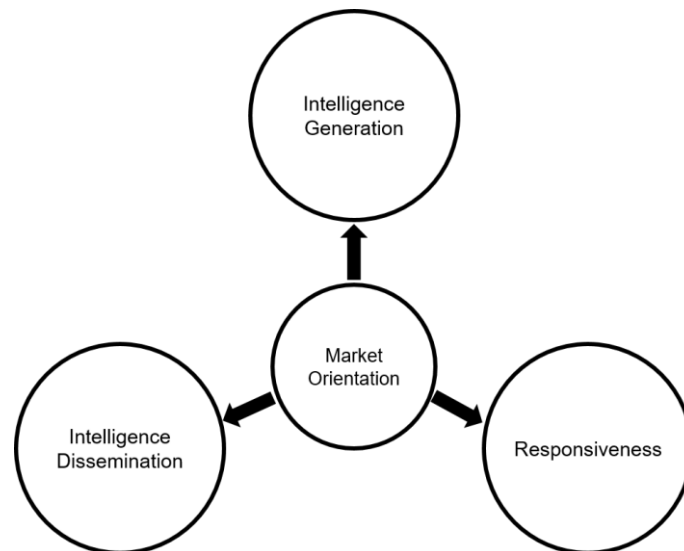
### 1.3.1. Market Orientation models

Within MO measurement, the most widely used models are Kohli et al.'s (1993) MARKOR scale and Narver and Slater's (1990) MKTOR scale (Ellis, 2006; Gauzente, 1999; Kaur, Sharma, & Seli, 2013). MKTOR scale is built on the conceptualisation of MO proposed by the same authors (Narver & Slater, 1990) and because of that has an emphasis on profit and a long-term focus (González-Benito et al., 2009). MKTOR scale has three dimensions (**Figure 4**): *customer orientation*, *competitor orientation* and *inter-functional coordination*, being customer orientation the most important dimension, suggesting that MKTOR scale is more appropriate to evaluate firms' commitment toward its customers, according to the analysis of Gauzente (1999).



**Figure 4** - MKTOR model (Narver & Slater, 1990)

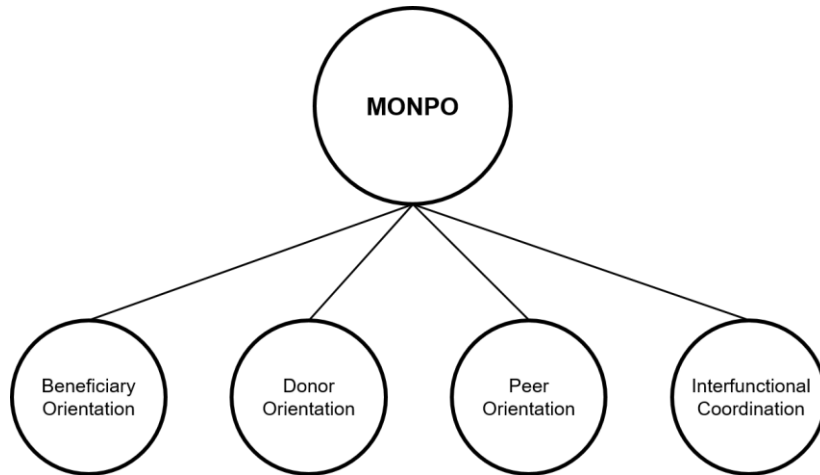
On the other hand, MARKOR scale differs from MKTOR by the use of a cultural dimension, suggesting that MO should be evaluated as an organizational phenomenon (Gauzente, 1999). MARKOR scale, built on Kohli & Jaworski (1990) work, assess the degree to which an organization (1) engages in market intelligence generation activities, (2) disseminates this intelligence within the organization, and (3) develop and implement marketing programs based on the intelligence generated (Kohli et al., 1993) (**Figure 5**).



**Figure 5** - MARKOR model (Kohli et al., 1993)

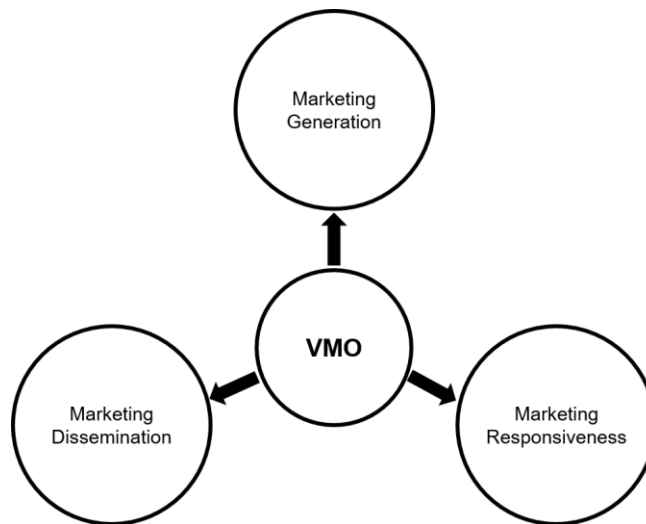
Most of the existing MO models derive from these two, being adapted to other samples or contexts (Gupta et al., 2017) such as NPOs (Modi & Mishra, 2010), social enterprises (Miles, Verreynne, Luke, Eversole, & Barraket, 2013) or individuals (Felgueira & Rodrigues, 2012).

For example, Modi and Mishra (2010) developed a scale to measure MO in NPOs - MONPO (**Figure 6**). Their scale derived from MKTOR and it is based in four constructs: (1) *beneficiary orientation* reflecting the focus on beneficiaries' needs and satisfaction, developing effective responses to meet those needs and satisfaction; (2) *donor orientation* which reflects the organisation's capacity to communicate with current or potential donors and to meet their explicit and latent expectations; (3) *peer orientation* viewed as the "organisational focus on understanding peers' strengths, weaknesses, strategies" (p. 554) collaborating with those peers for a better performance; (4) *inter-functional coordination* reflecting the coordination between the use of resources and the fulfilling of external stakeholders' needs and expectations.



**Figure 6 - MONPO model (Modi & Mishra, 2010)**

Miles et al. (2013) developed a scale to measure MO in social enterprises (SEs) based on the Vincentian values – Vincentian Marker Orientation (VMO) (**Figure 7**). VMO is defined by the authors as “an organisational wide value-driven philosophy of management that focuses an SE on meeting its objectives by adopting a more marketing orientated approach to serve the needy and poor in a just and sustainable manner” (Miles, Verreynne, & Luke, 2014, p. 549), it is based on Kohli et al. (1993) model and comprises three dimensions: marketing generation, marketing dissemination and responsiveness.



**Figure 7 - VMO model (Miles et al., 2013)**

### **1.3.2. Market Orientation and Junior Enterprises**

Despite the extensive research on MO conceptualization and models, none of them focused on JEs or similar students’ organization. Most studies focused on for-profit organizations and there are some authors that adapted previous models to NPOs (Balabanis, Stables, & Phillips, 1997;

Cervera, Mollá, & Sánchez, 2001; Kara, Spillan, & DeShields Jr., 2004; Miles et al., 2014; Modi & Mishra, 2010; Wood, Bhuiyan, & Kiecker, 2000; Zhou et al., 2009).

Even though JEs are NPOs, their structure, objectives and the way they work are very similar to real companies thence many of the MO scales' constructs adapted to NPOs are not applicable to measure MO in JEs. Based on this literature review we conclude that there is a gap in MO literature related to the adaptation of this construct and measurement models to JEs or similar organizations. In this study, we will adapt an existing MO model and check its applicability on JEs.

#### 1.4. Entrepreneurial Orientation

Entrepreneurial orientation (EO) has been recognized as an important construct within strategy and entrepreneurship literature in the last thirty years, being Mintzberg (1973) and Khandwalla (1977) the pioneers of EO research (Covin & Wales, 2012; Tang, Tang, Marino, Zhang, & Li, 2008).

The increasing interest in this construct arises from its confirmed impact on business performance, profitability and growth, innovation, organizational learning, etc. (Covin & Wales, 2012; Wales, Gupta, & Mousa, 2013).

Mintzberg (1973) argues that an entrepreneurial strategy-making mode “is dominated by the active search for new opportunities in uncertain environments” (p. 45) and Khandwalla (1977) defined the entrepreneurial management style as a “bold, risky, and aggressive approach to decision making” (p. 25), in contrast to a more stability-oriented approach.

However, the conceptualisation of EO starts with Miller (1983) that considers an entrepreneurial firm as one that “engages in product market innovation, undertakes somewhat risky ventures, and is first to come up with 'proactive' innovations, beating competitors to the punch” (Miller, 1983, p. 771), stating that the antecedents of EO are a combination of three dimensions: innovativeness, proactiveness and risk-taking. Based on this conceptualisation, Covin and Slevin (1988) argue that entrepreneurial firms are those in which the top managers have entrepreneurial management styles, and, in the opposite, non-entrepreneurial firms are those which the top management style is risk-averse, non-innovative and passive.

Later, Lumpkin and Dess (1996) conceptualise EO as the processes, practices, and decision-making activities that lead to new entry, characterized by one or more of the following dimensions: “a propensity to act autonomously, a willingness to innovate and take risks, and a tendency to be aggressive toward competitors and proactive relative to marketplace opportunities” (p. 137) adding two other dimensions to this perspective: autonomy and competitive aggressiveness (Lumpkin & Dess, 1996). This is considered a turning point in EO research, moving away from previous conceptualisations (Basso, Fayolle, & Bouchard, 2009).

In this case, **Innovativeness** is seen by Miller (1983) as product-market innovation activities. Later, Lumpkin and Dess (1996) propose a broader definition, that not only include the implementation of activities aiming at product innovation, but also “reflects a firm's tendency to engage in and support

new ideas, novelty, experimentation and creative processes” (Lumpkin & Dess, 1996, p. 142) leading to the development of new product, services and technological processes that answer to customer needs (Hughes & Morgan, 2007). It has then become “an important component of EO because it reflects important means by which firms pursue new opportunities” (Lumpkin & Dess, 1996, p. 143).

Miller (1983) suggest that an entrepreneurial firm is able to come up with 'proactive' innovations, being **proactiveness** a “forward-looking perspective where companies actively seek to anticipate opportunities to develop and introduce new products to obtain first-mover advantages and shape the direction of the environment” (p. 146), which is also a crucial dimension in EO (Lumpkin & Dess, 1996).

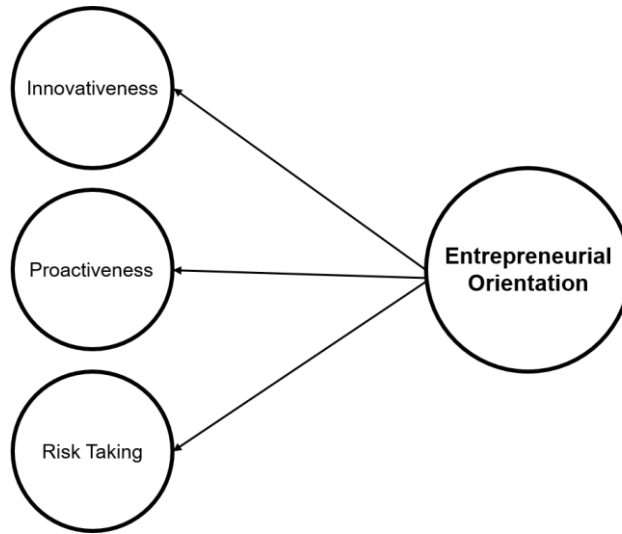
In turn, **Risk-taking** behaviour reflects “a willingness to commit resources to implement projects, activities, and solutions that contain inherently a high level of uncertainty regarding the likely outcomes” (Hughes & Morgan, 2007, p. 653).

Finally, Lumpkin and Dess (1996) define **competitive aggressiveness** as the firm’s intensity and efforts to outperform its competitors, exploiting the firm’s strengths and competitors’ weaknesses (Hughes & Morgan, 2007) in order to be competitive; and **autonomy** is described as the freedom given to employees to develop and fully implement new ideas (Lumpkin & Dess, 1996), encouraging them “to be self-directed, to exercise creativity, pursue opportunities, and champion new ideas which are essential for effective entrepreneurial activity to occur” (Hughes & Morgan, 2007, p. 654).

#### 1.4.1. Entrepreneurial Orientation Models

Despite all the five dimensions are well conceptualised in literature, the nature, dimensionality and measurement of EO are still not consensual among researchers (Covin & Lumpkin, 2011; González-Benito et al., 2009; Wales, 2016) leading to a lack of consistency and clarity about the concept of EO (George & Marino, 2011). The decision on the measurement of EO, through a multidimensional model or via a composite dimension, is dependent on the interpretation of the construct (Covin & Wales, 2012).

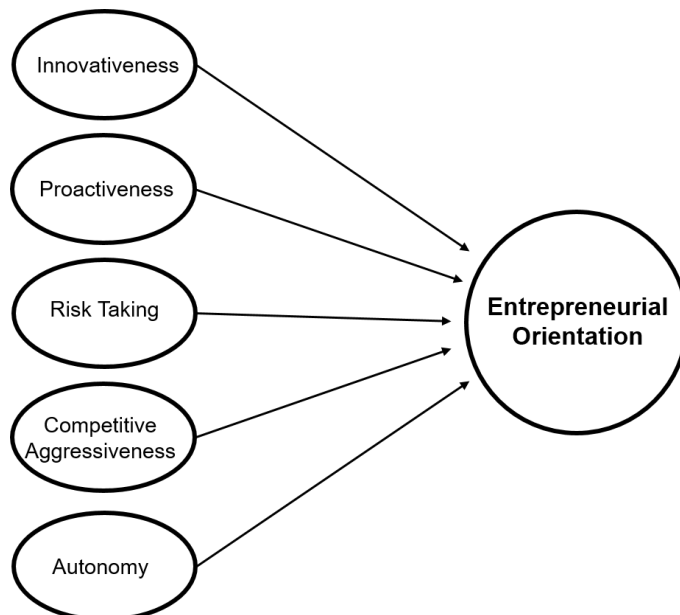
On the one hand, Covin and Slevin (1989), basing their conceptualisation in Miller's (1983) definition, use the three dimensions (proactiveness, risk-taking and innovativeness) and assume that they act together by constituting a basic, unidimensional strategic orientation, being EO a first-order reflective construct that cannot be decomposed (González-Benito et al., 2009) (**Figure 8**).



**Figure 8** - EO model (Covin & Slevin, 1989)

Despite Covin and Slevin's (1989) scale is the most widely used in EO measurement, it has been criticized by some authors due to its assumption that the individual items have the same antecedents and consequents (Covin & Wales, 2012) and because they ignore the individual influence of each dimension, assuming a universal and uniform influence by each dimension (Hughes & Morgan, 2007).

In the other hand, Lumpkin and Dess's (1996) 5-dimension conceptualisation suggest that the five EO dimensions (risk-taking, innovativeness, proactiveness, competitive aggressiveness and autonomy) may vary independently of each other in many situations, having independent effects on a dependent variable (**Figure 9**).



**Figure 9** - EO model (Lumpkin & Dess, 1996)

This model is seen appropriated when researchers search for more accuracy because it reports the independent relationship of each dimension with particular antecedents and consequences, providing more insights of the strength and variations of individual relationships (Covin & Wales, 2012; González-Benito et al., 2009). However, fewer studies explored Lumpkin and Dess's (1996) five-dimension EO framework, with a tendency in the literature to study only the three dimensions proposed by Miller (1983) (Hughes & Morgan, 2007; Wales et al., 2013). Still, these few studies explored this five-dimension framework in various contexts such as for-profit companies, non-profit companies, developed and emerging countries as reported in Saha et al.'s (2017) review. Also Wales, Gupta and Mousa's (2013) review shown an increasing use of this conceptualization in the recent EO literature.

In an attempt to solve this struggle, George and Marino (2011) suggest that for knowledge accumulation to occur in this field, it is important to maintain the three core dimensions (proactiveness, risk-taking and innovativeness) (Covin & Slevin, 1989; Miller, 1983), and add subcategories within EO conceptual family using new measurement items, for example incorporating the dimensions of Lumpkin and Dess (1996), in order to generate more relevant insights in particular contexts and samples (Wales, 2016).

Despite this debate within EO models, there is a general consensus on the importance of entrepreneurship because it represents a continuous look for opportunities, improving performance and fostering growth (Ma, Kim, Heo, & Jang, 2012) and it is a key success factor for today's enterprises in a more and more volatile, dynamic and uncertain business environment (Wiklund & Shepherd, 2005).

#### **1.4.2. Entrepreneurial Orientation and Junior Enterprises**

Despite the extensive research on EO conceptualization and models, none of them focused on JEs or similar students' organization. Most studies focused on for-profit organizations and there are also some authors that adapted previous models to similar samples. For example, Kraus et al. (2017) developed a scale to measure EO on social enterprises (SEO) comprising four dimensions: social innovativeness; social risk-taking; social proactiveness; and socialness. Hughes and Morgan (2007) developed a scale to measure EO on high-technology firms at an embryonic stage of development based on Lumpkin and Dess (1996) 5-dimensions conceptualization.

As commented in 1.3.2, JEs differ from NPOs or SEs because their structure, objectives and the way they work that are very similar to real companies, therefore constructs of scales adapted to these type of organizations may not be applicable in JEs.

Based on this literature review, we decided that: (1) the best way to measure EO is through using EO models adapted to SMEs or firms at an embryonic stage; (2) since we do not have previous analysis to JEs, a multidimensional model should be used in this study to get more insights of each EO impact.

## 1.5. Performance

Business performance is a constant point of discussion in strategic management literature due to its critical value for strategic management (Dess & Robinson Jr., 1984; Venkatraman & Ramanujam, 1986). Only through assessing organizations' performance it is possible to test a strategy, to examine its content or processes issues and to overcome those issues (Venkatraman & Ramanujam, 1986).

But, if business performance is a complex concept (Dess & Robinson Jr., 1984), studying the performance of NPOs or SEs is equally (or even more) complex. Most NPOs or SEs have unclear goals and expectations which leads to a constant discussion on the desired performance outcome in these organizations (Clark, 2012; Zhou et al., 2009).

Despite these issues, an increasingly competitive, uncertain and fast-moving world required that all organizations assess their performance, searching for better ways to improve it (González-Benito et al., 2009; Miles & Arnold, 1991; Sciascia et al., 2006). Then it is crucial to measure JEs' performance in order to assess the impact of a strategic orientation (as MO or EO) and to develop valuable implications to improve JEs performance.

Regarding the measurement of business performance, it is important to discuss and decide two things - the use of subjective and/or objective measures and the use of unidimensional or multidimensional measures.

In MO and EO literature, the relationship between these constructs and business performance has been widely reported (Gupta et al., 2017; Rauch et al., 2009), existing an equal wide variety of performance measures that have been used to assess the outcomes of this constructs (Bhuiyan & Habib, 2004). Rauch et al.'s (2009) meta-analysis results indicate that EO is positively correlated with financial, non-financial and archival indicators, with no significant differences between these different ways of measuring performance, suggesting that EO-relationship is robust enough to different measures of performance. However, some authors alert for the fact that the way performance is measured may influence the results of the relationship between EO and performance (Hughes & Morgan, 2007; Lumpkin & Dess, 1996).

Objective measures have been criticized, because often the objective data is not representative or not consistent with the data provided by other firms in the same sample or because many times managers are not willing to provide this objective data (Dess & Robinson Jr., 1984). With this in mind, many authors suggest the use of subjective-only measures when objective data gathering is inappropriate or unavailable (Bhuiyan & Habib, 2004; Deutscher, Zapkau, Schwens, Baum, & Kabst, 2016). Also, Ellis's (2006) review found greater effects on performance when the subjective measures are used rather than objective measures.

In relation to the multidimensionality, many authors argue that business performance is multidimensional in nature and focusing only in objective data may be inaccurate because it may not reflect the true source of competitive advantage (Morgan & Strong, 2003). In addition, the use of a multidimensional measurement of the performance construct allows to assess the individual



correlation and impact an independent variable in different performance dimensions, increasing the robustness of the resulting conclusions (Lumpkin & Dess, 1996).

### **1.5.1. Performance and Junior Enterprises**

In studies on JEs, there is only one measuring its' business performance - Michaelis et al. (2015). It uses productivity (ratio of the JEs' sales to the number of members) to measure the overall performance because they found it is the most common measure in strategic human resource management literature. However, we think this measure is not applicable in this study that is trying to understand JEs' behaviours and strategic orientations.

Despite they are not the same, NPOs, SEs or SMEs' performance measures can provide some insights to choose the performance measure for JEs. For example, Modi and Mishra (2010) measured NPO's performance through four dimensions: beneficiary satisfaction; resource attraction; peer reputation; and effectiveness. Miles et al. (2013) measure SE's performance through assessing its social performance (comprising the satisfaction of donors and beneficiaries; advocacy for beneficiaries; and environmental and socially responsible management) and its economic performance. Chen and Hsu (2013) measured NPO's performance with a scale that intent to reflect the NPO's vision, its system-building process and the degree of coordination and satisfaction among its employees. Finally, Hughes and Morgan (2007) measured the performance of firms at an embryonic stage of development through their customer and product performance.

Therefore, in accordance with these recommendations and literature review, we choose a multidimensional subjective measurement, composed of three dimensions to measure JEs' performance: (1) economic performance (EP), a necessary dimension because despite JEs have a non-profit basis, they need to be sustainable in order to create a long-term impact on their clients and students; (2) customer performance (CP) which is another important dimension for the performance of a JE, because as providers of services to other companies and institutions, is important that JEs create a good impact on their customers and if possibly create a long-term relationship, achieving repeated orders; (3) development performance (DP) is also an important dimension because the main goal of any JE is the development of their members through the projects and the internal work they do.



## 2. Conceptual Model and Hypothesis

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This research aims to assess the impact of MO and EO on JEs' performance. Based on that, we develop hypotheses on MO, EO and performance relationships supported in the literature. A final conceptual framework that highlights our research questions will be presented.

### 2.1. Market Orientation and Performance

As mentioned before MO is a business strategy that consists in the search for market information and the development of congruent responses to market needs and opportunities, enabling organizations to improve their performance (González-Benito et al., 2009).

The link between MO and business performance, profitability or growth has been extensively investigated, being Narver and Slater (1990) the first authors to develop a valid scale to measure MO and to assess its effect in business profitability. Some studies report a non-significant (Baker & Sinkula, 1999; Becherer & Maurer, 1998; Diamantopolous & Hart, 1993; Solano Acosta, Herrero Crespo, & Collado Agudo, 2018) or only indirect effect of MO (Demibarg, Koh, Tatoglu, & Zaim, 2006; Greenley, 1995; Keskin, 2006) on business performance, suggesting that performance depends on external market conditions. However, most of the research in this topic report a positive relationship between MO and performance (Baker & Sinkula, 2009; Kohli & Jaworski, 1990; Narver & Slater, 1990; Selmi & Chaney, 2018; Zhang, Kara, Spillan, & Mintu-Wimsatt, 2007). For instance, Hung Ngai & Ellis (1998) studied Hong Kong firms and observed a positive influence of MO in the short-term and long-term business performance. Also, Spillan et al. (2013) study on SMEs in Ghana has highlighted a positive impact of the dimensions of MO, measured by MARKOR scale, in companies' performance. Seli, Kaur and Sharma (2013) found differences between internal MO and external MO, however, both have a positive and significant relationship in business' performance and customer's satisfaction. Ellis (2006) meta-analysis on previous studies suggest a positive relationship between MO and performance, yet influenced by other contextual variables (e.g. size or economic development of the domestic economy).

Usually most of this studies are related to large organizations, but there are also some that report this relationship in SMEs (Kara, Spillan, & Deshields Jr., 2005; Kasim, Ekinci, Altinay, & Hussain, 2018; Zhang et al., 2007), microenterprises (Spillan et al., 2013) or in the non-profit/social organizations (Kara et al., 2004; Ma et al., 2012; Miles et al., 2014; Mulyanegara, 2011). Despite none of those studies focuses on JEs, the positive relationship between MO and performance is well-documented (Ellis, 2006), thus the following hypothesis was established:

***H1 – MO dimensions will have a positive impact on Junior Enterprises' Performance***

## 2.2. Entrepreneurial Orientation and Performance

As mentioned before, EO is seen as firm's strategic orientation that enables firms to engage in product innovation, undertake risky projects, and to be the first in the market with proactive innovations, in order to surpass its competitors (Lumpkin & Dess, 1996; Miller, 1983).

Despite the relationship between EO and performance has been reported before, for example, by proposing positive relations between entrepreneurial posture and growth or profitability (Covin & Slevin, 1991; Zahra, 1993), Lumpkin and Dess (1996) were the first authors to clarify the link between the two constructs, by proposing a different conceptual framework to assess this relationship. Since then, this relationship has been widely examined in literature by many authors reporting a positive link between EO and performance in large or industrial enterprises (Beyza & Öz, 2014; Yong-hui Li, Huang, & Tsai, 2009; Morris & Sexton, 1996; Zehir, Can, & Karaboga, 2015), SMEs (Avlonitis & Salavou, 2007; Keh, Nguyen, & Ng, 2007; Wiklund, 1999; Wiklund & Shepherd, 2005), public sector (Caruana, Ewing, & Ramaseshan, 2002), early-stage firms (Hughes & Morgan, 2007) and in the non-profit sector (Hu, 2013; Hu & Pang, 2013; Pearce, Fritz, & Davis, 2010). This has generated a general consensus that EO influences a firm's performance.

However, there are also authors that found some incongruences in assessing this relationship. Soininen, Martikainen, Puumalainen and Kyl (2012) research on SMEs revealed a positive impact of EO in a firm's growth, but not in their profitability. Hughes and Morgan (2007) measured the impact of each dimension proposed by Lumpkin and Dess (1996) on the performance of early-stage firms and found out that innovativeness and proactiveness are positively correlated with product and customer performance, but risk-taking is negatively correlated, and autonomy and competitive aggressiveness have no influence. Pearce et al. (2010) also measured the impact of each dimension and observed a negative correlation in proactiveness and no influence of competitive aggressiveness and risk-taking. However, both authors confirm a positive impact of EO in performance when combining the five dimensions in an overall strategy.

In turn, Matsuno and Mentzer (2002) detected only an indirect effect of EO which support that this relationship may be mediated by internal and external factors (e.g. differentiation strategy, innovation performance, the market context or the experience of human capital) (Tang et al., 2008; Zehir et al., 2015). Also, Tang et al. (2008) found a curvilinear relationship between EO and performance stating that focusing too much in high-risk and innovative projects "may impact performance negatively by inhibiting firms' capability to immediately adapt to the complications of their institutional environment" (Tang et al., 2008, p. 221). This has been confirmed by other authors (Chen & Hsu, 2013), however for understanding this relationship it is necessary to further research.

Despite some of these incongruences, Rauch, Wiklund, Lumpkin and Frese's (2009) meta-analysis of 53 samples comprising over 14000 companies indicates that the relationship between EO and performance is moderately large and robust enough to different operationalisations, cultural contexts and type of organizations. Thus the following hypothesis was established:

***H2 – EO dimensions will have a positive impact on Junior Enterprises' Performance***

### **2.3. Market Orientation and Entrepreneurial Orientation**

MO and EO are two firm-level concepts that have been extensively studied over the last thirty years, from different approaches and within different research models (Montiel-Campos, 2018). Also, both constructs are seen as key factors to ensure firms' success in an increasingly competitive world (Sciascia et al., 2006) by being positively associated to firm performance (Montiel-Campos, 2018).

As mentioned previously, MO reflects the firms' strategic focus in market planning driven by customer and competitor intelligence, and EO reflects the firms' strategic focus in identifying and exploit untapped market opportunities constantly, to respond to the environmental turbulence (Baker & Sinkula, 2009; Miles & Arnold, 1991).

It is clear in the literature that MO and EO are distinct constructs and have some kind of interaction (Grimstein, 2008; Montiel-Campos, 2018). Most of the studies normally measure the effect of MO and EO independently on a dependent variable (normally firms' performance), and less number of studies are focused in assessing the relation between them (Matsuno et al., 2002; Montiel-Campos, 2018; Sciascia et al., 2006). Despite the extensive research around these constructs, it is still unclear the type of relationship between MO and EO (Montiel-Campos, 2018; Sciascia et al., 2006).

Montiel-Campos's (2018) qualitative review comprising 121 articles, that include both MO and EO in the same research model, concluded that these constructs can be organized into six different approaches and 53 different research models. According to Montiel-Campos (2018), a large majority of the recent studies (since 2011) focus on a sequential approach, being MO an antecedent of EO or vice-versa, or on the complementary approach, where they are mutually supportive. Also, other authors report that future studies should consider the complementary approach because it provides deeper knowledge on how to increase firms' performance (Deutscher et al., 2016; Hakala, 2011; Ho, Plewa, & Lu, 2016). Following this different approaches and research models, we will explore some of the most common relationships between MO and EO.

Many authors discussed and tested EO as an antecedent of MO (Hakala & Kohtamaki, 2010; Ma et al., 2012; Matsuno et al., 2002; Sung, Choi, Kim, & Lee, 2014; Vallini & Simoni, 2009; Vega-Vázquez, Cossío-Silva, & Revilla-Camacho, 2016), being this link also reported in specific contexts like SMEs (Amin, Thurasamy, Aldakhil, & Kaswuri, 2016; Osman, Ahmad, Rashid, & Hussain, 2011; Ruzgar, Kocak, & Ruzgar, 2015). In this line, some authors report a mediating effect of MO on the relationship between EO and performance (Amin et al., 2016; Ma et al., 2012; Ruzgar et al., 2015; Sung et al., 2014; Vallini & Simoni, 2009; Vega-Vázquez et al., 2016). An interpretation for this direction is given by Vallini and Simoni (2009) suggesting that "as entrepreneurs seek for market opportunities, they tend to be market-oriented" (p. 23).

In turn, other authors discussed and tested MO as an antecedent of EO (Morgan & Strong, 1998; Shavazi, Moshabaki, Hosseini, & Kordnaeij, 2015) being this link also reported in specific contexts

like emerging countries (Liu, Luo, & Shi, 2003; Luo, Zhou, & Liu, 2005), SMEs (Sciascia et al., 2006). Also, Grimstein's (2008) meta-analysis found that all the effects of MO on EO of previous studies were positive with a mean effect size of .633. Within this effect of MO on EO, some authors propose a mediating effect of EO in the relationship between MO and performance (Acar, Zehir, Özgenel, & Özşahinc, 2013; Shavazi et al., 2015). Bhuian, Menguc and Bell (2005) also report that EO mediates the relationship between MO and performance but in a curvilinear model, suggesting that high-market/moderate-entrepreneurship orientation is the best combination to organizational success.

Finally, many researchers discussed and tested EO and MO as complementary constructs that have a joint effect in performance through moderation (Bhuian et al., 2005; Chen & Hsu, 2013; González-Benito et al., 2009; Hussain, Rahman, & Ali Shah, 2016; Yuan Li, Zhao, Tan, & Liu, 2008). Some authors propose also that besides the joint effect, there is also an individual effect of each construct on performance (Bhuian & Habib, 2004; Vitale, Giglierano, & Miles, 2004; Zahra, 2008).

As seen before, there are many authors discussing and testing the causality direction MO – EO. The theoretical support to this causality direction begins in 1981 when Murray (1981) suggested that the marketing role is the home for entrepreneurial processes. In 1992, Jones and Butler (1992) suggested that only after organizations' culture had fostered the development of excellence norms and values (e.g. market orientation) in innovation and services, can the organization begin to encourage entrepreneurship in its strategic management. Some years later, it was proposed by Hunt and Morgan (1996) one of the most cited theories explain this direction of causality - the Resource-Advantage theory of competition. This theory opposes to the traditional theory of perfect competition since it proposes that markets are in continuous disequilibrium, and demand is heterogeneous and dynamic. Also, resources are heterogeneous and imperfectly mobile, information is imperfect and costly and competition is an ongoing struggle among firms. In this theory, the source of competitive advantage (creating more, and more efficiently, value for customers) derives from innovation, which in turn rise from the competition. The link between this theory and entrepreneurship is highlighted by Morris, Schindehutte and Laforge (2002) in their Entrepreneurial Marketing construct. As marketing facilitates the ability to create new resources and to enhance organizations' productivity, entrepreneurship behaviour and entrepreneurial processes arise from the resources created and knowledge accumulated mainly from its customers and competitors.

Mainly based in this view, many authors suggest that MO cultures consist in scanning the business environment and respond to its changes, "enhance managers' ability to see and think 'outside the box' " (Morgan & Morhies, 2018, p. 262), enable firms to be more innovative (Atuahene-Gima & Ko, 2001; Han, Kim, & Srivastava, 1998; Jaworski & Kohli, 1996; Sciascia et al., 2006) and enhance the possibility of discovering entrepreneurial opportunities (Sciascia et al., 2006). Therefore, MO is "the first move in sustaining entrepreneurship within companies" (Sciascia et al., 2006). Later, González-Benito et al.'s (2009, p. 513) analysis confirmed that "highly entrepreneurial firms tend to

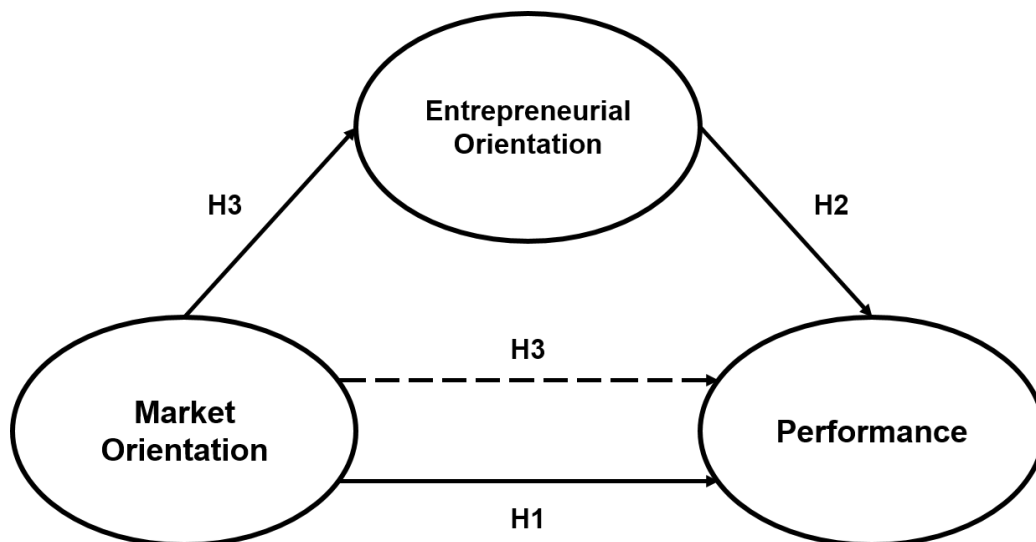
be highly market orientated, but highly market-oriented firms are not necessarily highly entrepreneurial firms”, suggesting that the sequence MO -> EO represents the most common way to adopt this relationship.

Some authors argued the mediation effect of EO on a MO-outcome relationship (González-Benito et al., 2009; Han et al., 1998), however this relation has not been reported frequently in the literature with some authors suggesting that efforts should be done to understand deeply the mediators' effects in the MO literature (Boyd, Haynes, Hitt, & Ketchen, 2012; Gupta et al., 2017). Most of the research within this causality direction has been in industries or large companies. Nevertheless, there are also some studies that assess the impact of MO on EO, and the mediator role of EO in MO-performance relationship in SMEs (Sciascia et al., 2006), suggesting that this relationship will also be possible to verify in the JEs. Based on these theoretical grounds, we see MO as a determinant of EO, and EO mediating the relationship between MO and performance. Thus, the following hypothesis was established:

***H3 – EO dimensions are mediators in the effect of MO dimensions on Junior Enterprises' Performance***

#### **2.4. Final Conceptual Model**

The proposed conceptual model illustrated in **Figure 10** summarizes the hypothesis previously built. The proposed model examines the impacts of MO and EO on JEs' performance and also examines whether or not EO mediates the relationship between MO and JEs' performance.



**Figure 10** - Conceptual model





### 3. Methodology

#### 3.1. Sample

The total population comprised all JEs recognized by the international and national confederations (a total of 990 JEs). JIs were not included because most of them are at the beginning of their activity or are not internally and/or externally well-developed.

The sample is composed of 93 JEs (9.66% of the considered population) from 13 different countries as seen in **Table 2**, being Brazil, France and Portugal the most represented countries. Both Brazil and France have the highest number of JEs which may explain the higher number of responses from those countries. The sample covered JEs founded between 1969 and 2018, thus about half of them have 10 years or less (**Table 2**).

Most of the JEs in our sample (73%) operate in the business consulting field, which is the most represented area within the JE network since its creation 50 years ago. Other fields of operation comprise technological development and the organization of events, which are still less represented in the JE network (**Table 2**).

With regard to the number of students involved in JEs, 35.48% of the JEs has between 21 to 35 students enrolled, 25.8% has less than 20 students, 25.8% has between 36 to 50 students, and finally, 12.9% has more than 50 students involved in its management (**Table 3**). Since their foundation, about 62% of the JEs had engaged more than 150 students. Most of the members of JEs are enrolled in engineering

and technology courses (50.54%) or in social sciences (36.56%). Apart from this two, there are other areas but with very low representation, as shown in **Table 3**.

**Table 2** – Sample Characteristics

	<b>N</b>	<b>% Sample</b>	<b>% Population</b>
<b>Countries</b>			
Austria	3	3.23	60.00
Brazil	41	44.09	6.82
Croatia	1	1.08	100.00
France	17	18.29	9.60
Germany	3	3.23	4.55
Italy	4	4.30	22.22
Morocco	2	2.15	25.00
Poland	1	1.08	33.33
Portugal	13	13.98	92.86
Spain	2	2.15	11.76
Switzerland	3	3.23	33.33
Tunisia	2	2.15	5.26
USA	1	1.08	16.67
<b>Foundation Year</b>			
1969 - 1988	8	8.60	
1989 - 1998	20	21.51	
1999 - 2008	20	21.51	
2009 - 2013	29	31.12	
2014 - 2018	15	16.13	
<i>Missing</i>	1	1.08	
<b>Core Business</b>			
Consultancy	68	73.12	
Tech Development	14	15.05	
Events' organization	3	3.23	
Other	8	8.60	
<b>Total</b>	<b>93</b>	<b>100</b>	

Note: Number of respondents (N)

**Table 3 - Characterization of the Junior Enterprises' Members**

		<b>N</b>	<b>%</b>
<b>Area of Study of the Members</b>	Social Sciences	34	36.56
	Engineering and Technology	47	50.54
	Health and Medical Sciences	4	4.30
	Natural Sciences	2	2.15
	Arts and Humanities	4	4.30
	Agricultural Sciences	2	2.15
	<b>Total</b>	<b>93</b>	<b>100.00</b>
<b>Number of Students enrolled</b>	Less than 20	24	25.80
	21 to 35	33	35.48
	36 to 50	24	25.80
	More than 50	12	12.90
	<b>Total</b>	<b>93</b>	<b>100.00</b>
<b>Number of Members since foundation (cumulative)</b>	Less than 50	6	6.45
	51 to 75	7	7.53
	76 to 150	22	23.66
	151 to 225	16	17.20
	226 to 300	11	11.83
	More than 300	31	33.33
	<b>Total</b>	<b>93</b>	<b>100.00</b>

Note: Number of respondents (N)

Regarding the JEs business data, it was also collected information on the number of clients, number of projects and turnover of the last 3 years. Not all JEs answer this question because they had not the data from the previous years or because they did not want to share this business data. Only 66 JEs completed all the business data asked.

As shown in **Table 4**, there has been an increase in the number of clients, projects and turnover year after year. In the last year (2017) the average number of clients was 19, the average number of projects was 21, and the average turnover was around 38k €.

Some characteristics of our sample are consistent with the characteristics of the total population. According to the Global Report 2018 (Junior Enterprise Global Council, 2018a): the distribution of the study scientific areas of JEs members (Engineering: 46.2%; Social Sciences 34.6%); the number of projects (17.3 per JE) and turnover (19244€ per JE).

**Table 4** - Business Data of Junior Enterprises

		<b>N</b>	<b>Minimum</b>	<b>Maximum</b>	<b>Mean</b>	<b>Std. Deviation</b>
<b>Number of Clients</b>	2015	71	0	180	13.22	28.62
	2016	79	0	171	15.45	27.50
	2017	82	0	200	19.03	26.53
<b>Number of Projects</b>	2015	73	0	150	12.49	21.00
	2016	83	0	200	16.29	27.24
	2017	85	0	114	20.62	21.05
<b>Turnover (€)</b>	2015	70	0	62663.00	24867.39	77626.29
	2016	77	0	69575.00	33811.99	98957.97
	2017	83	0	96000.00	39413.21	109930.97

Note: Number of respondents (N)

### 3.2. Survey Development and Implementation

#### 3.2.1. Market orientation measurement

Several studies argue that MARKOR scale is more robust in explaining business performance than Narver and Slater's (1990) MKTOR scale (Ellis, 2006; Oczkowski & Farrell, 1998; Uncles, 2000). As an example, Ellis's (2006) meta-analysis compared 58 samples that used MARKOR or MKTOR scale and found that MARKOR scale returned highly effect on performance. Also, Oczkowski and Farrell (1998) report that MARKOR scale outperformed MKTOR in ten out of twelve performance indicators comparisons.

In addition to this robustness in explaining business performance, Siguaw and Diamantopoulos (1995) validity study report several problems related to the overall fit of the MKTOR model, suggesting that MARKOR scale report better results, yet the authors consider that even the results of MARKOR scale are not totally satisfying. Also, Gauzente's (1999) content analysis suggests that MARKOR scale is largely consistent with its conceptualization in contrast with MKTOR scale that focuses too much on customer orientation ignoring the cultural part of MO. Finally, other authors suggest that both scales should be adapted and refined due to the inadequate fit in their original form (Farrell & Oczkowski, 1997; Oczkowski & Farrell, 1998).

Shoham, Ruvio, Vigoda-Gadot and Schwabsky's (2006) has performed a meta-analysis study and observed that Kohli et al.'s (1993) MARKOR scale reported stronger MO-performance relationship for NPOs. MARKOR scale focuses on the behavioural perspective highlighting the activities that lead to a market-oriented organization, in contrast with MKTOR that focus too much on competitors and customers (Covin & Wales, 2012). Also, several studies confirm the effectiveness of MARKOR scale in studies with SMEs (Presutti & Odorici, 2018; Spillan et al., 2013) and university spin-offs (Migliori, Pittino, Consorti, & Lucianetti, 2017). Atuahene-Gima and Ko (2001) suggest the use of

this scale if the goal of the study is to capture specific behavioural activities that reflect the dimensions of MO construct and/or to capture the reactive/responsive nature of market orientation. Considering the literature review performed, the MARKOR original scale seems suitable to the study in hands, due to the characteristics of the JEs and the goals of study related to MO. Kohli et al.'s (1993) MARKOR scale was built on Kohli and Jaworski's (1990) previous work. The scale items were generated through interviews conducted by the two authors, then three pre-tests were conducted to refine the scale, leading to a scale composed of 32 items. A test with 229 business units was used to evaluate and eliminate items. The final scale is composed of 20 items (six for intelligence generation dimension, five for intelligence dissemination and nine for responsiveness). The good scale reliability and validity of MARKOR is confirmed by Ellis's (2006) meta-analysis on 56 studies which reported a mean reliability of .881 for the MARKOR scale. In this study, an item suggested by Morgan and Morhies (2018) (MO11) was added to avoid any misunderstanding with the time-frame of the item MO7 of the same scale.

### **3.2.2. Entrepreneurial orientation measurement**

Based on the literature review, the EO model proposed by Lumpkin and Dess's (1996) seems suitable for our research, since it allows us to analyse the individual effect of each EO dimension which, therefore, will provide more insights on its effects on the other variables.

The Hughes and Morgan's (2007) scale is one of the most cited when referring to the five-dimensional EO measures (Saha et al., 2017). It was built based on Lumpkin and Dess's (1996) conceptualization of EO, and it encompasses the following dimensions: risk-taking (3 items), proactiveness (3 items), innovativeness (3 items), competitive aggressiveness (3 items) and autonomy (6 items). All the items report high and significant item-total correlation coefficients ( $r > .69$ ,  $p < .001$ ) and Cronbach alpha coefficients greater than .70. Also, several studies, using Hughes and Morgan's (2007), scale confirm its high reliability and its applicability on measuring EO in SMEs (Buli, 2017; Hernández-Linares, Kellermanns, & López-Fernández, 2018; Neneh & van Zyl, 2017) and new ventures (Shan, Song, & Ju, 2016; Yang & Ju, 2017).

### **3.2.3. Performance measurement**

Miles, Verreynne, Luke, Eversole and Barraket (2013) measured economic performance (EP) in social enterprises, developing a scale that focuses on their economic viability and not in their profitability. We consider that this scale assesses what is expected of EP in the case of JEs, therefore we decided to use this scale to measure EP in this study. This scale is composed of 6 items and reported a good internal consistency (Cronbach's  $\alpha = .71$ ). This scale was also confirmed by Miles et al. (2014).

CP was measured with a scale developed by Hughes and Morgan (2007), which the authors used to assess the relationship between EO dimensions and firms' performance. The scale is composed of three items, which report a high item-total correlation (greater than .79) and a Cronbach's alpha of .83.

Finally, DP can be measured through Chen and Hsu (2013) scale which was developed to measure firm performance in NPOs, and its relationship with MO and EO. The scale does not measure the members' development of skills, instead, it reflects the organization' vision, the degree of coordination among its members and their satisfaction, being composed by 6 items, reporting a high composite reliability (CR = .98) and a high average variance extracted (AVE = .94) in Chen and Hsu (2013) study.

#### **3.2.4. Final survey**

The chosen scales were adapted from the original scales and were translated to Portuguese. Then, an English native speaker performed a back-translation to English of the items to confirm the correct translation of the scales (Marin & Marin, 1991). MO, EO and CP were measured using a 7-point Likert scale ranging from 1=strongly disagree to 7=strongly agree; DP was measured using a 6-point scale ranging from 1=strongly disagree to 6=strongly agree; EP was measured using a 5-point scale ranging from 1=strongly disagree to 5=strongly agree. Different scale range was used in order to maintain the measurement scale used in the original scales. A pilot test was done (3 Portuguese JEs) to test the clarity and comprehensibility of the content of the items. Few adaptations were done after the reverse translation and the pre-test.

The final structure of the survey was: (1) characteristics of the JE (country, foundation year, area of activity, members' area of study, number of students currently involved, number of students involved since foundation); (2) MO scale; (3) EO scale; (4) EP scale; (5) DP scale; (6) CP scale; (7) objective data related to the number of clients, projects and turnover in the last three years (not mandatory); (8) email to receive de results (optional); (9) observations (optional).

#### **3.2.5. Data Collection**

The survey containing two versions (Portuguese and English) was posted in the survey platform of the University of Aveiro. The link of the survey was sent to JEs' Executive Board members through email and social networks between March and May 2018. It was also sent to JADE (the European Confederation of JEs) and to national federations, so they can publish in their internal communication.

### **3.3. Statistical Procedures**

Data collected was statistically analysed utilizing IBM® SPSS (v.25 for Windows). A Principal Component Analysis (PCA) was conducted to test the dimensionality of MO, EO and performance measurement instruments. Then, the reliability analysis of the new dimensions was done by analysing the item-total correlation and the Cronbach's Alphas. A Pearson correlation coefficient was computed to assess the relationship between the new dimensions. Finally, regression analyses were used to test the direct and mediator effects between the dimensions.



## 4. Analysis and Discussion

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### 4.1. Exploratory Measurement Model

A Principal Component Analysis (PCA) was conducted to test the dimensionality of MO, EO and performance measurement instruments. To evaluate the number of factors to retain, we observed the Kaiser's criterion and the scree plot, and the theoretical interpretability of the dimensions (Field, 2009).

For assuring the continuity of the procedure three measures were attended: (1) the Kaiser-Meyer-Olkin of sampling adequacy (KMO) with a value greater than .70 (Field, 2009); (2) a statistically significant Bartlett's test of sphericity (Field, 2009); and (3) a sample size greater than 50 and with at least 5 subjects per item (Hair, Black, Babin, Anderson, & Tatham, 2006). To maximize the dispersion of loadings within factors, a varimax rotation was employed and observing the rotated matrix items with loadings equal or higher than 0.5 and with no cross-loadings were retained (DeVellis, 2012; Field, 2009).

After obtaining the new components, internal consistency was measured using Cronbach's Alpha. The item-total correlation was observed to assure the quality of each item for the computed score. Cronbach's alpha helps to measure the unidimensionality or the extent to which the scale measures one underlying factor or construct (Field, 2009). The threshold for considering an adequate measure was .60 (DeVellis, 2012).

#### 4.1.1. Market Orientation

In the case of MO measurement, the subject-to-item ratio is 5:1, the threshold to conduct a PCA according to Hair et al. (2006). A PCA was conducted and several items had to be excluded (considering sequential analysis): 5 because their loadings were lower than .50 and 1 for theoretical reasons because of content incongruence with the remaining items of the dimension. A three-dimension model with the remaining 15 items was retained, explaining 47.20% of total variance (KMO=.648; Bartlett's Test of Sphericity=335.27,  $p < .001$ ). All Cronbach Alphas, are greater than .60, which is acceptable by some authors (DeVellis, 2012) (**Table 5**).

**Component one** composes of 6 items with loadings ranging from .728 to .511 combining 2 items of intelligence generation, 1 item of intelligence dissemination and 3 items of responsiveness original scales. Despite they were part of different dimensions, all the items have things in common. All of them refer to a reaction of the organization to changes in the market, regarding its customers' complaints (MO19), needs (MO14) or preferences (MO3); its competitors (MO12 and MO13); or shifts in the industry (MO5). Narver, Slater and MacLachlan (2004, p. 336) propose the dimension *responsive market orientation* that represent "a business's attempt to understand and to satisfy customers' expressed needs", however, they just focus on the customer changes. Jones, Suoranta and Rowley (2013) proposed a dimension for MO named *responsiveness to competitor actions*, however, it is only focusing on competitors' changes. Therefore, we decided to name

component one as **reactiveness to market changes (RMC)**, referring to the organization' capacity to respond efficiently and effectively to changes in the market regarding its customers, competitor or shifts in the industry.

**Component two** composes of 5 items with loadings ranging from .730 to .550 combining 3 items of intelligence dissemination and 2 items of responsiveness original scales. All the items refer to the coordination between departments and sharing of information within the organization (MO7 and MO11 – “We have interdepartmental meetings (...);” MO8 – “When something important happens (...) the whole business knows (...);” MO16 – “Several departments get together (...);” MO18 – The activities of different departments (...) are well coordinated”).

Some authors proposed dimensions of MO that intent to show this coordination and information sharing. Examples of these dimensions are: *cross-functional integration* (Im & Workman Jr., 2014); *inter-functional coordination* (Lafferty & Hult, 2001; Narver & Slater, 1990) or *integration of business processes* (Jones et al., 2013). Our results follow the intelligence dissemination dimension of the original scale we used (Kohli et al., 1993), although focusing on the interdepartmental dissemination. Therefore, we named component two as **interdepartmental dissemination of market information (IDMI)**, which represent the organization's departments' willingness to share market information within the organization and to work in a coordinated way.

**Component three** composes of 4 items with loadings ranging from .738 to .521 combining 3 items of intelligence generation and 1 item of responsiveness original scales. All the items refer to a proactive search for customer needs and preferences (MO1 - “(...) we meet with customers (...) to find out what products and services they will need in the future.”; MO4 - “We pull end users (...) to assess the quality of our products and services”; MO6 – “We periodically review (...) effect of changes in our business (...) on customers”; MO15 – “We periodically review our product development to ensure that they are in line with what customers want”).

Some authors proposed dimensions of MO that focuses on the proactive search for customer needs and preferences such as *emphasis on customer* - “satisfying the needs and wants of a firm's customers should be inherent in any basic conceptualization of MO” (Lafferty & Hult, 2001); *market research orientation* – “items measuring the gathering or sharing of market information” (Frishammar & Hörte, 2007, p. 774), having this one a strong focus on customer needs, but including also other items; *proactive MO* – which represents “a business's attempt to understand and to satisfy customers' latent needs” (Narver et al., 2004); and *value creation* - reflecting firms' vigilance in seeking novel sources of customer (Morris et al., 2002). Based on these approaches followed by the mentioned authors, we named component three as **market vigilance** which represents the organizations' proactive search for customers' needs and preferences.

In summary, we propose that MO is a multidimensional construct which combines (1) reactiveness to market changes; (2) interdepartmental dissemination of market information; (3) market vigilance.



**Table 5** - Final matrix for PCA of MO: loadings, communalities ( $h^2$ ) and correct item correlation ( $r$ ) for each item ( $n=93$ )

Market Orientation	1	2	3	$h^2$	$r$
MO_14	.728	-.169	.143	.580	.560
MO_3	.724	.166	.034	.552	.518
MO_13	.697	-.078	-.005	.491	.571
MO_19	.669	.099	-.128	.474	.456
MO_5	.654	.190	.017	.464	.477
MO_12	.511	-.134	.049	.282	.377
MO_16	-.048	.730	.091	.544	.481
MO_11	-.135	.727	.274	.622	.588
MO_7	-.029	.579	.206	.378	.434
MO_18	.257	.550	.182	.402	.327
MO_8	.040	.550	-.244	.364	.248
MO_6	-.104	.128	.738	.571	.446
MO_1	.165	.058	.732	.566	.521
MO_4	.011	.014	.654	.429	.409
MO_15	.034	.297	.521	.361	.311
Eigenvalue	2.81	2.24	2.04		
Explained Variance (%)	18.70	14.91	13.59		
Cronbach's Alpha	.750	.657	.637		

#### 4.1.2. Entrepreneurial Orientation

In the case of EO measurement, the subject-to-item ratio is 5:1, the threshold to conduct a PCA (Hair et al., 2006). A PCA was conducted on the 18 items of the EO scale. Observing the initial solution, the scree plot showed the retention of 3 dimensions. Another PCA was computed with a varimax rotation and after observing the rotated matrix 1 item was removed due to its low loading values (.379 and .445) and cross-loading in 2 components. A three-dimension model with the remaining 17 items was retained, explaining 54.40% of total variance (KMO=.783; Bartlett's Test of Sphericity=584.37,  $p<.001$ ). All Cronbach Alphas are greater than .60, which is acceptable by some authors (DeVellis, 2012) (Table 6).

**Component one** composes of 8 items with loadings ranging from .812 to .578. It combines 2 items of risk-taking, 3 items of innovativeness, 2 items of proactiveness and 1 item of autonomy original scales. The authors of the scale used in this study (Hughes & Morgan, 2007) based their items' development in eleven different articles. One of them is Barringer & Bluedorn's (1999) work that developed a scale to measure *corporate entrepreneurship* which combined items that measure a firm's tendency toward innovation, risk-taking, and proactiveness; another cited work was Hult and Ketchen Jr.'s (2001) that combined risk-taking and proactiveness in one single dimension, which they named *entrepreneurship*.

Other authors found that innovativeness and proactiveness are commonly related (Neneh & van Zyl, 2017; Soininen et al., 2012), and inclusively Neneh and van Zyl (2017) name it *proactive innovation*. Anderson, Kreiser, Kurakto, Hornsby and Eshima's (2015) reconceptualise EO reordering it in 2 dimensions: a behavioural dimension - *entrepreneurial behaviour* (comprising

proactiveness and innovativeness) and an attitudinal dimension - *managerial attitude towards risk* (risk-taking).

The item related to autonomy (EO11 - Employees perform jobs that allow them to make and instigate changes in the way they perform their work tasks) that appear in this component is related to the innovation dimension of autonomy according to Engel (1969). Thus, it is understandable that this item is distinct from the remaining autonomy items since it is more related to the innovative capacity of the organization.

In fact, the most widely used scale to measure EO which is adapted from Covin and Slevin (1989) (built on Miller's (1983) work) combine this three dimensions as a unidimensional construct. Also, Morris et al.' (2002) suggest an interaction between risk, innovation and opportunity-driven dimensions within their *Entrepreneurial Marketing* construct. Therefore, we decide to name component one **entrepreneurial behaviour (EB)** which represent the organizations' proactive willingness to innovate and to take risks.

**Component two** composes of 5 items with loadings ranging from .800 to .597. It combines 5 items that were originally in the autonomy scale. The items represent individual responsibility and free communication dimensions of the individual professional autonomy, proposed by Engel (1969) in which Hughes & Morgan (2007) based their autonomy items. Therefore, we decide to name component two as **job autonomy (JA)** which represents the firms' strategy to encourage employees' freedom of thought and action.

**Component three** composes of 4 items with loadings ranging from .698 to .622. It comprises 3 items of competitive aggressiveness and 1 item of risk-taking original scales. The incorporation of the risk-taking item may be explained by the interpretation given by the respondents to the item that directly refer "risk-taker" as a business attribute. According to Lumpkin and Dess (1996, p. 149), "competitive aggressiveness also reflects a willingness to be unconventional rather than rely on traditional methods of competing", which can be interpreted as a need to have a risk-taking behaviour to compete through non-traditional methods. Therefore, we decide to name component three as **competitive focus (CF)** which implies that a firm is constantly reassessing its strengths and weaknesses relative to its competitors.

These results are in line with Lumpkin, Cogliser and Schneider's (2009) factor analysis that report an independence of the autonomy items in one factor, and the competitive aggressiveness items in another factor. However, they report EO as a four-dimension model, with one factor combining innovativeness and proactiveness and another factor combining risk-taking and proactiveness items, in contrast with our results that aggregate these 3 dimensions in one factor.

Our results also answer a recent call by some authors that recommend the test of alternative configurations of EO as a composite construct, changing or adapting EO dimensions to particular contexts, without neglecting Miller's (1983) core dimensions (Covin & Lumpkin, 2011; Miller, 2011; William John Wales, 2016).

Bearing this in mind, we propose that EO is a multidimensional construct encompassing one “collective catchall” (Miller, 2011): (1) entrepreneurial behaviour, composed by Miller’s (1983) core dimensions (proactiveness, innovativeness, risk-taking) and two other dimensions (2) job autonomy and (3) competitive focus.

**Table 6** - Final matrix for PCA of EO: loadings, communalities ( $h^2$ ) and correct item correlation ( $r$ ) for each item ( $n=93$ )

<b>Entrepreneurial Orientation</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b><math>h^2</math></b>	<b><math>r</math></b>
EO10	.812	.188	.004	.697	.715
EO8	.788	.217	.046	.690	.710
EO17	.754	-.184	.120	.619	.612
EO11	.672	.345	-.057	.589	.579
EO16	.654	-.121	.372	.627	.574
EO18	.620	.299	.156	.586	.587
EO7	.602	.236	.206	.488	.571
EO14	.578	-.055	.296	.473	.510
EO1	.061	.800	-.057	.672	.661
EO12	.137	.738	-.045	.671	.568
EO2	.132	.715	.203	.669	.598
EO3	-.013	.699	-.004	.491	.508
EO9	.308	.597	.263	.637	.505
EO13	.099	.032	.698	.635	.414
EO6	.174	-.024	.690	.518	.435
EO5	.019	.311	.649	.559	.412
EO4	.159	-.017	.622	.477	.391
Eigenvalue	4.01	3.04	2.20		
Explained Variance (%)	23.58	17.87	12.95		
Cronbach’s Alpha	.861	.784	.632		

#### 4.1.3. Performance

In the performance measurement we decided to analyse individually the component matrix of each dimension for the following reasons: we believe that scales measure different dimensions, each dimension was adapted from different authors, and the range of the response scale is different for each dimension.

##### 4.1.3.1. Economic Performance

In the case of EP measurement, the subject-to-item ratio is 15:1, higher than the threshold to conduct a PCA (Hair et al., 2006). A PCA was conducted and there were no items removed. The six original items were retained, explaining 54.40% of total variance ( $KMO=.725$ ; Bartlett’s Test of Sphericity=584.37,  $p<.001$ ). Analysing the item-total correlation ( $r>.402$ ) and the Cronbach Alpha ( $\alpha=.825$ ), we concluded that the reliability of the scale is high (DeVellis, 2012) (**Table 7**).

#### 4.1.3.1. Development Performance

In the case of DP measurement, the subject-to-item ratio is 15:1, higher than the threshold to conduct a PCA (Hair et al., 2006). A PCA was conducted and there were no items removed. The six original items were retained, explaining 61.64% of total variance (KM=.789; Bartlett's Test of Sphericity=280.65,  $p < .001$ ). Analysing the item-total correlation ( $r > .603$ ) and the Cronbach Alpha = .873, we concluded that the reliability of the scale is high (DeVellis, 2012) (**Table 8**).

**Table 7** - Final matrix for PCA of EP: loadings, communalities ( $h^2$ ) and correct item correlation ( $r$ ) for each item (n=93)

<b>Economic Performance</b>	<b>1</b>	<b><math>h^2</math></b>	<b><math>r</math></b>
EP_5	.812	.659	.697
EP_3	.783	.614	.667
EP_4	.761	.579	.617
EP_2	.741	.549	.580
EP_6	.693	.480	.568
EP_1	.634	.402	.497
Eigenvalue	3.28		
Explained Variance (%)	54.73		
Cronbach's Alpha	.825		

**Table 8** - Final matrix for PCA of DP: loadings, communalities ( $h^2$ ) and correct item correlation ( $r$ ) for each item (n=93)

<b>Development Performance</b>	<b>1</b>	<b><math>h^2</math></b>	<b><math>R</math></b>
DP_5	.870	.659	.743
DP_6	.842	.480	.786
DP_4	.781	.579	.667
DP_3	.763	.614	.651
DP_2	.722	.549	.612
DP_1	.720	.402	.603
Eigenvalue	3.70		
Explained Variance (%)	61.64		
Cronbach's Alpha	.873		

#### 4.1.3.2. Customer Performance

In the case of CP measurement, the subject-to-item ratio is 31:1, higher than the threshold to conduct a PCA (Hair et al., 2006). A PCA was conducted and there were no items removed. The three original items were retained, explaining 73.68% of total variance (KMO=.656; Bartlett's Test of Sphericity=112.46,  $p < .001$ ). Analysing the item-total correlation ( $r > .560$ ) and the Cronbach Alpha = .809, we concluded that the reliability of the scale is high (DeVellis, 2012) (**Table 9**).

**Table 9** - Final matrix for PCA of CP: loadings, communalities ( $h^2$ ) and correct item correlation ( $r$ ) for each item ( $n=93$ )

Customer Performance	1	$h^2$	$R$
CP_2	.915	.837	.762
CP_1	.877	.769	.680
CP_3	.778	.605	.560
Eigenvalue	2.21		
Explained Variance (%)	73.68		
Cronbach's Alpha	.809		

#### 4.1.4. Level of association between MO, EO and performance

A Pearson correlation coefficient was computed to assess the relationship between the new dimensions. The correlation matrix shows that EB and DPERF are positively and significantly correlated with all dimensions,  $r(93)=+.339$ ,  $p<.01$  and  $r(93)=+.276$ ,  $p<.01$ , respectively. Between EO dimensions all of them are significantly correlated  $r(93)=+.209$ ,  $p<.05$ . Also, performance dimensions are highly correlated  $r(93)=+.538$ ,  $p<.01$ . In contrast, among MO dimensions, RMC is not correlated with any other MO dimension, only CF and IDMI are correlated  $r(93)=+.290$ ,  $p<.01$ . These results suggest that all the dimensions are related to the development of the students participating in JEs. Also, JEs' entrepreneurial behaviour is highly correlated with performance dimensions suggesting that potentially this dimension will have a positive impact on JEs' performance. To notice that, except for RMC with 5 (of the 8 remaining dimensions) and of the correlation between JA and CF, all the other correlations are significant, resulting in 30 significant correlations  $r(93)=+.209$ ,  $p<.05$  of the total 36 correlations (**Table 10**).

**Table 10** - Correlation Matrix between EO, MO and performance dimensions

	EB	JA	CF	RMC	MF	CPERF	EPERF	DPERF
EB	1							
JA	.339**	1						
CF	.368***	.209*	1					
RMC	.379***	.327**	-.032	1				
IDMI	.477***	.257*	.290**	.031	1			
MV	.486***	.018	.282**	.060	.293**	1		
CPERF	.509***	.212*	.238*	.180	.324**	.530***	1	
EPERF	.527***	.346**	.360***	.055	.399***	.382***	.560***	1
DPERF	.568***	.408***	.284**	.276**	.445***	.426***	.591***	.538***

Note: \* $p<.05$  \*\* $p<.01$  \*\*\*  $p<.001$ ; EB – Entrepreneurial Behaviour; JA – Job Autonomy; CF – Competitive Focus; RMC – Reactiveness to Market Changes; IDMI – Interdepartmentally Dissemination of Market Information; MV – Market Vigilance; CPERF – Customer Performance; EPERF – Economic Performance; DPERF – Development Performance

## 4.2. EO as a mediator of MO-Performance

Before conducting the regression analysis for each dimension, we comprise the three dimensions of performance in one dimension (performance) for two reasons. First, in similar studies, other authors suggested an aggregation of different performance measures that explain the overall performance of an organization (Kara et al., 2004; Migliori et al., 2017; Sisay, Verhees, & van Trijp, 2017; Solano Acosta et al., 2018). Second, analysing the correlation between these dimensions we found that they are all highly correlated  $r(93)=+.538$ ,  $p<.01$  (**Table 10**). Based on these, we run a PCA forcing all the three dimensions of performance into a unidimensional solution. The factor loadings were between .561 and .730, explaining 43.49% of the total variance (KMO=.809; Bartlett's Test of Sphericity=803.33,  $p<.001$ ). After this, we summed the 3 components into a single variable – *performance*.

In line with Baron and Kenny (1986), to test a mediation effect, which postulate the mediating role of a variable in the relationship between an independent variable and a dependent variable, it is required the validation of four conditions: (1) there is a significant direct link between independent variable and the dependent variable; (2) there is a significant direct link of the independent variable and the mediator; (3) there is a significant direct link between mediator and the dependent variable. If these three conditions are satisfied we can proceed to the fourth condition - (4) when controlled both mediator and independent variable on the dependent variable, if the relationship between the independent variable on the dependent variable is no longer significant or was at least reduced and the mediator-dependent link is still significant, it is proven that there is a total or a partial mediation. If the effect of the independent variable on the dependent variable is reduced to zero it is proven a total mediation effect by the mediator in the analysis if the relationship is reduced but not to zero, it is proven a partial mediation effect. We will test this four conditions using linear regression models, as suggested by Baron and Kenny (1986). In the following points, we present these procedures for each MO dimension, mediated by each EO dimension.

### 4.2.1. Mediating Reactiveness to Market Changes - Performance

One step to test the mediator effect of EO dimensions in the relationship between RMC and performance is to run simple linear regressions to verify if RMC relates to each EO dimension. The results show that RMC positively influences EB ( $B=.330$  ( $SE=.085$ );  $\beta=.379$ ;  $t(1)=3.90$ ;  $p<.001$ ) and JA ( $B=.307$  ( $SE=.093$ );  $\beta=.327$ ,  $t(1)=3.30$ ;  $p<.01$ ), but there is no significant direct effect of RMC on CF ( $B=-.035$  ( $SE=.115$ );  $\beta=-.035$ ,  $t(1)=-.304$ ,  $p=.762$ ).

With these previous results, we cannot test the mediator effect of CF because RMC does not have a significant direct impact on it. In **Table 11** we present the result of the simple linear regression of RMC on performance. As this result is significant and positive, we advance to control both the mediators (EB and JA) and RMC on performance. Analysing these results of **Table 11** we confirm that there is a total mediation of both EB and JA between RMC and performance because, when

mediated by these dimensions, the effect of RMC on performance is reduced to zero ( $\beta=-.039$ ,  $p>.10$ ) and ( $\beta=.090$ ,  $p>.10$ ) respectively.

Our results suggest that the higher the organizational capacity to respond to changes in the market regarding its customers, competitors, etc. (RMC), the higher will be the organizations' willingness to take risks and come up with proactive innovations (EB) and the encouragement of employees' freedom of thought and action (JA). This result is in line with other authors that suggest the higher the capacity of organizations to react to competitors and customers' changes, the higher the capacity they will have to create a more innovative, risky and aggressive approach to the market (Frishammar & Hörte, 2007; Narver et al., 2004). In turn, enhanced EB and JA (when organizations' members are more willing to take risks and to encourage free thinking and action) lead to the creation of more value and to higher performance.

**Table 11** – Testing mediator effects on RMC-Performance

	<i>B</i>	<i>SE</i>	$\beta$	<i>R</i> <sup>2</sup>
Independent: RMC	2.18	1.07	.208*	.043
Mediator: Entrepreneurial Behaviour				
RMC	-.407	.918	-.039	.408
EB	7.83	1.05	.652***	
Mediator: Job Autonomy				
RMC	.946	1.07	.090	.159
JA	4.02	1.14	.360**	

Note: \* $p<.05$  \*\* $p<.01$  \*\*\*  $p<.001$ ; EB – Entrepreneurial Behaviour; JA – Job Autonomy; RMC – Reactiveness to Market Changes.

#### 4.2.2. Mediating Interdepartmentally Dissemination of Market Information - Performance

As similar to the previous analysis, to investigate the mediator effects of EO dimensions in the relationship between IDMI and performance we firstly run simple linear regressions to verify if IDMI relates to EO dimensions. The results show that IDMI positively influences EB ( $B=.413(SE=.080)$ ;  $\beta=.477$ ;  $t(1)=5.17$ ;  $p<.001$ ), JA ( $B=.239(SE=.094)$ ;  $\beta=.257$ ;  $t(1)=2.54$ ;  $p<.05$ ) and CF ( $B=.316(SE=.110)$ ;  $\beta=.290$ ;  $t(1)=2.89$ ;  $p<.01$ ).

With these previous results, we can test the mediator effect of all EO dimensions on IDMI - performance relationship. In **Table 12** we present the result of the simple linear regression of IDMI on performance. As this result is significant and positive, we advance to control both the mediators (EB, JA and CF) and IDMI on performance. Analysing the results of **Table 12** we confirm that there is a partial mediation of EO dimensions (EB, JA and CF) between IDMI and performance because, when mediated by these dimensions, the effect of IDMI on performance is reduced, but not to zero. However, the reductions when JA and CF mediate the relationship between IDMI and performance are small. Further studies should confirm these mediation effects on this relationship.

Our results suggest that the sharing of market information within the organization and the coordination between departments (IDMI), will lead to a higher willing to take risks and come up with proactive innovations (EB), to focus on exploiting competitors' strengths and weaknesses and to overcome them (CF) and to a higher encouragement of employees' freedom of thought and action (JA). These results are supported by previous literature that reports that more information and more coordination lead to a more comfortable perception of the organizations' capacity which rises the entrepreneurial behaviour and the capacity to be more aggressive and autonomous (Grimstein, 2008; Luo et al., 2005). In turn, enhanced EB, CF, JA (when organizations' members are more willing to take risks, to overcome its competition and to think and act freely) will lead the creation of more value and a higher performance.

**Table 12** - Testing mediator effects on IDMI-Performance

	<i>B</i>	<i>SE</i>	$\beta$	<i>R</i> <sup>2</sup>
Independent: IDMI	4.85	.964	.467***	.218
Mediator: Entrepreneurial Behaviour				
IDMI	2.19	.932	.211*	.441
EB	6.44	1.08	.537***	
Mediator: Job Autonomy				
IDMI	4.08	.952	.393***	.296
JA	3.22	1.02	.289**	
Mediator: Competitive Focus				
IDMI	4.15	.980	.399***	.268
CF	2.30	.897	.234*	

Note: \* $p < .05$  \*\* $p < .01$  \*\*\*  $p < .001$ ; EB – Entrepreneurial Behaviour; JA – Job Autonomy; CF – Competitive Focus; IDMI – Interdepartmentally Dissemination of Market Information.

#### 4.2.3. Mediating Market Vigilance - Performance

As similar to the previous analysis, we run simple linear regressions to verify if MV relates to each EO dimension. The results show that MV positively influences EB ( $B = .374$  ( $SE = .070$ );  $\beta = .486$ ;  $t(1) = 5.31$ ;  $p < .001$ ) and CF ( $B = .273$  ( $SE = .097$ );  $\beta = .282$ ;  $t(1) = 2.80$ ;  $p < .01$ ). However, MV has no significant influence in JA ( $B = .015$  ( $SE = .087$ );  $\beta = .018$ ;  $t(1) = .172$ ;  $p = .864$ )

With these previous results, we cannot test the mediator effect of JA because MV does not have a significant direct impact on it. In **Table 13** we present the result of the simple linear regression of MV on performance. As this result is significant and positive, we advance to control both the mediators (EB and CF) and IDMI on performance. Analysing the results of **Table 13** we confirm that there is a partial mediation of EB and CF between MV and performance because when mediated by these dimensions the effect of MV on performance is reduced, but not to zero. However, the reduction is very small when CF mediates the relationship between MV and performance, further studies should confirm this mediation effect.



These results suggest that organizations who proactively search for customers' needs and preferences (MV), will be more willing to take risks and come up with proactive innovations (EB) and to focus on exploiting competitors' strengths and weaknesses (CF). Only when organizations are comfortable with their knowledge about their customers', they can take risks, be more innovative and be more aggressive to its competitors. In turn, enhanced EB and CF (when they are more willing to take risks and to overcome its competition) will lead the creation of more value and a higher performance. This result supports similar findings that verify a positive relationship between the continuous search for customers' needs and preferences, thus accumulating the knowledge that organizations need to become more entrepreneurial-oriented (Liu, Luo, & Shi, 2002; Luo et al., 2005; Sciascia et al., 2006). In turn, enhanced EB and CF (when organizations' members are more willing to take risks and to overcome its competition) will lead the creation of more value and a higher performance.

**Table 13** - Testing mediating effects on MV-Performance

	<i>B</i>	<i>SE</i>	$\beta$	<i>R</i> <sup>2</sup>
Independent: MV	4.86	.822	.527***	.277
Mediator: Entrepreneurial Behaviour				
MV	2.62	.811	.284**	.468
EB	6.00	1.06	.500***	
Mediator: Competitive Focus				
MV	4.29	.835	.465***	.321
CF	2.08	.862	.219*	

Note: \* $p < .05$  \*\* $p < .01$  \*\*\*  $p < .001$ ; EB – Entrepreneurial Behaviour; CF – Competitive Focus; MV – Market Vigilance.

With these three mediation analyses we conclude that all EO dimensions are significantly related to a MO dimension, mediate, totally or partially, the relationship between this MO dimension and performance, suggesting that EO plays a key role in the organizations strategic orientation by mediating the relationship MO-Performance, supporting our *Hypothesis 3*. These results are consistent with Shavazi et al. (2015) that suggest that MO improve performance via EO and with other authors that report the mediator effect of some EO dimensions in market orientation-performance link (Bhuiyan & Habib, 2004; Han et al., 1998).

#### 4.2.4. Discussing the direct effects of MO, EO and Performance

As a requirement to test the mediating effects, we run simple linear regressions between MO dimensions and performance. We found out that all MO dimensions have a significant positive influence on JEs' performance, supporting *Hypothesis 1*. This suggests that the higher the proactive search for market opportunities and alertness to market changes, the dissemination of market information within the organization and the capacity to develop effective response strategies, the higher the JEs performance. These results confirm the extensive literature that verifies MO impact on organizations' performance (Ellis, 2006; Grimstein, 2008).

Also, a necessary step to test the mediator effect is to verify the relationship between MO dimensions and EO dimensions. Our results suggest that almost all MO dimensions have a positive impact in EO dimensions (7 of the 9 relationships are significant, the exception were RMC on CF and MV on JA). Therefore, higher market-oriented JEs are more likely to be more entrepreneurial-oriented. An interpretation for this is that the gathering, accumulation and dissemination of market information within the JE are necessary to determine JE entrepreneurial behaviours (Bhuan et al., 2005; Grimstein, 2008; Luo et al., 2005).

Finally, through the mediation effects tests, we found that EO dimensions are positively related to JEs' performance. The higher the proactive willingness to innovate and to take-risks (EB), the encouragement of employees' freedom of thought and action (JA) and the constant focus on competitors (CF), the higher the performance of the JE, therefore supporting *Hypothesis 2*. These results are in line with Rauch et al.'s (2009) meta-analysis that reports a robust relationship between EO and organizations' performance.

#### 4.2.5. Summary of Results

**Table 14** presents a summary of the results concerning the hypotheses. Hypothesis 1 and 2 were totally supported meaning that the higher the degree of MO and EO, the greater the performance of JEs. Hypothesis 3 is partially supported because 7 of the 9 mediation analysis are significantly positive. The remaining 2 analyses are not supported due to the insignificant effects of RMC on CF and of MV on JA. Then, we concluded that EO is a mediator of MO - performance.

**Table 14** - Validation results of the hypotheses

Hypothesis	Characterization	Results
<b>H1</b>	The higher the degree of RMC, the higher the performance.	Supported
	The higher the degree of IDMI, the higher the performance.	Supported
	The higher the degree of MV, the higher the performance.	Supported
<b>H2</b>	The higher the degree of EB, the higher the performance.	Supported
	The higher the degree of JA, the higher the performance.	Supported
	The higher the degree of CF, the higher the performance.	Supported
<b>H3</b>	EB mediates the relation between RMC and performance.	Supported
	JA mediates the relation between RMC and performance.	Supported
	CF mediates the relation between RMC and performance.	Not supported
	EB mediates the relation between IDMI and performance.	Supported
	JA mediates the relation between IDMI and performance.	Supported
	CF mediates the relation between IDMI and performance.	Supported
	EB mediates the relation between MV and performance.	Supported
JA mediates the relation between MV and performance.	Not supported	
	CF mediates the relation between MV and performance.	Supported

Note: EB – Entrepreneurial Behaviour; JA – Job Autonomy; CF – Competitive Focus; RMC – Reactiveness to Market Changes; IDMI – Interdepartmentally Dissemination of Market Information; MV – Market Vigilance; CPERF – Customer Performance; EPERF – Economic Performance; DPERF – Development Performance

## 5. Conclusions

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Despite the importance of JEs being widely recognized by policymakers and researchers (Bogo et al., 2014; Gruber-Muecke & Kailer, 2011; JADE, 2016b, 2016a; Pennarola et al., 2016), the research carried out around JEs is very scarce and there are no studies published exploring the organizational characteristics of a JE. This gap in the literature leads to a lack of understanding of how JEs operate, how their performance can be improved and, in the end, how their impact on JE's participants' development can be enhanced.

Although JEs are not "real companies" and their main goal is the development of their members, they need to have a sustainable internal and external performance in order to achieve its primary objective. Therefore, understanding JEs organizational characteristics and strategic orientations in a more competitive and uncertain environment is crucial to their success, as it happens in enterprises or other organizations (González-Benito et al., 2009; Miles & Arnold, 1991; Sciascia et al., 2006).

Based on these assumptions, the aim of this study was to assess the EO and MO of JEs and their impact on performance. Studies on MO and EO are widely disseminated in the literature (Ellis, 2006; Gupta et al., 2017; Wales et al., 2013), however none of these studies focused on JEs or similar organizations. We found that there are many measurement models of MO and EO based on different conceptualizations and adapted to different contexts. We have analysed the adapted models to NPOs (Miles et al., 2013; Modi & Mishra, 2010), however, none of these models was adequate to JEs, due to their characteristics and objectives. Then, we decided to focus on the most reported measurement models of MO (Kohli et al., 1993; Narver & Slater, 1990) and of EO (Covin & Slevin, 1989; Lumpkin & Dess, 1996) mostly designed to for-profit enterprises or social enterprises. We have conducted an exploratory analysis that allowed us to refine the scales of MO and EO to better fit the characteristics of JEs, creating new dimensions measured by a new set of items. Analysing the content of the items that were removed, in fact, most of the items are not applicable to JEs' reality.

The new MO dimensions (reactiveness to market changes, interdepartmental dissemination of market information and market vigilance) reflects the JEs capacity to respond efficiently and effectively to changes in the market regarding its customers, competitor or shifts in the industry, to share market information within the organization, working in a coordinated way and proactively search for customers' needs and preferences. The new dimensions of EO (entrepreneurial behaviour, job autonomy and competitive focus) represent the JEs' proactive willingness to innovate and to take risks, encouraging freedom of thought and action of its members and constantly searching for competitors' strengths and weaknesses.

These exploratory analyses contribute to the identified gap in the literature of models that measure MO and EO on JEs or similar organizations.

The several regression analysis and test to the mediation effects, conducted with the new dimensions, reported several important results. Firstly, we discovered that all MO dimensions positively and significantly contribute to a better performance of JEs, supporting *Hypothesis 1*. Secondly, we found out that almost all the effects (7 out of 9) of MO dimensions on EO dimensions are positive and significant, suggesting that the higher the market resources (information, knowledge, etc.), the capacity to accumulate and disseminate them and to respond to market needs and changes, the higher will be the JEs focus on competition and willingness to take risks and to come up with proactive innovations. Thirdly, through the mediation effects test, we discovered that EO dimensions are positively and significantly related to the performance of the JEs, supporting *Hypothesis 2*. Finally, all EO dimensions that are significantly related to MO dimension, mediate, totally or partially, the relationship between this MO dimension and performance, suggesting that EO plays a key role in the organizations strategic orientation by mediating the relationship MO-Performance, supporting *Hypothesis 3*.

In accordance with other authors, we concluded that MO is a viable strategic orientation for JEs, and if combined with other strategic orientations (as EO) JEs are more likely to improve their performance (Grimstein, 2008).

### **5.1. Contributions**

This study makes several theoretical and practical contributions, for literature, for JEs and for universities. Regarding literature, this study confirms the impact of MO and EO dimensions on student NPOs' performance, contributing for MO and EO literature that normally analyses these dimensions in large companies, SMEs or social enterprises. In addition, it fulfils the need, highlighted by many authors, for new dimensionalities and measurement models of the EO construct, proposing that EO can be viewed as a multi-dimensional construct that combines one dimension, comprising proactiveness, innovativeness and risk-taking proposed by Miller (1983), with other dimensions (such as competitive focus or job autonomy, as we propose). Finally, according to Boyd et al.'s (2012) review which report that mediation analysis is rarely used in strategic management and to other calls for studies analysing the mediators in the MO literature (Gupta et al., 2017), we provide some insights to the literature, confirming the effect of EO dimensions in a partial or total mediation between MO and performance.

For JEs, we highlight the importance of JEs' managers and members to understand and be conscious of their JE' capabilities, weaknesses and resources in order to define its strategic orientation to be more competitive, sustainable and, in this way, create more impact for their members, in the business world and in society. Also, JEs confederations can play a key role in developing training programs and support materials to improve the understanding of these strategic orientations. Finally, with such a growing network of students participating in JEs, we expect that the results of this study provide important insights on JEs' characteristics helping universities and teachers to know how to support the development of these organizations and how they can incorporate it into the educational process and courses' curricula.

## **5.2. Limitations**

As with any empirical investigation, the present study has several limitations. Firstly, despite the significant dimension of our sample, a larger sample would allow us to run a more robust statistical analysis, assessing, for example, the impact of each new dimension in a unidimensional construct. In addition, we did not assess the impact of control variables such as country, JE size, core business or study area of its members due to this sampling issue. Secondly, as we stated before, the challenge to use existent MO and EO scales is high because most of them do not fit in the reality and characteristics of organizations like JEs. Thirdly, since it was used in this research Likert scales, it means that results are based on the subjective judgement of respondents. In addition, in the performance measurement, even if previous research has exhibited a high correlation between objective and subjective performance indicators, it is possible that some answers are not completely accurate measuring the constructs in the model. Finally, we have conducted an exploratory factor analysis and test the effects of the new dimensions, although not confirming the new scale and dimension in a different sample of JEs. Without any doubt, this research must be refined with a more rigorous sampling procedure.

## **5.3. Future research suggestions**

Further confirmatory factor analysis in a different sample of JEs (or similar organizations) are needed to test the new dimensions and scale we develop in this study. Also, further studies should assess the mediation effects of EO dimensions that lead to a small reduction in the effect of MO dimensions and performance in order to confirm this mediation.

We suggest that analysing and comparing these dimensions between JEs (or similar organizations) of different study areas and/or different countries will bring important insights to the refinement and adaptation of this scales to JEs (or similar organizations) reality.

With regard to the methodology, in line with numerous calls from many authors, we think that qualitative research and longitudinal research are needed to understand deeply the strategic orientations perceptions of managers and members and to assess the long-term impact and evolution of the strategic orientations of the organizations (Deutscher et al., 2016; Miller, 2011; William John Wales, 2016; Wiklund & Shepherd, 2011). Also, studies that combine mediation and moderation are lacking in strategic orientation research (Boyd et al., 2012), which we think it is a good line of future research. We consider also relevant to study new models of measuring EO, by for example testing EO as a multi-dimensional construct that combines the core dimension (proactiveness, innovativeness and risk-taking) proposed by Miller (1983), with other dimensions (such as competitive focus or job autonomy, as we propose).

Another important thought is the idea that organizational characteristics and strategies of JEs (or similar organizations) may shape the behaviour of their members (Wales, 2016), therefore we think that studies that relate to organizational-individual behaviours are needed within this research area. Finally, as stated at the beginning of this study, there is a lack of research on organizations like JEs, therefore it is urgent to understand their characteristics and impact on students' to be possible to recommend specific measures in order for them to improve their performance and consequently enhance the impact on students, universities, businesses and local community.

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## Appendix I

### Number of Junior Enterprises per country

Country	Number of JEs	%
Austria	5	0.51
Belgium	10	1.01
Croatia	1	0.10
France	177	17.88
Germany	66	6.67
Italy	18	1.82
The Netherlands	12	1.21
Poland	3	0.30
Portugal	14	1.41
Spain	17	1.72
Sweden	1	0.10
Switzerland	9	0.91
United Kingdom	1	0.10
<b>Total Europe</b>	<b>334</b>	<b>33.74</b>
Brazil	601	60.71
Canada	3	0.30
Morocco	8	0.81
Tunisia	38	3.84
United States of America	6	0.61
<b>Total Worldwide</b>	<b>990</b>	<b>100</b>

Source of data: (Junior Enterprise Global Council, 2018a)

## Appendix II Measurement Scales

Market Orientation	Survey Items
Intelligence Generation	MO1 In this business unit, we meet with customers at least once a year to find out what products or services they will need in the future.
	MO2 In this business unit, we do a lot of in-house market research.
	MO3* We are slow to detect changes in our customers' product preferences.
	MO4 We poll end users at least once a year to assess the quality of our products and services.
	MO5* We are often slow to detect fundamental shifts in our industry (e.g. regarding competition, technology, regulation). (RS)
	MO6 We periodically review the likely effect of changes in our business environment (e.g., regulation) on customers
Intelligence Dissemination	MO7 We have interdepartmental meetings at least once a quarter to discuss market trends and developments.
	MO8 When something important happens to a major customer of market, the whole business unit knows about it within a short period.
	MO9 Marketing personnel in our business unit spend time discussing customers' future needs with other functional departments.
	MO10 Data on customer satisfaction are disseminated at all levels in this business unit on a regular basis.
	MO11 We have interdepartmental meetings (between functional area departments) frequently to discuss market trends and developments.
	MO12* When one department finds out something important about competitors, it is slow to alert other departments.
Responsiveness	MO13* It takes us forever to decide how to respond to our competitor's price changes.
	MO14* For one reason or another we tend to ignore changes in our customer's product or service needs.
	MO15 We periodically review our product development efforts to ensure that they are in line with what customers want.
	MO16 Several departments get together periodically to plan a response to changes taking place in our business environment.
	MO17 If a major competitor were to launch an intensive campaign targeted at our customers, we would implement a response immediately.
	MO18 The activities of the different departments in this business unit are well coordinated.
	MO19* Customer complaints fall on deaf ears in this business unit.
	MO20* Even if we came up with a great marketing plan, we probably would not be able to implement it in a timely fashion.
MO21 When we have customer requests to modify a service, the involved departments try hard to meet the request.	



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## Entrepreneurial Orientation

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Risk-taking	EO_5	The term "risk taker" is considered a positive attribute for people in our business.
	EO_18	People in our business are encouraged to take calculated risks with new ideas.
	EO_7	Our business emphasizes both exploration and experimentation for opportunities.
Innovativeness	EO_14	We actively introduce improvements and innovations in our business.
	EO_8	Our business is creative in its methods of operation.
	EO_10	Our business seeks out new ways to do things.
Proactiveness	EO_16	We always try to take the initiative in every situation (e.g., against competitors, in projects when working with others).
	EO_17	We excel at identifying opportunities.
	EO_15	We initiate actions to which other organizations respond.
Competitive aggressiveness	EO_13	Our business is intensely competitive.
	EO_4	In general, our business takes a bold or aggressive approach when competing.
	EO_6	We try to undo and out-manuever the competition as best as we can.
Autonomy	EO_1	Employees are permitted to act and think without interference.
	EO_11	Employees perform jobs that allow them to make and instigate changes in the way they perform their work tasks.
	EO_3	Employees are given freedom and independence to decide on their own how to go about doing their work.
	EO_12	Employees are given freedom to communicate without interference.
	EO_9	Employees are given authority and responsibility to act alone if they think it to be in the best interests of the business.
	EO_2	Employees have access to all vital information.

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## Performance

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Economic Performance	EP1	We are more effective in serving our beneficiaries than others.
	EP2	In the past few years, we have increased our effectiveness.
	EP3	We are more efficient in serving our beneficiaries than others.
	EP4	In the past few years, we have increase our efficiency.
	EP5	In the past few years, our financial situation has improved.
	EP6	Our organization is financially sustainable.

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Development Performance	DP1	The prospect of our organization is good.
	DP2	The satisfaction of our service object is high.
	DP3	Our employees are satisfied with the current business model.
	DP4	The coordination is high among our employees.
	DP5	Our employees are satisfied with the organization.
	DP6	Our employees are satisfied with participating organization.
Customer Performance	CP1	We have been able to attract totally new customers this year.
	CP2	We have been able to expand our existing customer base this year.
	CP3	We have succeeded in sustaining our customer base and achieving repeat orders.

Note: \* Reverse-coded item