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Entrepreneurial Orientation, Market Orientation and Performance of Teachers and Researchers in Public Higher Education Institutions

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Abstract. *In this study we intend to analyse the relationships between entrepreneurial orientation, market orientation and performance at the individual level. We propose the concept of individual entrepreneurial orientation (IEO) and a measurement scale, and we use the individual market orientation concept (IMO), measured with i-MARKOR.*

The main objective is to analyse the relationship between IEO, IMO and performance of teachers and researchers of the public higher education institutions (PHEI). A conceptual model is proposed representing the relationship between these variables. The results of this research can be highly useful in understanding the interaction between the analysed variables and their impact on the PHEI.

Keywords: *individual entrepreneurial orientation, individual market orientation, performance, entrepreneurial orientation and market orientation.*

Raktažodžiai: *Individualaus orientacija į verslumą, individuali orientacija į rinką, veiksmas, orientacija į verslumą, orientacija į rinką.*

Introduction

With the globalisation of markets, there is virtually no sector where competition has not grown significantly [8], also including higher education. Higher education has been the focus of significant growth in recent decades. In this context, the educational market has undergone changes and competition among institutions of higher education worldwide was established [30; 47].

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The contribution of this work focuses on the fusion of two theoretical approaches to business strategies: entrepreneurial orientation and market orientation, applied to teachers and researchers from public higher education institutions (PHEI).

The main objective of this study is to analyse the relationship between IEO, IMO and performance of teachers and researchers of the PHEI. A conceptual model is proposed representing the relationship among these variables. It is expected that the results of this research can be highly useful in understanding the interaction of the analysed variables and their impact on the PHEI.

After introducing the subject topic and having highlighted the main objective of this article, here we present a review of the literature, the methodology used throughout the study, ending with the conclusions and limits of the study.

Literature Review

Entrepreneurial Orientation

Miller and Friesen [51] argue that entrepreneurial companies are characterised by the desire to innovate on a regular and bold basis, taking significant risks in their competitive strategies and product market. Some studies also show that entrepreneurial firms tend to take more risks than others, and seek new business opportunities in a proactive manner [50; 53; 29]. In this perspective, and according to Miller [52], the organisation's entrepreneurial orientation can be seen as a combination of three different dimensions: tendency to innovation, pro-activity and risk taking. Lumpkin and Dess [43; 44] add the following dimensions: autonomy and competitive aggressiveness.

According to Covin and Miles [15], there is no innovation without entrepreneurship, arguing that the tendency for innovation – in isolation – is the dimension that best defines entrepreneurial business. The authors defined innovation as the company's tendency to support new ideas, experiences and creative processes earlier than competitors.

According to Venkatraman [75], pro-activity is an important component of entrepreneurship. The author defined this dimension as a proactive approach where we seek new opportunities, which may or may not be related to current activities undertaken by the company. The author suggests that companies can be considered proactive when they introduce new products and brands sooner than their competitors, eliminate operations that are in a mature or declining product life cycle, participate in emerging markets and anticipate the demand for new opportunities.

The concept of entrepreneurship is directly related to risk taking. Coulthard [12], citing Miller and Friesen, defines risk as the degree to which managers are willing to make large financial and risky commitments. The author also cites a study by Sarasvathy, Simon, and Lave which suggests that entrepreneurs are more likely to accept the risk as something that characterises their everyday activity. Therefore, entrepreneurs assess opportunities differently from non-entrepreneurs [63; 58].

Autonomy can be defined as the freedom granted to teams and individuals by encouraging them to exercise their creativity to bring forth an idea and be able to follow it to reach a certain conclusion [43; 44].

The entrepreneurial orientation appears well conceptualised in five different areas, but usually associated with only three: the trend towards innovation, proactivity and risk taking [52; 14; 79; 5; 18; 4; 80; 73; 37; 3].

There is a general consensus that entrepreneurial orientation influences the performance of organisations [52; 13; 14; 79; 4; 46; 21; 69], and entrepreneurial companies will have better performance and higher levels of product innovation [51].

Zahra and Covin [79] and Barrett and Weinstein [4] conclude that the relationship between entrepreneurial orientation and performance is direct and positive. And there is some evidence that this effect is more pronounced in turbulent markets [3].

Universities are encouraged to become more ‘entrepreneurial’ [55] but little is known about the entrepreneurial orientation of academic departments and how such an orientation might foster commercialisation activity [74]. Much of the empirical literature uses ENTRESALE to measure the EO of private sector firms [14; 31]. However, many authors point out that ENTRESALE has limited applicability in public or non-profit sectors, and the meaning of entrepreneurially oriented within public or non-profit sectors has just started to be explored [6; 9; 49; 54; 61; 62]. Then, in response to this problem, Todorovic, McNaughton, and Guild [74] have developed an ENTRE-U scale to measure the EO of university departments.

In this work, we intend to use the concept of entrepreneurial orientation to characterise not the organisations as a whole, but rather the individuals who adopt this kind of behaviour. The EO has been widely studied in organisations, but not at the individual level. In this study, we intend to use the I-ENTRE-U scale to identify entrepreneurially-oriented individuals (teachers and researchers) in PHEI.

Market Orientation

Over the years there has been a dynamic evolution from the marketing concept to market orientation [69].

Thus, over time, there have been several approaches to market orientation, such as the approach of Narver and Slater, and Kohli and Jaworski.

Based on several studies that examined the relationship between competitive advantage and market orientation [1; 2; 16; 36; 42; 60; 67; 68], Narver and Slater [56] conclude that market orientation consists of three behavioural components: customer orientation, competition orientation, and inter functional coordination, and two decision criteria: long-term focus and profitability.

For the authors, customer orientation and competition orientation include all activities involved in acquiring information about buyers and competitors in the target market and its dissemination throughout the company. Inter functional coordination, the third behavioural component, is based on information about customers and competitors and includes the

coordinated efforts of the entire company to create value for customers. In short, the three behavioural components of market orientation activities include the acquisition and dissemination of market information and coordination of efforts to create value for customers.

For Kohli and Jaworski [32; 33], the concept of “market orientation” refers to the implementation of the marketing concept, since an organisation that develops market-oriented actions does this in consistence with the concept of marketing, in which the fundamental pillars of marketing – customer focus, coordinated marketing and profit – are present.

For Kohli and Jaworski [32; 33], the company’s market orientation is based on three dimensions: information generation, dissemination of information and response to the market because: there are one or more departments of the company to develop actions that allow it to know the current and future customer needs and the factors that affect them; there is the sharing of information by departments; and various departments develop activities to meet customer needs.

In a market-oriented company, all departments and not just the marketers are involved in responding to market trends.

According to Kohli and Jaworski [34], the consequences of market orientation affect performance, employees and clients in the organisation.

According to the authors, market orientation is a unifying element of efforts and projects of individuals and departments, leading to higher performance. Thus, the greater the degree of orientation to the company’s market, the better the performance. Associated with this is the fact that employees feel that they are making a good contribution, and feel a commitment to the organisation and satisfaction with what they do (*esprit de corps*). Thus, the authors argue that market orientation results in psychological and social benefits for employees. In the opinion of the authors, the greater the degree of market orientation, the greater the *esprit de corps*, the greater job satisfaction and increased employee commitment to the organisation. For customers, market orientation increases their satisfaction because it allows the organisation better respond to the needs and preferences of customers, which leads to repeated purchases. Therefore, the greater the degree of market orientation, the better customer satisfaction and more repeated times of purchases.

However, the focus of this literature, in terms of the unity of theory and empirical observation, is the organisation as a whole, and not an individual within the organisation [e.g. 19; 25; 34; 56]. The focus on the company ignores the underlying routines carried out by individuals who develop and shape the direction [57].

The employees of the organisation contribute to various information about the market that can create competitive advantage. Thus, the understanding of how employees define and see the behaviour of market orientation is a key success to promote market orientation [72]. People in an organisation contribute to the level of organisation of market orientation through actions such as: fostering internal and external relationships [27], with models of behaviour and social influence [22; 77], and communicating tacit knowledge [17].

However, in previous studies that individual contribution to the market orientation of a company is measured incorrectly and, for the service sector, it is fundamental to understanding and meeting the long-term needs of customers through customer and employee interaction [72].

In summary, the literature on market orientation currently offers little understanding of market-oriented perspectives and behaviours of individuals within service organisations [72]. An impediment to empirical research is the lack of a scale to measure the market orientation of individuals. Hence, the authors developed the scale I-Markor. The I-Markor scale measures how employees acquire, share and respond to market information.

This scale fits the definitions presented by Kohli and Jaworski [32; 33] of organisational orientation to the market to reflect the characteristics of individual employees. Thus, market orientation of individuals reflects the attitudes and behaviours of employees while gaining, sharing, and responding to the market.

Previous research indicates that attitudes and behaviours of an individual employee relate to market orientation of an organisation [e.g. 10; 26; 39; 40]. While individual actions and attitudes help shape and develop a total orientation to the market, organisations must clearly understand the influence of individual factors and interpersonal factors.

Langerak [41] concluded that the nature of the link between market orientation and organisational performance is not yet adequately explained. This suggests that other considerations may shape the success of a market orientation strategy.

Schlosser's and McNaughton [72] research described and tested how and why individual employees can perform routine market orientation underpinning the guidance supporting the market orientation of the organisation.

Most studies that take into account the individual in creating customer orientation are only tested with employees in sales and marketing [e.g. 65]. In this type of study, it will be important to consider various types of employees throughout the organisation to test market orientation, and not marketing orientation.

Performance

Initial studies showed that the performance of a group of individuals is better than if they work in isolation, except in cases of problem solving and judgments [81]. However, other studies have shown that the processes of social interaction developed by group members negatively affect the performance by a group of a certain task [20].

Viswesvaran [76] defines performance as individual behaviours that can be evaluated, but points out that the difference between behaviours and outcomes is unclear, as performance consists of several behavioural manifestations that are identifiable only through operational measures. Therefore, explanation of the concept of performance is made out through various dimensions that constitute it, taking the environment in which they occur into account, since the dimensions of performance are widespread, but its measurements differ in different contexts [76].

For Salgado, Moscoso and Lado [70], dimensions of performance are: knowledge, efficiency, problem solving, adaptability, leadership, leadership relations, aspirations, and attitudes.

According to Gibbons *et al.* [23], the constituent dimensions of performance are leadership, consciencialisation, problem solving, teamwork, relational or interpersonal skills, planning and organisation, motivation, readiness for development, conflict resolution, demand for information, justice, persuasion, ability to listen, creativity, adaptability, oral communication, stress management, written communication and cultural adaptability.

Cheng, Li and Fox [11] determine the knowledge performance dimensions relevant to work: the quality of work, skill, judgment, experience, accuracy, accountability, efficiency and initiative with regard to the tasks at work. The behavioural dimensions identified are honesty, personal care, punctuality, cooperation, attitude, and equity. For management, the authors present five dimensions: relationships with guests, leadership, communication skills, interpersonal relations and planning. Finally, as regards the self, there are five dimensions: gender, age, interest, creativity and reliability. The authors note that personality traits and motivational factors can influence job performance.

The dimensions proposed by Xiaowei [78] will be used in this study, in the performance construct, because they find them to be the best for relating the dimensions of EO and MO.

Conceptual Model and Hypotheses

Proposed Conceptual Model

The literature review, theoretical models and empirical results presented in the preceding paragraphs, as well as reflections based upon them, led to the drafting of the proposed research model which will be tested through the research hypotheses.

The model proposed in Figure 1 was created as a way to respond to the research question, linking entrepreneurial orientation, market orientation and performance.

The argument is that the entrepreneurial and market orientations have a positive effect on individual performance and that the combined effect of two orientations is greater than the sum of individual effects. Furthermore, the entrepreneurial orientation functions as a positive history of market orientation.

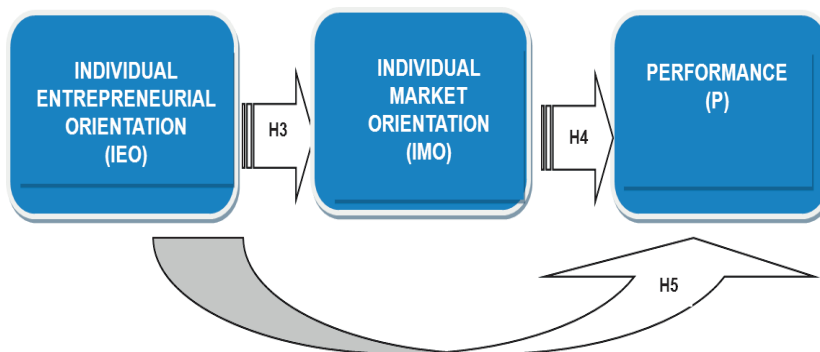


Figure 1. Proposed Conceptual Model

Development of Hypotheses

The proposed model is deconstructed into research hypotheses that can be tested. According to Covin and Slevin [14], the entrepreneurial orientation construct is constituted by three sub-constructs to form a unidimensional strategic orientation. Testing of unidimensionality was deemed necessary for the construct of the reality of polytechnic institutes at the individual level, since there are no previous studies on the behaviour of this construct in this reality.

H1: *The IEO is a dimensional construct, consisting of the sub-constructs tendency to innovation, proactive approach and willingness to take risks.*

In accordance with what has been said in literature review, point 2., the market orientation construct comprises sub-dimensions or sub-constructs. The conceptualisation of market orientation at the individual level divides the construct into sub-dimensions of information generation, information dissemination and market responsiveness.

H2: *The construct of IMO is one-dimensional, being composed of sub-constructs of information generation, information dissemination, and market responsiveness.*

For Hills and LaForge [28], the marketing and entrepreneurial behaviours are similar in nature - both expand the boundaries, involve extensive interaction with the environment, require the assumption of risk and uncertainty, and inevitably link the complexities of human behaviour with commercial and other efforts. However, both market orientation (MO) and entrepreneurial orientation (EO) constructs are correlated but distinct. Market orientation reflects the degree of strategic planning of companies' market driven by the customer and competition. The entrepreneurial orientation reflects the degree as the growth objectives of companies are driven by identifying and exploiting unexplored market opportunities.

In the research of Baker and Sinkula [3], when modelled separately, these constructs revealed direct effects of both constructs on profitability. However, when modelled simultaneously, the direct effect of EO disappeared. This has led some scholars to postulate that equal opportunity antecedes MO. The results of Baker and Sinkula [3] contradict this assumption and suggest that EO and MO complement each other, at least in small companies, to increase profitability. The main difference between this study and previous studies was the inclusion of another construct, a successful innovation that captures an indirect effect of EO on profitability.

At least in small firms, the results suggest that the EO complements the MO instilling an opportunistic culture that impacts the quality and quantity of innovation of companies.

The relationship between entrepreneurial orientation and market orientation leads us to hypothesise the relationship between the two orientations, expressed in H3.

H3: *The higher the degree of entrepreneurial orientation, the greater the degree of market orientation.*

Langerak [41] finds that the nature of the link between market orientation and organisational performance is not yet adequately explained. This suggests that other considerations may shape the success of a market orientation strategy. For Kohli and Jaworski [34], the consequences of market orientation affect performance, employees and clients in the organisation. Thus, it is expected that the MO, at the individual level (IMO), will have a positive impact on performance traits.

H4: *The IMO has a positive impact on performance.*

Although after the work of Covin and Slevin [13] several other works have appeared at the company level, which conclude that there is a positive impact of EO on performance, there have been others which conclude that there is no direct relationship between EO and performance, as is the case in Matsuno *et al.* [48]. However, the theoretical foundations of the relationship are rather solid, so it is expected that EO will have a positive impact on performance traits, also at the individual level.

H5: *The higher the degree of individual entrepreneurial orientation, the greater the performance.*

Methodology

Research Method

According to Brannen [7], the quantitative method is associated with an objectivist approach, while the method of qualitative investigation is associated with a subjective approach.

In the first method, the researcher begins from an existing theoretical knowledge, hypotheses are listed on the theory and operationalised and measured with instruments and empirical data collection and default data.

In the second method, the theory appears as the data is analysed and the choice of cases is made on a theoretical basis which similarly arises during the investigation.

In accordance with Polit [66], the trend is the integration of quantitative and qualitative data in a single study. The dichotomy between these two analyses is the key distinction in epistemological and methodological framework of social and behavioural sciences. It is therefore a mixed method, also designated by triangulation.

To evaluate the proposed model and test the research hypotheses, quantitative methodology is understood to be more appropriate, which is given an exploratory and causal focus, since there are few empirical results for some of the relationships proposed.

The data needed to test the hypotheses, mostly representing very specific scales, are not published, so there is a need for primary data through field work.

Following that is the objectivist approach and the deductive method, based on models constructed from the accumulated results of previous investigations, through quantitative indicators.

The unit of analysis in this study is the individual: teachers and researchers of public higher education.

Variables and Scales

For the constructs in the model the measurement scales available are proposed, as mentioned.

Nunnally and Bernstein [59] advocate the advantage of using scales that have been developed and tested. This decision will facilitate the comparability of study results with other results already published.

Thus, the EO will be measured by ENTRE-U developed by Todorovic, McNaughton, and Guild, in 2011 [74], and adapted to the individual level (I-ENTRE-U). This scale is composed of four dimensions: research mobilisation (6 items), unconventionality (8 items), industry collaboration (5 items) and university policies (4 items).

The IMO scale that assesses the individual level was developed by Schlosser and McNaughton [72], from the work of Kohli and Jaworski [32; 33; 34; 35], and consists of 20 items, ordered in three dimensions of market orientation, at the individual level:

1. Generation of information, which includes eight items;
2. Dissemination of information, organised into seven items;
3. Response to market information, organised into five items.

Xiaowei [78] developed a measure of self-assessment of performance traits which, as a whole, consists of 18 items, from reviewing the work of other authors and considers seven dimensions of this assessment:

- The relationship between organisational networks (3 items);
- The transmission of organisational memory (2 items);
- Confidence (four items);
- Synergy Group (2 items);
- The influence of chain performance (2 items);
- The difficulty in replacing (2 items);
- Traces of innovation (three items).

All variables are measured by Likert scales, on a scale of 1 to 7, where 1 means 'strongly disagree', 2 meaning 'disagree', 3 means 'disagree somewhat', 4 means 'not agree nor disagree', 5 means 'agree somewhat', 6 means 'agree' and 7 means 'strongly agree'.

Data Collection and Analysis Methods

In order to ensure clarity of the issues, understand them and their objectivity, a pre-test questionnaire will be administered to some teachers/researchers of higher education.

In accordance with Lakatos and Marconi [38], research using a survey technique has the disadvantage of the number of questionnaires. To alleviate this problem and to increase

the response rate, multiple contacts will be made [71] which consist in the repeated sending of a questionnaire more often to non-respondents in a given time interval.

In preparing the questionnaire, we intend to follow the main lines of research with regard to measuring instruments. However, it may be necessary to adapt the content and scale, since the target audience and the research objectives also differ from the original.

According to the research objectives and the nature of the test data, we will use:

- 1 - Descriptive methods that characterise the data (central tendency, dispersion and relative position) and to evaluate the applicability of some of the other techniques (normality, outliers, etc.).
- 2 - Statistical techniques to test, debug and validate measuring instruments, emphasising the confirmatory factor analysis (CFA), exploratory factor analysis (EFA), Pearson's correlations and Cronbach's alphas, among other measures.
- 3 - Techniques that will allow testing research hypotheses, as the structural equation models analysis (SEMA);
- 4 - Other statistics and statistical tests as a supplement to other statistics used.

The Structural Equation Model (SEM, English Structural Equation Modelling) includes a set of models known by various names, among them the path analysis, analysis of covariance structure, the analysis of latent variables and confirmatory factor analysis (CFA). It is a set of data processing techniques that has received great attention from researchers and is understood by many authors from the field [64] as a mixture of factorial analysis and regression analysis that allows researchers test factorial structures of psychometric measurement instruments. According to Pilati and Laros [64], SEM tries to replicate a set of observed data (variables) through the imposition of parameters in the matrices, which are the theoretical relationships defined by the researcher. This characteristic is the main difference between the SEM of other multivariate analysis techniques, since the imposition of the parameters in the matrix of relationships between variables is of confirmatory nature, since it requires from the researcher a predefined type of relationship between variables of the model tested which are operational restrictions in terms of the matrices.

For this reason, the SEM requires that: the measures used by the researcher are of good psychometric quality and are solid and theoretical models based on previous research that allow the researcher to establish these charges (pre-defined relations) with the property.

Because of this last feature, the SEM is understood as a confirmatory technique, since the theoretical modelling of the object under investigation should have occurred before the data analysis.

The SEM simultaneously estimates the parameters of the measurement model and the structural model (regression) [24]. That is, the first step (measurement model – CFA) tests the validity and the reliability of the measures first and only then proceeds to test the analysis model (structural model), where the relationships (paths) are tested.

The structural model defines the relationship between the exogenous and endogenous latent variables. Consequently, this model specifies latent variables (exogenous) directly or indirectly influencing changes in the values of other latent variable (endogenous or dependent).

The SEMA will be the method of data analysis to be followed in this investigation. The statistical data will be made with the use of the AMOS programme, thus requiring the use of SPSS for a part of the analysis.

We can see the methodological aspects that make this analysis in Table 1 below.

Table 1. Summary of the methodological aspects of quantitative analysis

Sector	Education
Institution type	Universities and polytechnics of public education (PE)
Teachers/researchers PE	26,098
Unit of analysis	Lecturers/Researchers in public higher education institutions
Study object	Relationship between EO, MO and Performance of teachers and researchers of public higher education institutes
Data collection instrument	Survey with questionnaire
Data collection	April and May 2012
Data analysis	Univariate, Multivariate

Conclusions

1. We believe that this work entails some theoretical limitations, and in particular the hypotheses require further theoretical justification.
2. Its intention is to understand the relationship between entrepreneurial orientation, market orientation and performance of teachers and researchers from institutions in the Portuguese public higher education.
3. The conceptual model proposed by it needs to be corroborated by empirical support in order to test the hypotheses.
4. Thus, the data will allow testing the proposed conceptual model and could be of valuable utility to present new avenues for improving the performance of teachers and researchers from public higher education institutions.

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Orientacija į verslumą, orientacija į rinką ir dėstytojų bei mokslininkų veikla valstybinėse aukštojo mokslo institucijose

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Šiame tyrime mes ketiname ištirti ryšius tarp orientacijos į verslą, orientacijos į rinką ir veiklos rezultatų individualiu lygiu. Mes siūlome individualios orientacijos į verslumą sampratą ir jos matavimo skalę vadovaudamiesi individualios orientacijos į rinką koncepcija, matuojama i-markeriu. Pagrindinis tikslas yra analizuoti santykius tarp individualios orientacijos į verslumą, individualios orientacijos į rinką ir valstybinių aukštojo mokslo institucijų dėstytojų ir mokslininkų veiklos rezultatų. Pasiūlytas koncepcinis modelis nustato santykius tarp šių kintamųjų. Šio tyrimo rezultatai gali būti naudingi siekiant suprasti, kaip analizuojami kintamieji sąveikauja ir koks yra jų poveikis valstybinių aukštojo mokslo institucijų veiklai.

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