

## THE RELATIONSHIP BETWEEN ENTREPRENEURIAL ORIENTATION AND INNOVATIVENESS IN CROATIAN COMPANIES

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### **Summary**

*The purpose of the research was to determine whether there is a positive relationship between entrepreneurial orientation (EO) and innovation in Croatian export companies. The sampling method used for the purpose of this research was stratified random sampling, and regression analysis was used for data analysis. The structure of correlation between individual responses and individual groups of responses is analysed by canonical analysis and cluster analysis. Data was collected from 303 Croatian companies using a questionnaire with a response rate of 35.31%. The results confirm that there is a positive relationship between entrepreneurial orientation and innovativeness in Croatian companies. In the context of this research, it is likely that the entrepreneurial orientation associated with the innovative activities of the company can be positively reflected in the creation and maintenance of a good business climate and the strengthening of competitiveness in the international market.*

**Keywords:** *innovativeness, entrepreneurial orientation, risk-taking, proactiveness, Croatian companies.*

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## 1. INTRODUCTION

Entrepreneurial orientation (EO) is a multidimensional strategic construct that has become a central concept in the field of entrepreneurship, after having received a considerable amount of theoretical and empirical attention (Covin and Slevin, 1991; Freytag and Thurik, 2007; Grilo and Thurik, 2008; Liñán et al., 2011; Goethner et al., 2012). The main goal of the article is to discuss and elaborate on the basics of entrepreneurial orientation and relationship between EO and innovativeness in companies. Numerous authors have suggested the benefit of conducting research in the entrepreneurial orientation domain (George et al., 2001; Baker and Sinkula, 2009; Van de Vrande et al., 2009; Wiklund and Shepherd, 2011; Miller, 2011; Covin and Lumpkin, 2011; Li, Y., Liu, Y. and Liu, H. 2011; Covin and Wales, 2012; Zahra et al., 2014; Covin and Miller, 2014; Anderson et al., 2015; Wales, 2016).

The notion of innovativeness in scientific literature has been discussed with great interest (Schumpeter, 1934, Avlonitis and Salavou, 2007; Rauch et al. 2009; Tajeddini, 2010; Lejpras and Stephan, 2011; Nybakk, 2012; Soinenen et al., 2015). Innovativeness reflects a firm's tendency to engage in and support experimentation, novelty, new ideas and creative processes that may result in new technological processes; products or services (Lumpkin and Dess, 1996). A key component to companies' success is the scope of their innovativeness (Hult et al., 2004). Many scholars proposed negative or positive relationships between entrepreneurial orientation and innovativeness under respective circumstances (Hult et al., 2004; Rauch et al., 2009; George and Marino, 2011; Šlogar et al., 2018). Therefore, the following research question arises: is there a positive connection between entrepreneurial orientation and the innovativeness of Croatian companies? Existing research on the relationship between entrepreneurial orientation and innovation is mainly related to developed economies. Therefore, there is a lack of studies that would study such a relationship in transition countries. In the context of this research, it is likely that the entrepreneurial orientation associated with the innovative activities of the company can positively reflect in the creation of competitiveness in the international market. Practical implications of this study contributes to the understanding of the role of entrepreneurial orientation and innovativeness in croatian companies. It also contributes to the literature on entrepreneurial success, the ultimate objective in entrepreneurship. This article has meaningful implications for policy-makers and managers.

This research was organized in the following way. Firstly, the literature on entrepreneurial orientation should be defined. Then a hypothesis is made, followed by a description of the method and then the results of the research are presented. Lastly, a conclusion leading to theoretical and practical implications is presented. The following research hypothesis was developed and tested: *There is a positive relationship between the entrepreneurial orientation and innovativeness in Croatian companies.*

## 2. LITERATURE REVIEW

### 2.1. Development of entrepreneurial orientation in companies

The phenomenon of entrepreneurial orientation has become a central focus of entrepreneurship literature and the subject of more than three decades of research (Covin and Wales, 2012). Numerous scholars have developed the concept of entrepreneurial orientation Mintzberg (1973), Khandwall (1977); Miller (2011). Their work follows Covin and Slevin (1989) and cites a three-dimensional concept that includes innovativeness, proactivity and risk-taking in the enterprise. Similarly, Lumpkin and Dess (1996) propose a multidimensional construction in a five-dimensional concept that includes proactivity, innovativeness, risk-taking, competitive aggression, and autonomy. Several studies discuss different concepts that are very heterogeneous making it acceptable to combine different dimensions of entrepreneurial orientation (Covin et al., 2006; Covin and Lumpkin, 2011; George and Marino, 2011; Covin and Wales, 2012; Anderson et al., 2015; Wales, 2016). Accordingly in this paper entrepreneurial orientation is defined as a three-dimensional concept that includes proactivity, risk-taking and autonomy. Entrepreneurial companies are considered to be companies in which the top-level managers have entrepreneurial management styles, which is reflected in the strategic decisions and business management philosophies of the company (Covin and Slevin 1989). An entrepreneurial company focuses on entrepreneurial activity, increasing business opportunities, competitive strategies, availability of resources and technology, customer needs and access to new markets (Lumpkin and Dess, 1996; Rauch et al., 2009; Baker and Sinkula, 2009; Markowska et al., (2019). A proactive company's position is determined by innovative ideas and the bringing to realization of these ideas (Wong, 2014). Lazibat, Baković and Sutić (2010) indicated that the process of innovation development is directly influenced by the specifics of the industry in which the company operates the available resources and the economic situation in the environment.

Numerous studies indicated link entrepreneurial orientation and innovativeness process in companies (Wiklund, 1999; Lumpkin and Dess, 2001; Wiklund and Shepherd, 2005; Basso et al., 2009; Dess et al., 2011; Wales et al. 2011; Kraus et al. 2012; Carlsson et al. 2013; Gupta and Gupta, 2015; Wach, 2015; Alvarez et al., 2016). Furthermore, Avlonitis and Salavou (2007) identify the EO profile of SMEs to propose variations in the product innovativeness dimensions of different performance potential in Greek manufacturing companies. In the study, Wach (2015) provides an overview of the literature and discusses the concept, principles and perspectives of international entrepreneurial orientation of enterprises. In the study Hult et al., (2004) the results indicate a positive relationship between entrepreneurial orientation and innovativeness. Casillas and Morena (2010) state that autonomy is one of the foundations for an innovative and entrepreneurial behaviour. Lumpkin et al. (2010) found a positive relationship between long-term business and five dimensions of EO, despite the fact that the dimensions can mutually influence each other. It is obvious that the dimension of autonomy applies to larger companies and therefore in the context of small businesses can be justifiably left out of the charts. The same process of exclusion may be relevant for competitive aggressiveness, because small companies may lack competitive

power. Despite the wide acceptance of entrepreneurial orientation, it is necessary to mention the question of the dimension of interdependence (George and Marino, 2011).

Wong (2012) states that the relations between the three dimensions of entrepreneurial orientation and the success of new products communicated with value-added products, and the relationship between risk and value-added products moderated the innovation and proactivity. Likewise, Wong (2014) states that the innovation found to be the most effective driver of success of new products in EO and is most associated with the success of new products. On the other hand, Khedhaouria et al., (2015) developed a model that confirms the direct link between entrepreneurial self-efficacy, creativity, and entrepreneurial orientation that positively impact small business performance. Soininen et al., (2015) results reveal that owner-manager's intrinsic and status work values and experience are the strongest drivers of EO. Moreover, Markowska et al., (2019), emphasized that prediction orientations and risk are core strategic orientations in the entrepreneurial context. According to Głodowska et al. (2019), results show that entrepreneurial orientation has an important role in the use of knowledge in internationalisation of Polish companies. Similarly Zbierowski (2019) has carried out empirical research and found that the effect of high performance factors is positive on all dimensions of entrepreneurial orientation. Indriyani et al. (2019) stress that in facing the competition, one key to succeed is innovation and entrepreneurial orientation in traditional SME entrepreneurs.

## **2.2. The role of innovation in the development of entrepreneurial orientation in companies**

Innovativeness reflects a company's tendency to engage in and support experimentation, new ideas, and creative processes that may result in new products, technological processes or services (Lumpkin and Dess, 1996). Hurley and Hult (1998) emphasized that that innovativeness is an aspect of openness to new ideas and company's corporate culture. Similarly, Hult et al., (2004) observed that Innovativeness is associated with the ability to introduce new ideas, processes, and products into the company. Hadjimanolis (1999) identifies three main preconditions for the development of innovation. Two prerequisites include internal elements of a particular economic operator, for example competence, the education level of the employees and the characteristics of the economic entity including research, production and information-technology infrastructure. The third prerequisite is an external element or the business environment in which a particular economic operator collaborates with suppliers, customers and other stakeholders.

In this paper, the company's innovativeness is defined as the tendency of companies to create and/or adopt product innovation, process innovativeness, business system innovativeness (Nybakk, 2012). According to Hult et al. (2004), the key component in the success of industrial firms is the extent of their innovativeness. The results of a study by Hult et al. (2004), indicate a positive relationship between entrepreneurial orientation and innovativeness. Entrepreneurial orientation is an important driver of innovation companies and is of great importance for managers as it provides an incentive to start activities such as the development of new ideas, products

and processes. The reason for this lies in the entrepreneurial orientation that includes features such as proactivity and initiative, which may encourage managers to take action with regard to various innovative projects. In the study, Covin, et al. (2006) results based on manufacturing companies indicated a positive effect of EO on sales growth rate.

Van de Vrande et al., (2009) shows that innovativeness is very important for small businesses with limited resources in business. In the study, Hoq and Che Ha (2009) found that innovativeness is the main mediator in the network of relationships between business performance and organizational orientation. The development of innovation is an expensive, risky and time-consuming business process. Complex effort does not guarantee market success. Casillas and Morena (2010) show that there is a significant positive correlation between the two dimensions of entrepreneurial orientation: proactivity and innovation. The Tajeddini study (2010) investigated the relationship between innovation and customer orientation and an impact on the success of the Swiss hotel industry.

Baković and Ledić-Purić (2011), state that innovativeness, dynamics, openness, flexibility are important for building the innovation potential of small and medium enterprises, and the biggest barriers are related to financing new ideas and projects. Leipras and Stephan, (2011). analyzed the extent to which the innovativeness of spin-offs, originating either in a research facility or from another company is affected by location conditions using a sample of East German companies from the knowledge-intensive sector. Moreover, Li, et al., (2011) investigated the effects of entrepreneurial orientation of distributors on the relationships between the factors of cooperation and the acquisition of knowledge by producers in China.

Calantone et al. (2002) suggest that innovativeness has become a prerequisite for achieving a competitive advantage for companies in the market. Gunawan et al. (2016) explore the relationship between entrepreneurial orientation and the role of extra-cluster ties, intra-cluster ties, in shaping firms' innovative performance. The results show that extra-cluster ties mediate the relationship between innovative performance and proactiveness. Moreover, Ejdys (2016) indicated the role of entrepreneurial orientation through the significant impact of proactivity and risk-taking on the innovation of small and medium enterprises.

In a study Arzubiaga et al. (2018) they noticed a stronger connection between entrepreneurial orientation and success in companies with a lower degree of family involvement, which also affects innovative processes. Markin et al. (2018), used meta-analyzes of 150 studies involving more than 40,000 companies in 46 countries and investigated the consequences of entrepreneurial orientation through the degree of connection with the work of companies at different levels of cultural values. They observed that the EO-firm performance relation is stronger when firms are properly aligned with a configuration characterized by desired levels of multiple cultural values. Consequently, entrepreneurial orientation is an important driver of a company's innovation and is of great importance for managers because it provides an incentive to launch activities such as the development of new ideas, products and processes (Šlogar, 2018). Furthermore, Rajapathirana and Hui, (2018) found a strong relationship between innovation efforts, innovations capability, and firm performance. According to

the results of Šlogar et al. (2018), most managers consider innovativeness and proactivity important for business success. In essence, dimensions of entrepreneurial orientation, innovativeness, proactivity and competitiveness are in a positive and statistically significant relationship with business performance.

Calabrò et al. (2019) indicated a systematic review of 118 peer-reviewed articles in journals with the aim of stimulating new debate on the innovation literature. Moreover, Presutti and Odorici, (2019) argue that small and medium-sized electronic companies that develop business and social networks can have significant advantages over entrepreneurial orientation and market orientation, improving their work advantages. Furthermore, in research Šlogar and Bezić, (2019a) a positive relationship between the basic characteristics of a company and innovativeness was not established. Consequently, the auxiliary hypotheses show that there is no positive relationship between company age and innovativeness, the number of employees and innovativeness, or level of education and innovativeness (Šlogar and Bezić, 2019a). In the study Šlogar and Bezić (2019b) findings show that the positive relationship between innovativeness and export in Croatian companies. In the context of this research, innovation has a positive effect on the competitive advantage of companies in the international market.

### 3. RESEARCH METHODS

On the basis of the defined objective of the research, the hypothesis was examined: There is a positive relationship between entrepreneurial orientation and innovativeness in Croatian companies. The research was conducted based on the survey method in the last three months of 2016. The aim of the research is to determine whether there is a positive relationship between entrepreneurial orientation and innovativeness. An entrepreneurial orientation is an independent variable and innovativeness is a dependent variable. The sampling method used for the purpose of this research was stratified random sampling, and regression analysis was used for data analysis. Spearman rank correlation was performed for data analysis. In the case of ordinal variables that are processed in the work, canonical analysis is used. Cluster Analysis graphically depicts the structure of the interrelationships of entrepreneurial orientation and innovativeness. Statistical testing is performed at a significance level of 95% ( $\alpha = 0.05$ ). Statistical analysis and data analysis is carried out by STATISTICA 6.1 StatSoft inc. 1983-2003.

The basic set from which the sample was chosen consists of registered companies that actively carried out their activities in 2016 throughout the Republic of Croatia. It is a three-stage stratified random sample that consists of 900 companies. Sample stratification is important because companies from all Croatian regions, companies with different sizes and companies belonging to the processing industry, information and communication, computer programming, consultancy and related activities were included in research. Three-stage stratified random sample is used. A random sample was taken from each stratus.

For the first stratification level, the differential criterion is the division of counties according to three regions: 1. Northwestern Croatia 2. Central and Eastern

(Pannonian) Croatia and 3. Adriatic Croatia. For the second level of stratification, the differential criterion is the size of the company. The provisions of the Accounting Act (Official Gazette No. 78/15), which prescribe the conditions to be met by the company, are applied: the number of employees, the amount of revenue and the amount of total assets. For the third level of stratification, NKD 2007 (National Classification of Activities) categories are used, and the target companies belong to the following areas: C - Processing industry, Section 10-33 and J - Information and Communication, Section 62 - Computer programming, consultancy and related activities. The originally developed questionnaire was piloted and sent to 10 randomly selected companies from the defined database. The aim was to check the user-friendliness of individual claims from previous studies and to identify potential uncertainties regarding some of the questions.

Subsequently, the questionnaire was modified and revised. To measure entrepreneurial orientation, the scale adapted from Covin and Slevin (1989) was used that consisted of 10 items and assessed the subfactors of proactiveness, and risk-taking and the subfactor of autonomy (5 items) was added from a scale adapted from Lumpkin and Dess (1996). A 5-point Likert scale was used: 1 – 'the claim does not relate to my company at all' to 5 – 'the claim is completely related to my company'. To measure the innovativeness, a scale adapted from Nybakk (2012) was used that consists of 15 items and assesses the subfactors of product innovation, process innovativeness and business system innovativeness. Additionally, a 5-point Likert scale was used: 1 – 'the claim does not relate to my company at all' to 5 – 'the claim is completely related to my company'.

In the process of data collection, e-mails were sent to 900 Croatian companies that were actively doing business on the domestic or international markets, selected from the Croatian Chamber of Commerce. Within the first three months, 303 questionnaires were properly filled out and sent back (out of 900), resulting in a response rate of 35.31%. Of 345 collected questionnaires, only 303 were used in the final analysis, the rest, which omitted significant amounts of data, were excluded. It should be noted that a large number of leading Croatian companies sent returned completed questionnaires.

#### 4. RESEARCH RESULTS

The results have shown that under The National Classification of Territorial Units for Statistics NKPJS (2007), the largest number of companies, 52.1%, belongs to the Northwestern Croatia HR01, 33% is located in Central and Eastern (Pannonian) Croatia HR02, while the smallest number of companies, 14.7%, are in Adriatic Croatia HR03. The distribution of companies throughout the industrial sector shows that the largest number of companies, 22%, is engaged in the production of metals and metal products, machinery and equipment; 18% in the production and processing of wood, pulp and paper; 17% in the production of chemical products, synthetic fibres, rubber, mineral products; 16% in the production of food, beverages and tobacco products; 11% in financial and other services; 9% in the production of textiles and textile products; and 7% in computer programming.

The results show that in 2015, 44.6% of the surveyed companies generated revenue of less than HRK 60 million, 28% between HRK 60 million and 300 million, and

27.4% of the companies generated revenue of more than HRK 300 million. The results show that in 2015, the total assets of 44.6% of the surveyed companies were less than HRK 30 million, 27.7% from HRK 30 million to 150 million and 27.7% more than HRK 150 million.

	Innovativeness	Product innovation	Process innovativeness	Business system innovativeness
Entrepreneurial orientation	0.723	0.713	0.541	0.652
Proactiveness	0.706	0.693	0.500	0.672
Risk-taking	0.357	0.343	0.27	0.266
Autonomy	0.304	0.286	0.177	0.343

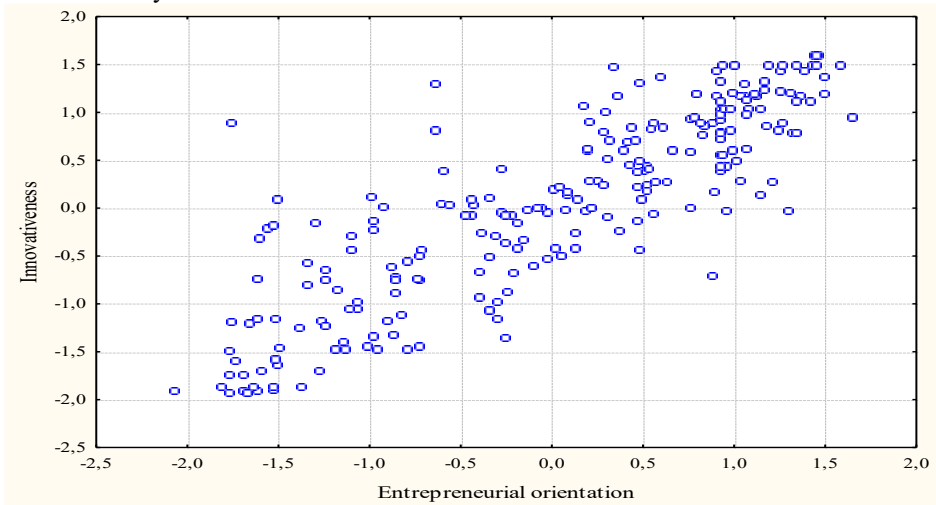
Source: Research author

Table 1 shows the Spearman rank correlation has established that there is a statistically significant positive relationship between entrepreneurial orientation and innovativeness, that is, the enterprises that are more entrepreneurial-oriented are more innovative.

Canonical analysis shows (Canonical R: 0.873,  $\text{Chi}^2(285)=1266.5$ ,  $p < 0.01$ ) a statistically significant positive relationship between entrepreneurial orientation and innovativeness. Canonical correlation coefficient (R Canonical) is 0.873 which is a positive relationship, a statistical significance was tested by Chi-square test ( $\text{Chi}^2$ ) that shows a statistically significant correlation ( $p < 0.01$ ).



**Figure 1** Relationship between entrepreneurial orientation and innovativeness based on canonical analysis

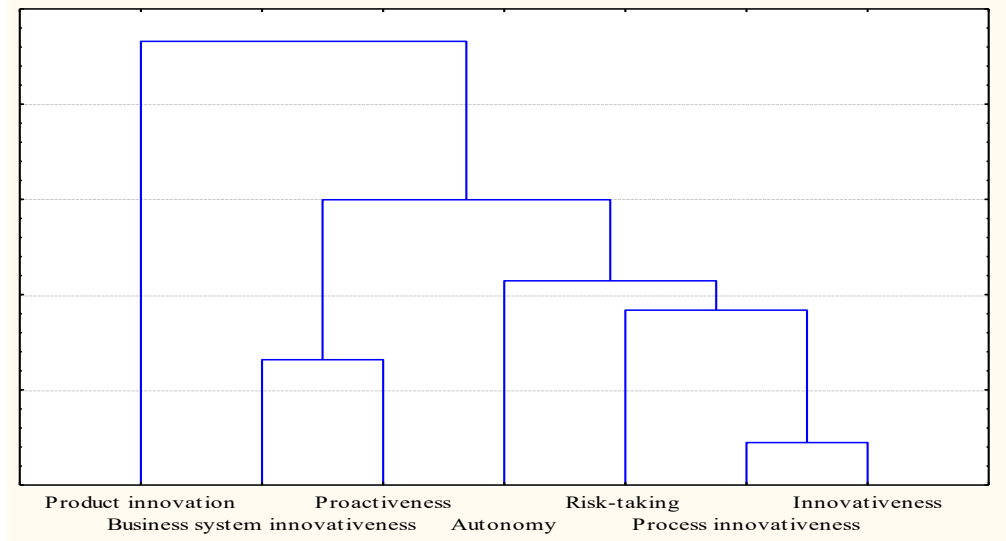


Source: Research author

Figure 1 shows a positive relationship between entrepreneurial orientation and innovativeness obtained by canonical analysis. Cluster analysis graphically shows the structure of the connection entrepreneurial orientation and innovativeness.

Figure 2 shows the structure of the interconnectedness of individual components within the entrepreneurial orientation and innovativeness based on cluster analysis. The hypothesis is fully confirmed by these findings.

**Figure 2** Dendrogram of the connection of individual components of entrepreneurial orientation and innovativeness



Source: Research author

## 5. CONCLUSIONS

In response to the main goal based on the results of the conducted research, analysis shows that there is a statistically significant influence of entrepreneurial orientation and innovativeness in Croatian companies. Likewise, Spearman's rank correlation shows that there is a statistically significant positive correlation between entrepreneurial orientation and innovativeness in companies. The results show correlations of each pair of variables and statistically significant correlation coefficients ( $p < 0.05$ ) are highlighted. A canonical analysis was also carried out showing the correlation of all responses related to entrepreneurial orientation and innovativeness. The canonical analysis shows a statistically significant positive correlation between entrepreneurial orientation and innovativeness ( $p < 0.01$ ). The canonical coefficient of correlation (Canonical R) is 0.873, representing a positive correlation. Its statistical significance was tested by a chi-squared test ( $\chi^2$ ) that shows a significant statistical correlation ( $p < 0.01$ ). Furthermore, the cluster analysis shows the structure of linkages between components within entrepreneurial orientation and innovativeness. Respondents have well identified and ranked the connection between entrepreneurial orientation and innovativeness that is important for increasing the value of their businesses, which can be achieved through an entrepreneurial opportunity on the market. They favor innovativeness, which is typical for entrepreneurs. These results confirm the hypothesis.

The result is consistent with other studies in the literature (Covin and Slevin, 1989; Hult, et.al., 2004; Calantone, et al., 2002; Nybakk, 2012; Kraus et al. 2012; Ejdys, 2016).

There are also some limitations in the empirical research conducted. The results of this research may only be considered relevant for companies in the C and J NKD 2007 sectors that are involved in the research and cannot be generalized for all companies. The data was collected over a period of time, making variables and results limited at that time point. The research was conducted in the period in which Croatian economy was slowly exiting from the crisis, and the timing certainly influenced certain answers in the questionnaire. Furthermore, the applied research methodology can also be considered as a research limitation since not all possible determinants are included: e.g. quality factors, research and development factors etc. Despite the above-mentioned empirical research constraints, the validity of the theory is confirmed.

In conceptual terms, a contribution has been made to the development of scientific thinking about the existence of a positive relationship between entrepreneurial orientation and innovativeness. An empirical contribution has been achieved by defining the effect of entrepreneurial orientation on innovativeness. The conclusions of theoretical and empirical research affirm the relevance of entrepreneurial orientations and innovativeness in creating value and achieving satisfactory solutions that will contribute to the development of the company and the overall economy. In order to improve business, companies should increase proactivity, autonomy within the organization and take risks for innovative projects to increase the competitive edge on the market. Overall, the results show that entrepreneurial orientation is an important driver of an innovative company. It is suggested that future studies explore other business sectors to evaluate the results of this research, as well as compare the differences between individual business segments.

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## ODNOS IZMEĐU PODUZETNIČKE ORIJENTACIJE I INOVATIVNOSTI U HRVATSKIM PODUZEĆIMA

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### *Sažetak*

*Svrha istraživanja bila je utvrditi postoji li pozitivan odnos između poduzetničke orijentacije i inovativnosti u hrvatskim izvoznim poduzećima. Za potrebe istraživanja koristi se trostupanjski stratificirani slučajni uzorak, a za analizu podataka korištena je regresijska analiza. Struktura korelacije između pojedinačnih odgovora i pojedinih skupina odgovora analizirana je kanonskom analizom i klaster analizom. Podaci su prikupljeni od 303 hrvatska poduzeća pomoću upitnika sa stopom odgovora od 35,31%. Rezultati potvrđuju da postoji pozitivna povezanost između poduzetničke orijentacije i inovativnosti u hrvatskim poduzećima. U kontekstu ovog istraživanja, vjerojatno je da se poduzetnička orijentacija povezana s inovativnim aktivnostima poduzeća može pozitivno odraziti u stvaranju i održavanju dobre poslovne klime te jačanju konkurentnosti na međunarodnom tržištu.*

***Cljučne riječi:*** inovativnost, poduzetnička orijentacija, preuzimanje rizika, proaktivnost, hrvatska poduzeća