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INTERDEPENDENCE OF CORPORATE GOVERNANCE QUALITY AND ENTREPRENEURIAL ORIENTATION OF CROATIAN COMPANIES

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ABSTRACT

The quality of corporate governance is often cited as a focal issue in today's corporate systems and markets because the performance of companies, measured by various financial indicators, depends on it. On the other hand, the concept of entrepreneurial orientation represents a combination of critical elements of entrepreneurship (the processes of exploration and exploitation of entrepreneurial opportunities at the core of a company's strategic action) and strategic requirements for the company (achieving profitable growth). This paper explores the interdependence of the quality of corporate governance and the entrepreneurial orientation of Croatian companies. The research was conducted on a sample of 58 joint-stock companies. The research results showed a direct positive relationship between the level of corporate governance quality and the degree of entrepreneurial orientation, and it also identified mechanisms and characteristics of corporate governance systems that are relevant in assessing the degree of entrepreneurial orientation.

Key words: *corporate governance, entrepreneurial orientation, quality of corporate governance.*

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1. INTRODUCTION

Effective corporate governance hinges on the equilibrium between internal and external mechanisms, which are vital for enhancing managerial efficiency and mitigating inherent agency problems and conflicts within corporate frameworks. It aims to foster an environment where the conduct and decisions of senior executives align with the interests of the company, shareholders, and key stakeholders, while also facilitating the replacement of underperforming managers with more competent successors.[1] The quality of corporate governance not only determines the effectiveness of the company but is also linked to a whole range of other variables. The criteria for assessing corporate governance are actually the standards set through the OECD Principles of Corporate Governance, which are often incorporated into national laws and regulations.[2] Entrepreneurial orientation is an integral part of the strategic choice concept and relates to the intentions and actions of key decision-makers in the dynamic process, thus being directly aligned with the framework provided by corporate governance. It represents the strategic stance of all levels of management in recognizing and utilizing opportunities from the environment and includes processes, methods, styles, and decision-making activities used by the entrepreneur to create conditions for launching a new entrepreneurial venture or seizing an opportunity to enter a new or existing market with entirely new or already existing products and services.[3] Additionally, Wales et al. describe entrepreneurial orientation as a phenomenon related to entrepreneurs who are just entering their entrepreneurial ventures and organizations engaged in creating new ventures.[4] In this context, this paper focuses on identifying the regularities of the direction, intensity, and principles of the relationship between the quality of corporate governance and the entrepreneurial orientation of companies.

Following the introduction, this paper analyses the connection between corporate governance quality and entrepreneurial orientation. To achieve the main research objective, the primary research was conducted on the sample of 58 companies. A research questionnaire with the total of 137 questions was used

[1] Tipurić, D., Cindrić. L.: *Nadzorni odbor: korporativno upravljanje i grupna dinamika*, Zagreb: CIRU, 2024.

[2] OECD, *G20/OECD Principles of corporate governance 2023*, Paris: OECD Publishing, 2023.

[3] Stevenson, H. H., Jarillo, J. C.: A paradigm of entrepreneurship: entrepreneurial management, *Strategic Management Journal*, 11(4) 1990, pp. 17-27.

[4] Wales, W. J. et al.: Entrepreneurial orientation as a theory of new value creation, *The Journal of Technology Transfer*, 48(5) 2023, pp. 1752-1772.

as the primary research instrument. Research description and the results are presented in the following sections of the paper.

2. RESEARCH PROBLEM

The research problem of this study is related to the relationship between the quality of corporate governance and the entrepreneurial behavior of companies. It is important to provide a research framework to address the question of which structures of corporate governance encourage and enable value creation through entrepreneurial initiatives in traditional firms.[5] The research seeks to answer whether high-quality corporate governance leads to a higher degree of entrepreneurial orientation within companies. Following this, the main objective of the research is to determine the existence and strength of the relationship between the quality of corporate governance and the entrepreneurial orientation of companies in a closed corporate governance system and a two-tier management model. The interrelationship between the quality of corporate governance and the entrepreneurial orientation of companies is still unexplored within the framework of a closed corporate governance system characterized by a two-tier management model, which is most common in the Republic of Croatia. This research is focused on companies with characteristics of a closed system of corporate governance, which is characterized by high ownership concentration and the separation of management and supervisory functions within the companies. The quality of corporate governance is not unambiguously defined nor comprehensively defined in the literature, which of course does not mean that elements of corporate governance quality cannot be identified and ultimately measured. In other words, it is easier to recognize and measure elements of corporate governance quality than it is to definitionally delineate the phenomenon. In its broadest sense, it encompasses the totality of characteristics of the mechanisms and practices of the observed corporate governance system. The quality of corporate governance is defined by international standards, state institutional frameworks, and national corporate governance codes. Indicators of corporate governance quality in theory are called corporate governance quality indices, and they are based on the degree of fulfillment of specified criteria and prescribed supranational recommendations, national legal and sub-legal frameworks that encompass national corporate governance codes. The evolution of corporate governance indices stems from the concept of quantifying quality and benchmarking or-

[5] Phan, T. A., Duong, L. H.: The effects of corporate governance mechanisms on firm performance: Empirical evidence from Vietnam, *The Journal of Asian Finance, Economics and Business*, 8(4) 2021, pp. 369-379.

ganizations against crucial criteria and dimensions deemed pivotal in defining optimal corporate governance practices within an industry, sector, or country. Given the specificities of companies in the SEE region, it is appropriate to use a model for measuring corporate governance quality (SEECGAN index)[6], which encompasses seven areas: corporate reporting, ownership concentration of shareholder rights, boards, rewards and compensations, social responsibility, audit and internal control, and corporate risk management, which will be specially tailored for the needs of this research.

On the other hand, according to Lumpkin and Dess[7], entrepreneurial orientation represents a process related to methods, practices, and styles of making business decisions and is also an integral part of the strategic choice concept and relates to the intentions and actions of key decision-makers in the dynamic process. Entrepreneurial orientation promotes an entrepreneurial spirit throughout all levels of management in the formulation and implementation of strategies that are fundamentally entrepreneurial[8]. One of the most commonly mentioned definitions of entrepreneurial orientation in scientific literature is that of Miller[9] according to which entrepreneurial orientation is defined by three dimensions that will also be used in this study: (1) innovativeness, (2) risk-taking propensity, and (3) proactiveness. Dess and Lumpkin[10], in addition to the mentioned dimensions, view entrepreneurial orientation through two more dimensions: (4) competitive aggressiveness and (5) autonomy. Some scholars, such as Wales et al.[11], highlight how entrepreneurial orientation leads to business success because it represents a valuable resource or produces valuable resources that enhance firm performance. Thus, we can conclude that entrepreneurial orientation is the foundation of a company's strategic actions, the effects of which (growth and profitability) result from innovations in products/services, technologies/processes, markets/organizations, or are the result of activating new resources and/or innovative combinations in the existing resource base.

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6 Tipurić, D. et al.: *Korporativno upravljanje u Hrvatskoj : ocjena kvalitete korporativnog upravljanja hrvatskih dioničkih društava SEECGAN metodologijom*, Zagreb: CIRU, 2015.

7 Lumpkin, G. T., Dess, G. G.: Clarifying the entrepreneurial orientation construct and linking it to performance, *Academy of Management Review*, 21(1) 1996, pp. 135-172.

8 Birkinshaw, J.: *Entrepreneurship in Global Firm*, London: Sage Publications LtD, 2000.

9 Miller, D.: The correlates of entrepreneurship in three types of firms, *Management Science*, 29(7) 1983, pp. 770-791.

10 Dess, G. G., Lumpkin, G. T.: The role of entrepreneurial orientation in stimulating effective corporate entrepreneurship, *Academy of Management Executive*, 19(1) 2004, pp. 147-156.

11 Wales, W. J. et al..: The status quo of research on entrepreneurial orientation: Conversational landmarks and theoretical scaffolding, *Journal of Business Research*, 128 2021. pp. 564–577.

2.1. OBJECTIVES AND HYPOTHESES

The previous elucidation of the research problem, theoretical and empirical findings derived from available literature in the fields of corporate governance, entrepreneurship, strategic management, and related areas have provided the direction and foundation upon which hypotheses were constructed. The aim of the research is to establish relationships and describe the regularities of relationships between the quality of corporate governance and entrepreneurial orientation.

The main hypothesis of this study assumes that there is empirically provable evidence of a relationship between the level of quality of corporate governance and the entrepreneurial orientation of companies as a pattern of company behavior. This can be expressed as follows: The quality of corporate governance and the entrepreneurial orientation of Croatian companies are mutually dependent. As already noted, the level of quality of corporate governance is measured by the SEECGAN index[12], which consists of questions covering seven key areas of corporate governance: corporate reporting, ownership concentration of shareholder rights, boards (number, size, composition, expertise), rewards and compensations, social responsibility, audit and internal control, corporate risk management. The degree of entrepreneurial orientation for the purposes of this study is determined by three dimensions commonly used to define a company's entrepreneurial orientation: (1) innovativeness, (2) risk-taking propensity, and (3) proactiveness. Each of these three dimensions represents an indicator that will be an integral part of assessing the entrepreneurial orientation of companies. Given that the quality of corporate governance in the study is defined through the seven aforementioned constructs, seven derived hypotheses have been formulated for the purpose of testing the main hypothesis.

Hypothesis 1: A positive relationship exists between the quality of corporate reporting and the entrepreneurial orientation of companies.

Hypothesis 2: There is a positive relationship between the degree of ownership concentration and the entrepreneurial orientation of companies.

Hypothesis 3: A positive relationship exists between the number, size, composition, and expertise of boards and the entrepreneurial orientation of companies.

Hypothesis 4: There is a positive relationship between compensation management practices and the entrepreneurial orientation of companies.

[12] Tipurić, D. et al.: *Korporativno upravljanje u Hrvatskoj: ocjena kvalitete korporativnog upravljanja hrvatskih dioničkih društava SEECGAN metodologijom*, Zagreb: CIRU, 2015.

Hypothesis 5: A positive relationship exists between the level of social responsibility and the entrepreneurial orientation of companies.

Hypothesis 6: There is a positive relationship between the quality of audit and internal control and the entrepreneurial orientation of companies.

Hypothesis 7: A positive relationship exists between the level of quality of corporate risk management and the entrepreneurial orientation of companies.

Hypothesis H_1 highlights that a higher level of quality of corporate reporting (mandatory and voluntary) positively affects the entrepreneurial orientation of companies in the Republic of Croatia. Furthermore, hypothesis H_2 assumes that there is a positive relationship between the degree of ownership concentration and the entrepreneurial orientation of companies, while hypothesis H_3 suggests that there is a positive relationship between the number of board members, the number of subcommittees, and the heterogeneity of boards in terms of functional diversity with a higher level of entrepreneurial orientation of companies. Functional diversity implies that individual board members have different competencies necessary for successful company management. Moreover, hypothesis H_4 emphasizes that there is empirically provable evidence of a positive relationship between compensation management practices and the entrepreneurial orientation of companies, while hypothesis H_5 assumes that with an increase in the level of social responsibility, the degree of entrepreneurial orientation also increases. Hypothesis H_6 asserts that a higher level of quality of audit and internal control determines a higher level of entrepreneurial orientation of companies, while hypothesis H_7 presupposes that companies with a developed corporate risk management platform are more entrepreneurially oriented.

The research population, namely the core set, comprised of companies whose shares were listed on the Zagreb Stock Exchange, totaling 153 issuers, with 37 on the official and 116 on the regular market. The survey questionnaires were completed by members of the management boards of joint-stock companies. The returned questionnaire sample included 60 joint-stock companies, accounting for 39.1% of the core set. However, two questionnaires were from joint-stock companies that did not meet the criteria (one in liquidation, and the other not listed on any exchange), reducing the final research sample to 58 companies. These findings affirm the suitability and representativeness of the research sample, particularly considering the extensive nature of the research instrument. The primary research tool was a survey questionnaire consisting of seven segments and hundred and thirty-seven questions adopted from SEECGAN Corporate Governance Index, tailored to the business environment of selected Southeast European countries.

The SEECGAN composite index is a complex indicator of corporate governance quality used to compare companies across key segments of corporate governance. The foundation of the index lies in the SEECGAN scorecard, crafted from responses to a comprehensive set of 98 questions categorized into 7 segments of corporate governance:

1. *board structure and governance* - this segment is covered by a set of 21 questions, evaluating the role of supervisory boards and management boards in a two-tier model of corporate governance, or the board of directors in a single-tier model.
2. *transparency and disclosure of information* - this segment consists of 17 questions, evaluating the transparency and disclosure of prescribed information in public joint-stock companies.
3. *shareholders' rights* - this segment is covered by a total of 17 questions, evaluating shareholders' rights and their participation in the company's activities.
4. *audit and internal control* - this segment includes a set of 11 questions, evaluating the external audit system with a special focus on auditor independence and the work of the audit committee, as well as the internal audit and control system of joint-stock companies.
5. *compensation and rewards* - this segment comprises a set of 14 questions, evaluating the system of rewarding board members and top management and the reward policies within the company.
6. *risk management* - this segment includes a set of 8 questions, evaluating the risk management system within the company and ERM (Enterprise Risk Management).
7. *corporate social responsibility* - this segment is covered by a set of 10 questions, evaluating corporate social responsibility and the existence of formalized practices of socially responsible business within the company.

The queries regarding corporate governance quality were structured to allow for only two responses: "YES" indicating the presence or visibility of the relevant quality element within the company, or "NO" if it is absent. The subsequent series of 25 questions focuses on exploring entrepreneurial orientation and evaluating the business environment. This includes examining industry characteristics that may influence the level of entrepreneurial orientation, such as technological capabilities and environmental turbulence. Given that top managers' attitudes determine entrepreneurial orientation, a Likert scale with five levels of intensity, commonly employed in entrepreneurial orientation

research, was utilized.[13] The gathered data underwent processing on a personal computer utilizing Microsoft Excel spreadsheet software and SPSS for Windows 22.0 statistical data processing software. Statistical data processing involved descriptive and univariate analysis. Within the realm of univariate techniques, correlation analysis, ANOVA, Mann-Whitney U test, and Kruskal-Wallis test were employed. For the construction of entrepreneurial orientation variables, the reliability of measurement scales was assessed using the Chronbach alpha coefficient. This coefficient indicates the level of internal consistency among composite indicators or variables.

2.2. RESEARCH CONSTRUCTS

Two complex research constructs were utilized in the study: (1) quality of corporate governance and (2) entrepreneurial orientation.

2.2.1. QUALITY OF CORPORATE GOVERNANCE

Table 1 displays the results of descriptive statistics for the segments of the corporate governance quality index. Each positively answered question was assigned an appropriate weight according to the SEECGAN methodology ("1" – somewhat less important aspect; "2" – moderately important aspect; "3" – highly important aspect). It is possible to achieve a maximum score of 10 (the index takes the highest value of 10) if all questions are answered positively,

[13] Aktan, B., Bulut, C.: Financial performance impacts of corporate entrepreneurship in emerging markets: a case of Turkey, *European Journal of Economics, Finance and Administrative Science*, 12 2008, pp. 69-79.
Bruining, H., Wright, M.: Entrepreneurial orientation in management buy-outs and the contribution of venture capital, *Venture Capital*, 4(2) 2002, pp. 147-168.
Covin, J. G., Wales, W. J.: The measurement of entrepreneurial orientation, *Entrepreneurship Theory and Practice*. 36(4) 2012, pp. 677-702.
Knight, G. A.: Cross-cultural reliability and validity of a scale to measure firm entrepreneurial orientation, *Journal of Business Venturing*, 12(3) 1997, pp. 213-225.
Lumpkin, G. T., Dess, G. G.: Linking two dimensions of entrepreneurial orientation to firm performance: the moderating role of environment and industry life cycle, *Journal of Business Venturing*, 16(5) 2001, pp. 429-451.
Morris, M. H., Sexton, D. L.: The concept of entrepreneurial intensity: implications for company performance, *Journal of Business Research*, 36 1996, pp. 5-13.
Naldi, L. et al.: Entrepreneurial orientation, risk taking, and performance in family firms, *Family Business Review*, 20(1) 2007, pp. 33-47.
Zahra, S. A., Covin, J. G.: Contextual influences on the corporate entrepreneurship – performance relationship: A longitudinal analysis, *Journal of Business Venturing*, 10(1) 1995, pp. 43-58.

while the minimum value the index can take is 0 (when all answers are "NO"). During the development of the SEECGAN methodology, there was a debate about whether to assign different weights to each segment of the index, but it was decided that each segment equally contributes to the calculation of the overall index value.

Table 1. Rating of corporate governance quality of companies in the sample

	N	Minimum	Maximum	Mean	Std. Deviation
Board - structure and governance	58	1,190	10,000	4,70854	1,947129
Transparency and disclosure of information	58	1,176	10,000	5,73529	2,560060
Shareholders' right	58	2,258	9,677	5,70634	1,783514
Social responsibility	58	,000	10,000	4,35140	3,180590
Audit and internal control	58	,833	9,167	5,56034	2,084870
Risk management	58	,000	10,000	5,10776	3,610600
Compensation and rewards	58	,000	10,000	3,64763	3,065434
SEECGAN index	58	1,280	9,174	4,97390	2,102247
Valid N (listwise)	58				

Source: authors' calculations

The mean value of the corporate governance quality index among the sampled companies stands at 4.97. Notably, segments such as transparency and disclosure of information, shareholders' rights, audit and internal control, and risk management demonstrate average values surpassing this overall index mean. Conversely, segments including board structure and governance, social responsibility, and compensation and rewards exhibit values below the mean. Delving into sub-segments, the transparency and disclosure of information segment boast the highest average value (5.73), whereas the compensation and rewards segment records the lowest (3.64). A comparison of these averages against the maximum score of 10 underscores the unsatisfactory state of corporate governance quality within the sampled companies. This inadequacy becomes especially apparent when examining the minimum recorded values for each individual index segment, as well as for the index as a whole. Notably, segments such as social responsibility, risk management, and compensation and rewards all register minimum values of 0, indicating a glaring absence of the analyzed elements of corporate governance quality within these companies.

2.2.2. ENTREPRENEURIAL ORIENTATION

Table 2 provides a description of the variables of entrepreneurial orientation used in this study. Since these are composite indicators, the Chronbach's alpha coefficient was calculated for each variable. The values of the alpha coefficients shown in the table indicate that all composite variables are suitable for use. In social sciences, a lower limit of acceptability for the alpha coefficient is mentioned to be 0.6[14], hence it's appropriate to use the presented variables for this reason.

Table 2. Overview of Key Variables of Entrepreneurial Orientation

Variables	Description of Variables	Cronbach's alpha
Innovation	The construct consists of the following statements: 1. The degree to which the company emphasizes research and development, technological leadership, and innovation. 2. The extent to which the company has launched new products to the market in the last 3 years (relative to key competitors).	**0,704**
Proactivity	The construct consists of the following statements: 1. The extent to which the company quickly recognizes challenges and opportunities in its environment and takes appropriate actions to capitalize on them (compared to competitors). 2. The extent to which the company leads in the introduction of new products/services, new production technologies, new organizational solutions, new management techniques, and tools. 3. The extent to which the company demonstrates a tendency to be a leader in introducing and implementing innovative ideas in its industry.	**0,846**

[14] Gliem, J. A., Gliem, R. R.: October. Calculating, interpreting, and reporting Cronbach's alpha reliability coefficient for Likert-type scales, In *Proceedings of the Midwest research-to-practice conference in adult, continuing, and community education*, 1 2003, pp. 82-87.

Variables	Description of Variables	Cronbach's alpha
Risk propensity	The construct consists of the following statements: 1. The extent to which the top management of the company shows a strong inclination towards high-risk projects. 2. The extent to which radical decisions are necessary to achieve the company's goals. 3. When it comes to making decisions under conditions of uncertainty, the top management of the company is usually inclined to take risks to maximize the likelihood of exploiting market opportunities.	**0,737**
Entrepreneurial orientation	Innovation + Proactivity + Risk propensity	**0,839**

Source: authors' calculations

As seen in Table 3, the average value for the variable of entrepreneurial orientation among companies in the sample is only 3. Innovation has a similar score (average value of 3.05), while proactivity has a slightly higher average score (3.26). Among all the variables presented, risk-taking propensity has the lowest average value (2.73). Since the variable of entrepreneurial orientation describes the attitude of top management when shaping the company's strategy, a range of additional indicators, primarily innovation, was used. In the literature, innovation is treated as the most important output of entrepreneurial activity, regardless of whether it pertains to individual entrepreneurship or corporate entrepreneurship.

Table 3. Entrepreneurial Orientation of Companies in the Sample

	N	Minimum	Maximum	Mean	Std. Deviation
Innovation	58	1,00	5,00	3,0517	,98537
Proactivity	57	1,00	5,00	3,2632	,91012
Risk propensity	58	1,00	4,67	2,7356	,79658
Entrepreneurial orientation	57	1,00	4,50	3,0166	,72298
Valid N (listwise)	57				

Source: authors' calculations

3. ANALYSIS OF THE INTERDEPENDENCE BETWEEN CORPORATE GOVERNANCE QUALITY AND ENTREPRENEURIAL ORIENTATION

The correlation analysis between corporate governance quality and entrepreneurial orientation yields interesting results, as shown in Table 4. There is no association between the corporate governance quality segment "board structure and governance" and entrepreneurial orientation, and similarly, no connection is found for the individual dimensions of entrepreneurial orientation (innovation, proactivity, and risk propensity) with the first segment of the corporate governance quality index. The research results indicate a slight positive association between the corporate governance quality segment "transparency and disclosure of information" and the entrepreneurial orientation dimension of "innovation," which is statistically significant at the 5% significance level. This implies that as transparency increases, so does the level of innovation in formulating company strategies, and vice versa. Other dimensions of entrepreneurial orientation, as well as the composite indicator of entrepreneurial orientation, are not associated with the "transparency and disclosure of information" segment of corporate governance quality.

Regarding the corporate governance quality segment "shareholders' rights," the results show a slight positive association with entrepreneurial orientation, which is statistically significant at the 5% significance level. There is also a positive association between "shareholders' rights" and "innovation," and this holds statistical significance at the 1% confidence level. Additionally, at the 10% significance level, there is a slight positive association between "shareholders' rights" and "proactivity." Thus, as the corporate governance quality in the "shareholders' rights" segment increases, so do the dimensions of innovation and proactivity, indicating an increase in entrepreneurial orientation. The correlation coefficients for the variables "social responsibility" and "entrepreneurial orientation" show the strongest associations between the considered variables of corporate governance quality and entrepreneurial orientation. Specifically, there is a moderate positive association between corporate governance quality in the "social responsibility" segment and entrepreneurial orientation, which is statistically significant at the 1% significance level. Similarly, there is a positive association between social responsibility and the indicators of innovation and proactivity, which are statistically significant at the 1% significance level. Thus, as the corporate governance quality in the "social responsibility" segment increases, so does the entrepreneurial orientation of the company, indicating an increase in the level of innovation and proactivity.

Table 4. Interdependence of corporate governance quality and entrepreneurial orientation

Correlations

			1. Board	2.Transparency	3.Shareholders' rights	4.Social responsibil	5-Audit and internal control	6. Risk management	7. Compensation	8.SEECGAN index	9. Innovativeness	10. Proactiveness	11. Risk propensity	12. Entrepreneurial orientation
Spearman's rho	1. Board - structure and governance	Correlation Coefficient	1,000	,614**	,595**	,539**	,569**	,475**	,660**	,757**	,211	,098	-,027	,130
		Sig. (2-tailed)	.	,000	,000	,000	,000	,000	,000	,000	,113	,469	,842	,333
		N	58	58	58	58	58	58	58	58	58	57	58	57
	2. Transparency and disclosure of information	Correlation Coefficient	,614**	1,000	,777**	,620**	,492**	,456**	,746**	,800**	,289*	,185	-,059	,189
		Sig. (2-tailed)	,000	.	,000	,000	,000	,000	,000	,000	,028	,169	,660	,160
		N	58	58	58	58	58	58	58	58	58	57	58	57
	3. Shareholders' rights	Correlation Coefficient	,595**	,777**	1,000	,637**	,450**	,402**	,770**	,800**	,389**	,225	,075	,265*
		Sig. (2-tailed)	,000	,000	.	,000	,000	,002	,000	,000	,003	,093	,577	,046
		N	58	58	58	58	58	58	58	58	58	57	58	57
	4. Social responsibility	Correlation Coefficient	,539**	,620**	,637**	1,000	,507**	,588**	,684**	,838**	,504**	,432**	,164	,473**
		Sig. (2-tailed)	,000	,000	,000	.	,000	,000	,000	,000	,000	,001	,219	,000
		N	58	58	58	58	58	58	58	58	58	57	58	57
	5. Audit and internal control	Correlation Coefficient	,569**	,492**	,450**	,507**	1,000	,669**	,628**	,763**	,155	,137	,070	,165
		Sig. (2-tailed)	,000	,000	,000	,000	.	,000	,000	,000	,245	,308	,600	,219
		N	58	58	58	58	58	58	58	58	58	57	58	57
	6. Risk management	Correlation Coefficient	,475**	,456**	,402**	,588**	,669**	1,000	,561**	,760**	,275*	,238	,137	,270*
		Sig. (2-tailed)	,000	,000	,002	,000	,000	.	,000	,000	,037	,075	,304	,042
		N	58	58	58	58	58	58	58	58	58	57	58	57
	7. Compensation and rewards	Correlation Coefficient	,660**	,746**	,770**	,684**	,628**	,561**	1,000	,891**	,380**	,154	,125	,261*
		Sig. (2-tailed)	,000	,000	,000	,000	,000	,000	.	,000	,003	,251	,348	,050
		N	58	58	58	58	58	58	58	58	58	57	58	57
	8. SEECGAN index	Correlation Coefficient	,757**	,800**	,800**	,838**	,763**	,760**	,891**	1,000	,410**	,288*	,124	,344**
		Sig. (2-tailed)	,000	,000	,000	,000	,000	,000	,000	.	,001	,030	,354	,009
		N	58	58	58	58	58	58	58	58	58	57	58	57
	9. Innovativeness	Correlation Coefficient	,211	,289*	,389**	,504**	,155	,275*	,380**	,410**	1,000	,710**	,172	,816**
		Sig. (2-tailed)	,113	,028	,003	,000	,245	,037	,003	,001	.	,000	,198	,000
		N	58	58	58	58	58	58	58	58	58	57	58	57
	10. Proactiveness	Correlation Coefficient	,098	,185	,225	,432**	,137	,238	,154	,288*	,710**	1,000	,425**	,913**
		Sig. (2-tailed)	,469	,169	,093	,001	,308	,075	,251	,030	,000	.	,001	,000
		N	57	57	57	57	57	57	57	57	57	57	57	57
	11. Risk propensity	Correlation Coefficient	-,027	-,059	,075	,164	,070	,137	,125	,124	,172	,425**	1,000	,613**
		Sig. (2-tailed)	,842	,660	,577	,219	,600	,304	,348	,354	,198	,001	.	,000
		N	58	58	58	58	58	58	58	58	58	57	58	57
	12. Entrepreneurial orientation	Correlation Coefficient	,130	,189	,265*	,473**	,165	,270*	,261*	,344**	,816**	,913**	,613**	1,000
		Sig. (2-tailed)	,333	,160	,046	,000	,219	,042	,050	,009	,000	,000	,000	.
		N	57	57	57	57	57	57	57	57	57	57	57	57

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Source: authors' calculations

A minor positive correlation exists between the quality of corporate governance in the compensation and reward segment and entrepreneurial orientation, reaching statistical significance at the 5% confidence level. Furthermore, the association between this quality segment and innovation is also positive, with a somewhat stronger intensity. Finally, there is a positive relationship between overall corporate governance quality and entrepreneurial orientation, which is statistically significant at the 1% significance level. The relationship between corporate governance quality and innovation (rs = 0.410) is slightly stronger, while the relationship between corporate governance quality and proactivity is of slightly weaker intensity (rs = 0.288). An interesting yet unexpected finding is the lack of association between the quality of corporate governance of the sampled companies and the risk propensity of surveyed managers. It is expected that better corporate governance quality would reduce risk aversion, which is necessary for formulating and implementing entrepreneurial strategies.

3.1. DISCUSSION

The empirical investigation centered around the primary hypothesis, assessing the correlation between corporate governance quality and entrepreneurial orientation. To precisely test this hypothesis, seven auxiliary hypotheses (H_1-H_7) were developed, which addressed the relationships between seven key segments of corporate governance quality and entrepreneurial orientation. The main hypothesis assumed the existence of interdependence between the level of corporate governance quality and entrepreneurial orientation. The research results showed a positive relationship between the overall quality of corporate governance, measured by the SEECGAN index, and entrepreneurial orientation, which was statistically significant at the 1% significance level (rs = 0.344; sig. = .009). Thus, it was demonstrated that as the quality of corporate governance increases, the level of entrepreneurial orientation also increases, and vice versa, indicating a reciprocal relationship between the two variables. The research results also showed that out of the 3 analyzed dimensions of entrepreneurial orientation, two were statistically significant correlates of corporate governance quality. In particular, the findings revealed positive and statistically significant correlations between proactivity, innovativeness, and the quality of corporate governance. The relationship between corporate governance quality and innovativeness was slightly stronger (rs = 0.410; sig. = .001), while the relationship with proactivity was of slightly lower intensity (rs = 0.288; sig. = .030). Based on these presented results, it can be concluded that the results support the main hypothesis, thus it is accepted. The first hypothesis H_1 assumed a direct empirically provable relationship between the quality of corporate gov-

ernance in the transparency and disclosure segment and entrepreneurial orientation. There are numerous studies on this topic such as e.g. McCarthy, Puffer & Lamin[15] and Hult, Hurley & Knight.[16] The results of this research showed that there is no association between the quality of corporate governance in the transparency and disclosure segment and the composite indicator of entrepreneurial orientation. However, there is a slight positive relationship between transparency and disclosure and the dimension of entrepreneurial orientation - innovativeness, which is statistically significant at the 5% significance level (rs = 0.289; sig. = .028). Thus, it was demonstrated that with the increase in the degree of transparency, the level of innovativeness in formulating business strategies also increases, and vice versa. In summary, it can be concluded that the research results provide partial support for the first auxiliary hypothesis, therefore hypothesis H_1 *is partially accepted*.

The second hypothesis H2 assumed that there is a positive relationship between the level of ownership concentration and the entrepreneurial orientation of companies (a similar study was conducted by Keil, Maula and Syrigos[17]). To determine the relationship between entrepreneurial orientation and ownership concentration, a composite indicator of entrepreneurial orientation and two indicators of ownership concentration were used: C1 representing the share of the largest shareholder and C10 representing the aggregate share of the ten largest shareholders. The research results showed that there is no statistically significant association between entrepreneurial orientation and the level of ownership concentration C1, and such a relationship also does not exist between entrepreneurial orientation and the level of ownership concentration C10. However, as vividly shown in Table 5, such differences exist at the level of descriptive statistics, and they are particularly evident when using the C1 concentration level.

[15] McCarthy, D., Puffer, S., Lamin, A.: Entrepreneurial orientation in a hostile and turbulent environment: risk and innovativeness among successful Russian entrepreneurs, *European Journal of International Management*, 12(1-2) 2018, pp. 191.

[16] Hult, G., Hurley, R., Knight, G.: Innovativeness: Its antecedents and impact on business performance, *Industrial Marketing Management*, 33 2004, pp. 429-438.

[17] Keil, T., Maula, M., Syrigos: CEO Entrepreneurial orientation, entrenchment, and firm value creation, *Entrepreneurship Theory and Practice*, 41(4) 2017, pp. 475-504.

Table 5. Differences in Entrepreneurial Orientation Variables by Degree of Ownership Concentration

	C1 > 30%	N	Mean	Std. Deviation	Std. Error Mean
Innovation	,00	21	2,8571	,79282	,17301
	1,00	37	3,1622	1,07402	,17657
Proactivity	,00	21	3,1270	,86587	,18895
	1,00	36	3,3426	,93770	,15628
Risk propensity	,00	21	2,7460	,88760	,19369
	1,00	37	2,7297	,75293	,12378
Entrepreneurial orientation	,00	21	2,9101	,66539	,14520
	1,00	36	3,0787	,75667	,12611
	C1 > 50%	**N**	**Mean**	**Std. Deviation**	**Std. Error Mean**
Innovation	,00	32	3,0469	,88317	,15612
	1,00	26	3,0577	1,11648	,21896
Proactivity	,00	31	3,2043	,90135	,16189
	1,00	26	3,3333	,93333	,18304
Risk propensity	,00	32	2,7500	,81650	,14434
	1,00	26	2,7179	,78708	,15436
Entrepreneurial orientation	,00	31	3,0000	,67403	,12106
	1,00	26	3,0363	,79052	,15503

Source: authors' calculations

The table displays the mean values for variables of entrepreneurial orientation - the composite indicator of entrepreneurial orientation and its dimensions. In the first part of the table, the C1 indicator is used, while in the second part, the C10 indicator is utilized. The mean values of all variables, except for the risk propensity variable, are higher in the case of a higher degree of ownership concentration, with these differences being more pronounced when using the C1 indicator. However, the presented results do not provide sufficient support for the second auxiliary hypothesis, so *hypothesis H_2 is rejected*.

The third hypothesis assumed a relationship between the board size, the number of subcommittees, the composition, expertise of the board, and entrepreneurial orientation (some of the authors who have addressed the same topic are Arzubiaga et al[18]). The research results showed a slight positive relation-

[18] Arzubiaga, U. et al.: Entrepreneurial orientation and innovation in family SMEs: Unveiling the (actual) impact of the Board of Directors, *Journal of Business Venturing*, 33(4) 2018, pp. 455-469.

ship between the size of the supervisory board and entrepreneurial orientation, which is statistically significant at the 5% level (rs = 0.265; sig. = .047), indicating that as the number of supervisory board members increases, the level of entrepreneurial orientation also increases. Furthermore, the results indicated a slight positive relationship between the number of subcommittees and entrepreneurial orientation, which is statistically significant at the 5% level (rs = 0.299; sig. = .024), suggesting that as the number of established committees or subcommittees increases, the level of entrepreneurial orientation also rises. The association with the composition of the supervisory board and entrepreneurial orientation was tested using the indicator of the proportion of women on the supervisory board. The research results showed no statistically significant relationship between the representation of women on the supervisory board and entrepreneurial orientation, although this indicator is relevant in assessing the overall quality of corporate governance. Regarding the expertise of the supervisory board, the hypothesis assumed that a higher level of expertise contributes to the growth of entrepreneurial orientation; however, this part of the hypothesis could not be tested due to missing data. Thus, we can provide partial support for the third hypothesis, so H_3 *is partially accepted*.

The fourth hypothesis proposed a positive relationship between the quality of corporate governance in the compensation and reward segment and a company's entrepreneurial orientation. The study findings confirmed a modest positive correlation between the quality of corporate governance in this segment and entrepreneurial orientation, which was statistically significant at the 5% level (rs = 0.261; sig. = .050). The research also revealed that as the quality of corporate governance in the compensation and reward segment improves, the level of entrepreneurial orientation tends to increase. Furthermore, the relationship between the quality of this segment and innovativeness was found to be positive and slightly stronger in intensity, reaching statistical significance at the 1% level (rs = 0.380; sig. = .003). These results provide evidence supporting this hypothesis, leading to the *acceptance of* H_4. Many authors have studied this field, such as Mcconvill[19] and Hong, Li and Minor.[20]

The fifth hypothesis posits a positive relationship between the extent of social responsibility and entrepreneurial orientation. The study findings revealed a moderate-intensity positive correlation between the quality of corporate governance in the social responsibility segment and entrepreneurial orientation, which was statistically significant at the 1% level (rs = 0.473; sig. = .000).

[19] McConvill, J.: Positive corporate governance and its implications for executive compensation, *German Law Journal*, 6(12) 2005, pp. 1777-1804.

[20] Hong, B., Li, Z., Minor, D.: Corporate governance and executive compensation for corporate social responsibility, *Journal of Business Ethics*, 136 2015. pp. 199-213.

Moreover, there exists a moderate-intensity positive correlation between social responsibility and indicators of innovativeness and proactiveness, also significant at the 1% level. Consequently, as the quality of corporate governance in the social responsibility segment improves, the company's entrepreneurial orientation, including levels of innovativeness and proactiveness, tends to increase. Based on these findings, it can be inferred that they lend support to the fifth hypothesis, thus leading to the *acceptance of* H_5. Such results were also obtained by other authors who have researched similar areas, such as Hernández-Perlines and Rung-Hoch.[21]

The sixth hypothesis assumed a positive relationship between the quality of corporate governance in the audit and internal control segment and the entrepreneurial orientation of the company. This area is the subject of research by many authors, such a Zhan et al.[22] and Su et al.[23] Our research results indicate that there is no association between the quality of corporate governance in the audit and internal control segment and entrepreneurial orientation, and such relationships do not exist for the dimensions of entrepreneurial orientation - innovativeness, proactiveness, and risk propensity. Based on the presented results, it can be concluded that the results do not provide support for this hypothesis, so H_6 *is rejected*.

The seventh hypothesis posited a positive relationship between the quality of corporate governance in the risk management segment and the entrepreneurial orientation of the company. This research area has also been explored by authors like Olori and Sylva.[24] The findings of our research indicate a slight positive correlation between the quality of corporate governance in the risk management segment and entrepreneurial orientation, which is statistically significant at the 5% level (rs = 0.270; sig. = .042). Additionally, it was observed that there exists a statistically significant slight positive correlation between the quality of corporate governance in this segment and innovativeness (rs = 0.275; sig. = .037). Furthermore, at the 10% significance level, a slight

[21] Hernández-Perlines, F., Rung-Hoch, N.: Sustainable entrepreneurial orientation in family firms, *Sustainability*, 9 2017, pp. 1212-1226.

[22] Zhang, Y., Zhou, J., Zhou, N.: Audit committee quality, auditor independence, and internal control weaknesses, *Journal of Accounting and Public Policy*, 26(3) 2007, pp. 300-327.

[23] Su, H., Zheng, K., Li, S.: Research on the relationship among internal audit quality, interactive mechanism of management structure and corporate value, *Proceedings of the 2017 3rd International Conference on Economics, Social Science, Arts, Education and Management Engineering (ESSAEME 2017)*, 2017, pp. 1212-1217.

[24] Olori, W., Sylva, W.: Corporate governance system and entrepreneurial orientation in the banking sector: evidence from a developing country, *International Journal of Innovation and Economic Development*, 2 2017, pp. 29-48.

positive correlation between the quality of corporate governance in the risk management segment and proactiveness was identified (rs = 0.238; sig. = .075). Based on these research findings, it can be inferred that they lend support to the seventh hypothesis, thereby leading to the *acceptance of* H_7.

4. CONCLUSION

Research on corporate governance quality has predominantly focused on open corporate governance systems, leaving closed systems, such as those found in the Republic of Croatia, relatively understudied. Corporate governance quality is commonly evaluated using a comprehensive measure an index. The SEECGAN Index serves as a metric for assessing corporate governance quality, aiming to objectively and reliably gauge the level of good corporate governance practices within a given period and business entity. Findings from research conducted on a sample of 58 companies listed on the Zagreb Stock Exchange indicate that the quality of corporate governance within these firms falls below satisfactory levels (with the SEECGAN Index averaging at 4.97, less than half of its maximum potential value).

The findings indicate a direct relationship between the quality of corporate governance and the size of both the Management and Supervisory Boards. Moreover, they suggest that greater representation of women on these boards enhances corporate governance quality. Additionally, the study reveals a direct relationship between the quality of corporate governance and the presence of specialized committees. Surprisingly, it was found that the level of ownership concentration does not exert a direct influence on the corporate governance quality of the companies examined. Entrepreneurial orientation, as the most commonly researched form of corporate entrepreneurship, has been explored through three dimensions: innovativeness, proactiveness, and risk-taking. The research results have shown that the level of entrepreneurial orientation of companies in the sample is not high (the average value is 3 out of the maximum value of 5), with proactiveness being the most developed element of entrepreneurial orientation. When analyzing innovativeness, the research results clearly indicate that it is more about modifications and improvements rather than true innovativeness as similar studies also shown. The results have shown that the level of ownership concentration, as a mechanism of corporate governance, is not relevant in assessing the level of entrepreneurial orientation, but have shown that the size of the Supervisory Board, as well as the number of specialized committees, is in a straight line related to the level of entrepreneurial orientation (the size of the board can approximate a “pool” of knowledge, skills, and abilities). The participation of women on boards is not relevant for assessing entrepreneurial orientation. Finally, the research results have con-

firmed the main hypothesis, showing that there is an interdependence between the level of corporate governance quality and entrepreneurial orientation.

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