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Interaction Effect of Entrepreneurial Orientation Dimensions on SMEs Export Performance

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Abstract:

The present study aims to reveal the main and interactive effects of dimensions of entrepreneurial orientation (EO) on the export performance of small and medium-sized enterprises (SMEs). Particularly, this study investigates the moderating roles of proactiveness and risk-taking on the relationship between innovativeness and export performance. Correlational and hierarchical regression analyses were performed on data collected from 109 exporting SMEs in Turkiye. The findings of the study indicate that the interactive effect of innovativeness and proactiveness has no significant effect on export performance, while the interactive effect of innovativeness and risk-taking has a significant effect on export performance. In particular, the finding reveals that innovation and performance are positively and significantly related at moderate and low levels of risk-taking, while not significant in high levels of risk-taking. By analyzing the effects of dimensions of EO on export performance both individually and jointly, this study has contributed to a better understanding of the relationship between EO and performance in SMEs, and how and under what conditions innovativeness is related to export performance. On the basis of the findings of this study, it is recommended that the entrepreneurial orientation of SMEs should be developed through a variety of incentives, training, practices and programmes.

Keywords:

Entrepreneurial Orientation, Export Performance, SMEs, Turkiye.

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Introduction

One of the determinants that affect the performance of small and medium-sized (SME) firms, both on entering foreign markets (Haddoud et al. 2021) and afterward international performance (Lu et al., 2023) is the entrepreneurial orientation (EO). Defined as a composite structure made up of three sub-dimensions, namely proactiveness, innovativeness, and risk-taking (Covin & Slevin, 1989; Miller, 1983; Wales et al., 2011), it is one of the often-used and proven constructs in management and strategy literature (e.g., Anderson et al., 2015).

Prior studies indicate that EO has a significant effect on international performance (Lu et al., 2023), including export performance (Hizarci et al., 2023). However, the ways in which the EO dimensions interact and combine to determine a firm performance are surprisingly incompletely understood. Resource constraints in SMEs are evident. Although EO is conceptualized and empirically shown to have a positive impact on firm performance, the cost and uncertainty associated with each EO dimension in SMEs suggest that the relationship between each EO dimension and performance may not always be evident in all cases (Huang et al., 2023). A limited number of previous studies on the interaction of EO dimensions on firm outcomes have examined, for example, the interactive effects (e.g., Agyapong et al., 2021), conditional indirect effects (e.g., Putnins & Sauka, 2020), and configurations of EO components (e.g., Lisboa et al., 2016; Matemane et al., 2024) on firm performance. Scholars contend that because the three dimensions of EO are distinct, their effects on other constructs should be investigated separately (Hughes & Morgan, 2007; Miller, 2011; Tang et al., 2009). Accordingly, in this study, we aim to reveal the main and interactive effects of EO dimensions on the export performance of SMEs.

Among the EO dimensions, innovativeness is often considered an important one due to its contribution to firm growth and profitability (Kreiser et al., 2013). Innovation facilitates SMEs to adapt to changing market conditions by offering new and improved products and services and also increases their propensity to enter international markets. Previous studies have shown that innovativeness has a positive impact on the export performance of SMEs (Hizarci et al., 2023). In response to calls from scholars to further investigate the interplay role of EO dimensions on firm outcomes (e.g., Putnins & Sauka, 2020), this study investigates the moderating role of proactiveness and risk-taking on the relationship between innovativeness and SMEs export performance. In particular, we argue that high levels of proactiveness together with innovativeness will further increase the export performance of SMEs. Proactiveness, which is another component of EO, that refers to the tendency to foresee future opportunities and act accordingly by acting before competitors (Covin & Miles 1999; Wiklund & Shepherd, 2011), can strengthen the positive effect of innovation on export performance due to its driving force (Joshi et al., 2015). However, risk-taking, the other component of EO, has a slightly more

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ambiguous effect on the relationship between innovativeness and firm outcomes. Innovativeness and risk-taking are inherently interrelated, representing an important aspect of the entrepreneurial process (Covin & Wales, 2019). However, previous research has indicated that entrepreneurial firms that take moderate levels of risk outperform firms that take very high or very low levels of risk (Huang et al., 2023). Therefore, in our study, we suggest that SMEs with moderate risk-taking have better export performance than SMEs with very high or very low risk-taking. In Figure 1, our research model is displayed.

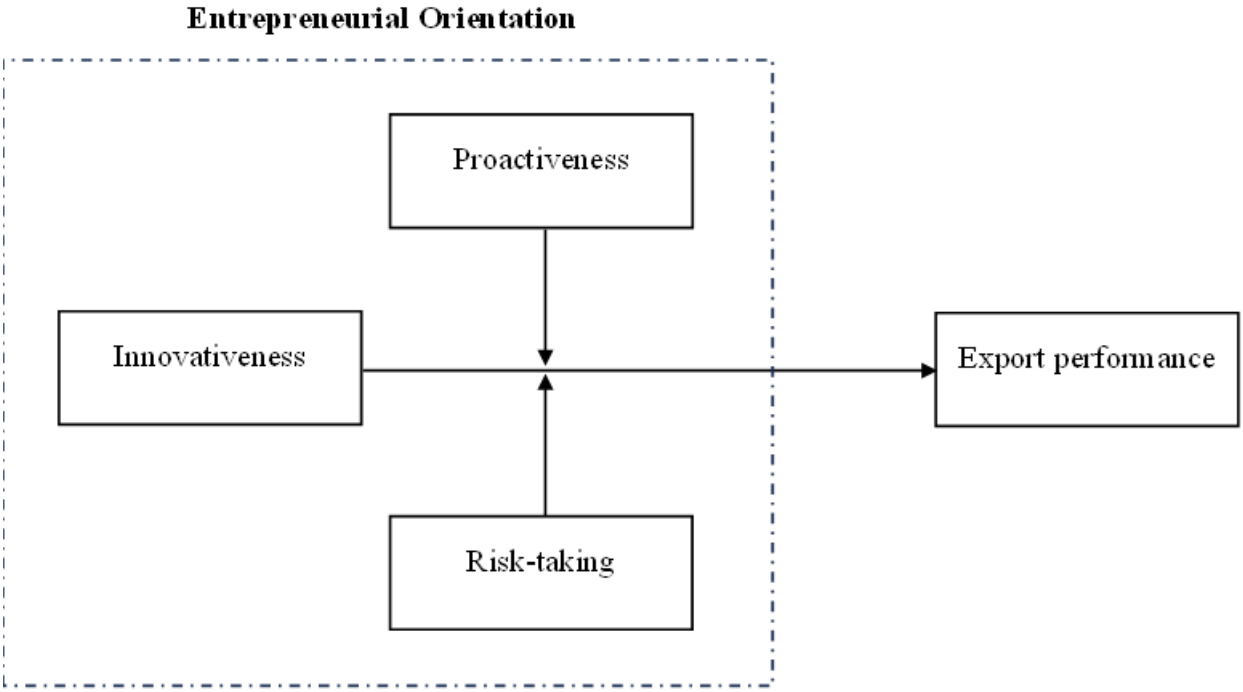

Figure 1: Research Model

Among our study's contributions to the related field is a detailed model that is constructed using a situational approach to understand how and why EO dimensions contribute to firm performance. Although previous studies that adopted a unidimensional EO have provided important insights (Covin & Wales, 2019), our study responds to previous calls by examining the effects of EO components individually and jointly on firm performance (Hughes & Morgan, 2007; Miller, 2011; Tang et al., 2009).

The structure of our study is as follows. The theoretical framework is explained in the following section, which includes a conceptualization of how the EO dimensions jointly affect export performance. The following section includes a description and findings of our empirical research and tests. The final section summarizes the results, discusses the implications of our findings, and points to potential directions for future research.

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Literature Review and Hypothesis Development

Innovativeness and Export Performance

Innovativeness is seen as one of the fundamental dimensions of the concept of EO. It refers to the ability of enterprises to develop new ideas, improve existing processes, and offer innovative products or services in order to gain competitive advantage and ensure sustainable growth (Miller, 2011; Wales et al., 2011). Innovativeness involves not only radical product and service changes but also the creation of value through efficient resource utilization. We study the impact of firm innovativeness by using a resource-based view - RBV (Barney, 1991). According to the RBV, a firm's competitive advantage is derived from capabilities and resources that are valuable, rare, not substitutable, and not completely imitable. Innovativeness is regarded as a strategic resource for firms to enhance competitiveness by providing unique and value-added products and services compared to competitors (Boso et al., 2013).

Innovativeness has a number of significant and positive effects on firm outcomes in the international context. In particular, it successfully supports the firm's expansion, diversification, and differentiation efforts in international markets. This is important because international markets require a greater competitive advantage than domestic markets. In addition, innovativeness helps the firm adapt to changing customer demands and is therefore effective in meeting and satisfying customer expectations (Ribau et al., 2017; Saridakis et al., 2019). Because of these positive contributions, prior studies have demonstrated that innovative firms perform better internationally (Covin & Wales, 2019). Accordingly, we argue

H1: innovativeness has a direct positive relationship with SME export performance.

The Moderating Role of Proactiveness

Proactiveness, one of the components of EO, refers to being able to anticipate demands and opportunities in the market and thus gain a competitive advantage by being the first to enter the market by offering new products or services before competitors (Miller, 2011; Wales et al., 2011). Proactiveness is critical for firms in international markets. In particular, proactive firms can anticipate changes, trends, and consumer tendencies in global markets and take action before their competitors, offering innovative products and services and thus gaining strategic advantage. Proactive firms that can respond quickly to changing environmental conditions in international markets gain significant advantages in terms of firm outputs such as sustainable growth and profitability (Karami & Tang, 2019; Jantunen et al., 2005).

Given that proactiveness is an important characteristic of the entrepreneurial firm in the face of changing environmental conditions, it is likely to play an important role in examining the relationship between innovation and export performance. In particular, we argue that proactiveness will strengthen the positive

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relationship between innovativeness and export performance. Proactiveness is a critical trigger for discovering and evaluating market opportunities. Studies show that proactive firms allocate more resources to studying market dynamics to identify and exploit new opportunities. In addition, proactive firms can better assess the business world (Zhang & Hartley, 2018). All of this points to the fact that proactive firms tend to be innovative firms. Moreover, while proactiveness provides momentum to an innovative firm in its strategic choices and actions, the absence of proactiveness can lead to structural inertia (Hughes & Morgan, 2007; Rauch et al., 2009). Therefore, while SMEs' innovative efforts positively influence export performance, we expect that their proactiveness will make this effect even stronger. Accordingly, we suggest:

H2: proactiveness moderates the relationship between innovativeness and SME export performance such that, the positive effect of innovativeness on export performance will become stronger as the level of proactiveness increases.

The Moderating Role of Risk-Taking

Risk-taking, the last dimension of the concept of EO, refers to the tendency of firms to make bold decisions in the face of uncertainty, for example, to make investments for innovative products and services for exploiting new opportunities (Miller, 2011; Wales et al., 2011). International markets are inherently associated with risk. These risks are better understood by the lack of control of the firm over various environmental factors (such as political and economic uncertainties, and cultural differences) in international markets (Liesch et al., 2011). Moreover, considering the resource constraints of SMEs, risk constitutes an important aspect of this process in entrepreneurial endeavors (Covin & Wales, 2019). Therefore, it is inevitable for exporting SMEs to take risks when entering foreign markets and developing innovative products and services for sustainable competitive advantage.

In general, scholars argue that firms that take risks are more determined and quicker in making strategic decisions, which increases their overall performance levels (Covin & Slevin, 1989). Although an entrepreneurial firm needs to be willing to take risks in order to enter a new market, develop a new product or service, and seize opportunities before its competitors in order to gain a competitive advantage (Wales et al., 2011; Miller, 2011), risk-taking should be done rationally. The key issue is what level of risk-taking has a significant positive effect on the export performance of innovative SMEs. Scholars argue that there is a curvilinear inverted U-shaped link between risk-taking and performance in SMEs rather than a linear one (e.g., Kreiser et al., 2013). This suggests that while SMEs with high levels of risk-taking are more likely to suffer costly failure, risk-averse SMEs may miss market opportunities and incur opportunity costs (Hughes & Morgan, 2007). Decisions about foreign markets are critical for SMEs as they involve uncertainty and thus affect performance (Chetty et al., 2024). However, scholars argue that in uncertain environments firms should avoid taking high levels of risk and

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focus on preserving the resources they have (Kreiser & Davis, 2010). Therefore, we propose that low to moderate level of risk-taking will strengthen the positive relationship between SMEs' innovation and export performance.

H3: Risk-taking moderates the relationship between innovation and SME export performance, such that the positive effect of innovation on firm performance is stronger when risk-taking is low to moderate than when it is high.

Methods and Data

Sample and Procedure

Using a simple random sampling strategy, this study aimed to investigate the relationship between entrepreneurial orientation and the export performance of Turkish SMEs. Our study included SMEs that met specific criteria, including being small or medium-sized, controlled by majority-owned individuals, and exporting. 500 SMEs were selected from registered Chambers of Commerce and contacted by senior management representatives. Data was collected through face-to-face contact in 2024, with questionnaires distributed with a cover letter stating the study's purpose and anonymity. Several visits were made to encourage participants to complete the questionnaires.

With an effective response rate of 21.8%, 109 valid surveys were considered valid. The characteristics of the SMEs are set out in Table 1 and Figure 2 below. The average age of SMEs in our sample is 43.16 years, they have an average number of employees of 62.02. More than half of them (56.9%) have between six and twenty years of experience in exporting, and 56% export to one to ten countries. SMEs come from a variety of sectors; 32.6 % from manufacturing, 20.8 % from agriculture, forestry, and fishing, 15.8 % from textiles and clothing, accounting for more than half of the sample.

Measurement Instruments

Entrepreneurial Orientation

The EO of the SMEs was measured employing the Entrepreneurial Orientation Scale – EOS (Covin & Slevin, 1989), which consists of nine items that are responded on a 7-point Likert-type scale. The EOS contains three items that measure a firm's inclination towards innovativeness (e.g. "In general, the top managers of my firm favor … Very many new lines of products and services"). There are three items in the EOS that measure the proactiveness of a firm (e.g. "In dealing with its competitors, my firm … Typically initiates actions to which competitors then respond"). In order to measure the risk-taking attitude of a firm, the EOS includes three items (e.g. "In general, the top managers of my firm have… A strong proclivity for high-risk projects (with chances of very high return)"). Prior studies have indicated that the EOS has good reliability and validity both in its original language (Covin & Wales, 2012) and in

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Turkish (Şahin & Gürbüz, 2020). The reliability (Cronbach's alpha) of the EOS subdimensions was 0.721 for innovativeness, 0.845 for proactiveness, and 0.771 for risk-taking.

Characteristics	Percentage (%)	Characteristics	Percentage (%)
Firm Size		**Firm Age**	
< 10	9.1	< 2 years	6.4
10-50	32.7	2-10 years	19.1
51-250	58.2	11-25 years	33.6
> 250	-	26-50 years	31.8
		> 50 years	9.1
Export Experience		**Number of Countries Exporting**	
< 2 years	4.6	1-5	30.3
2-5 years	12.8	6-10	25.7
6-10 years	19.3	11-15	9.1
11-20 years	37.6	16-20	8.3
> 20 years	25.7	> 20	26.6

Table 1: SMEs' characteristics

Export Performance

In measuring the export performance of SMEs, we used a subjective approach to the extent to which the firms' sales reached their export targets (market share growth, sales volume, and sales growth). For the subjective assessment of export performance, we used three items derived from the Export Performance Scale (EXPERF), which was developed by Zou et al. (1998) and has been widely used in measuring firms' export performance in previous studies (e.g., Brancu et al., 2025). The sample item was: "This export venture has generated a high volume of sales". Responses were scored on a seven-point Likert scale. All three items of the scale were averaged to measure subjective export performance. The Cronbach's alpha value revealed a reliability coefficient of 0.886.

Control Variables

Following the recommendations of prior studies (e.g., Venkateshamurthy et al., 2021), we used some firm-level characteristics (e.g. firm age, size, number of years of exporting) as control variables in the analysis, which may have an effect on the dependent variable export performance. As control variables, we used firm age (number of years between the establishment of the firm and the year of this study), firm size (number of people employed), and export experience (number of years between the year the firm started exporting and the year of this study).

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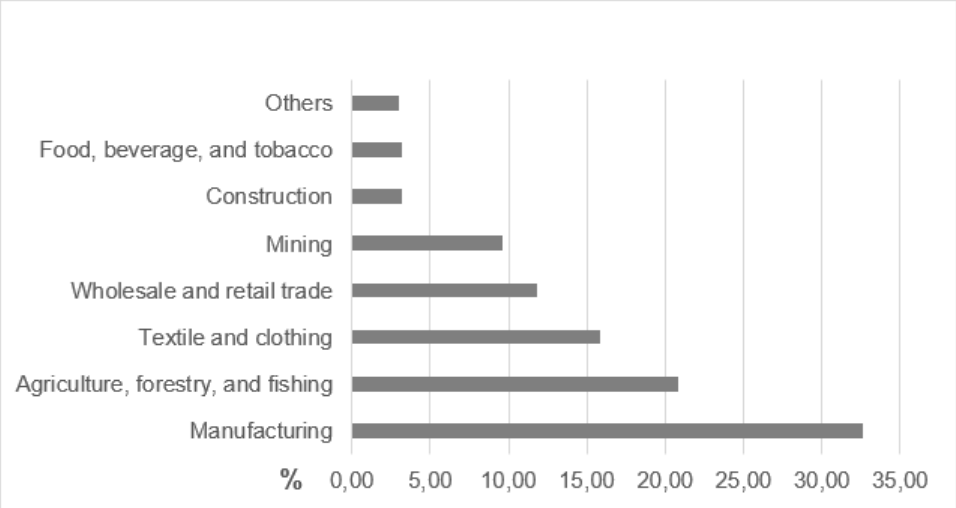

Figure 2: Share of SMEs by sector

Results

Test of Measurement Model

The construct validity of the measurement model was assessed by confirmatory factor analysis (CFA) using LISREL software (Jöreskog & Sörbom, 2003). The CFA findings showed that the model provided a satisfactory fit to the data with a $\chi 2$ (df=48) = 63.76; GFI = 0.91, CFI = 0.98, IFI 0.98, and RMSEA = 0.055. All factor loadings ranged from 0.51 to 0.88 and were highly significant. The composite reliabilities of all constructs were greater than 0.70. The average variance extracted (AVE) values were also greater than 0.50, indicating convergent validity and reliability (Fornell & Larcker, 1981). By comparing the square root of each construct's AVE with its correlations with other latent constructs, we also examined discriminant validity. The results showed that the AVE for each construct was higher than its correlations with other latent constructs, indicating discriminant validity. Overall, these findings suggest that the validity and reliability of the measures in our study were satisfactory (Cheung et al., 2024).

Descriptive Statistics and Correlations

The mean values, standard deviations, and correlations between all variables in our study are shown in Table 2. As shown in the table, the significant and positive correlations between the EO components range from 0.49 to 0.57. In addition, the significant and positive correlations between EO components and export performance range from 0.35 to 0.46.

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Variables	M	SD	1	2	3	4	5	6	7
1. Firm age	43.16	18.31	-						
2. Firm size	62.02	26.97	0.08	-					
3. Exporting experience (in years)	16.26	10.83	0.02	0.23*	-				
4. Innovativeness	4.43	1.40	-0.01	0.037	0.02	(0.72)			
5. Proactiveness	4.69	1.48	0.07	0.167	0.11	0.51**	(0.84)		
6. Risk-taking	4.51	1.44	0.01	-0.01	-0.03	0.49**	0.57**	(0.77)	
7. Export performance	5.16	1.41	0.09	-0.13	0.08	0.35**	0.40**	0.46*	(0.88)

Table 2: Descriptive statistics and correlations among study variables

Notes: Sample size = 109. Alphas are on the diagonal. M: mean; SD: standard deviation.

**p< 0.01, *p< 0.05

Hypotheses Testing

Following the recommendations earlier studies (e.g., Aiken & West, 1991), we applied a four-step regression analysis to determine the effects of independent variables and interaction terms on export performance. We introduced the control variables into the regression model in the first step, the independent variables, which are the EO components, in the second step, the interaction terms of innovativeness and proactiveness in the third step, and the interaction terms of innovativeness and risk-taking in the last step. Table 3 shows the results of the hierarchical multiple regression analysis.

The findings in the first model, in which we regressed the control variables, showed that the effects of firm age, firm size, and export experience on export performance were not statistically significant.

According to Hypothesis 1, it was postulated that innovativeness would have a positive and significant effect on export performance. In Model 2, innovativeness did not have a significant effect on export performance ($\beta = 0.113$, ns), but had a significant and positive effect in Model 3 ($\beta = 0.297$, $p < 0.05$), as well as in Model 4 ($\beta = 0.840$, $p < 0.01$). Since the main effect of innovativeness was not significant In Model 2, Hypothesis 1 was therefore not supported.

Hypothesis 2 postulated that proactiveness would moderate the relationship between innovativeness and export performance such that, the positive effect of innovativeness on export performance would become stronger as the level of proactiveness increases. The two-way interaction term between innovativeness and proactiveness was not significant in Model 3 ($\beta = -0.076$, ns), as well as in Model 4 ($\beta = 0.0012$, ns). Consequently, Hypothesis 2 was not confirmed.

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Steps and variables	Model 1		Model 2		Model 3		Model 4	
	B	**SE**	***B***	**SE**	***B***	**SE**	***B***	**SE**
Intercept	4.99	0.24	2.389	0.486	1.022	1.109	0.257	1.154
Firm age	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Firm size	-0.001	0.001	-0.001	0.001	-0.001	0.001	-0.001	0.001
Exporting experience	0.015	0.013	0.013	0.011	0.013	0.011	0.011	0.011
Innovativeness (INNO)			0.113	0.101	0.450*	0.266	0.657**	0.281
Proactiveness (PRO)			0.185	0.105	0.502**	0.254	0.148	0.304
Risk-taking (RISK)			0.289**	0.104	0.297*	0.104	0.840**	0.283
INNO x PRO					-0.076	0.055	0.012	0.069
INNO x RISK							-0.134*	0.065
$F_{overall}$	1.398		7.160***		6.458***		6.359***	
R^2	0.038		0.296		0.309		0.337	
F_{change}			12.464***		1.877		4.223*	
R^2_{change}			0.258		0.013		0.028	

Table 3: Results of hierarchical regression analyses for export performance.

Notes: Sample size = 109. Non-standardized regression coefficients are reported. SE = standard error.

**p< 0.01, *p< 0.05.

Hypothesis 3 postulated that risk-taking would moderate the relationship between innovativeness and export performance, such that the positive effect of innovation on firm performance would be stronger when risk-taking is low than when it is high. The two-way interaction term between innovativeness and risk-taking was significant in Model 4 (β = -0.134, p < 0.05). These findings provide some support for Hypothesis 3; risk-taking moderated the relationship between innovativeness and export performance. However, to better understand what a significant two-way interaction indicates, we conducted simple slope tests, following the recommendations of earlier studies (e.g., Aiken & West, 1991), to estimate the slope of the relationship between innovativeness and export performance at high and low levels of risk-taking. Figure 3 displays the resultant graph. The findings of the simple slope test showed that innovativeness was positively and significantly related to export performance when the level of risk-taking was low (β = 0.412, p < 0.01) and moderate (β = 0.235, p < 0.05), but was not significantly related to export performance when the level of risk-taking was high (β = 0.075, ns). Thus, Hypothesis 3 was supported.

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Discussion

In this study, we aimed to reveal the main and interactive effects of EO dimensions on the export performance of SMEs. In particular, we proposed that proactivity and risk-taking would moderate the relationship between innovation and export performance.

Our findings show that the main effects of EO dimensions on SMEs' export performance are not significant. In particular, we found that innovativeness has a non-significant main effect on export performance. This finding is consistent with the findings of a few previous studies (e.g., Ahmed & Brennan, 2019; Zhang et al., 2012). Although the literature shows that innovativeness has a positive contribution to firm outputs (Covin & Wales, 2019; Ribau et al., 2017; Saridakis et al., 2019), it is obvious that the effect of innovativeness on firm performance in SMEs requires a situational approach to be better evident under certain conditions.

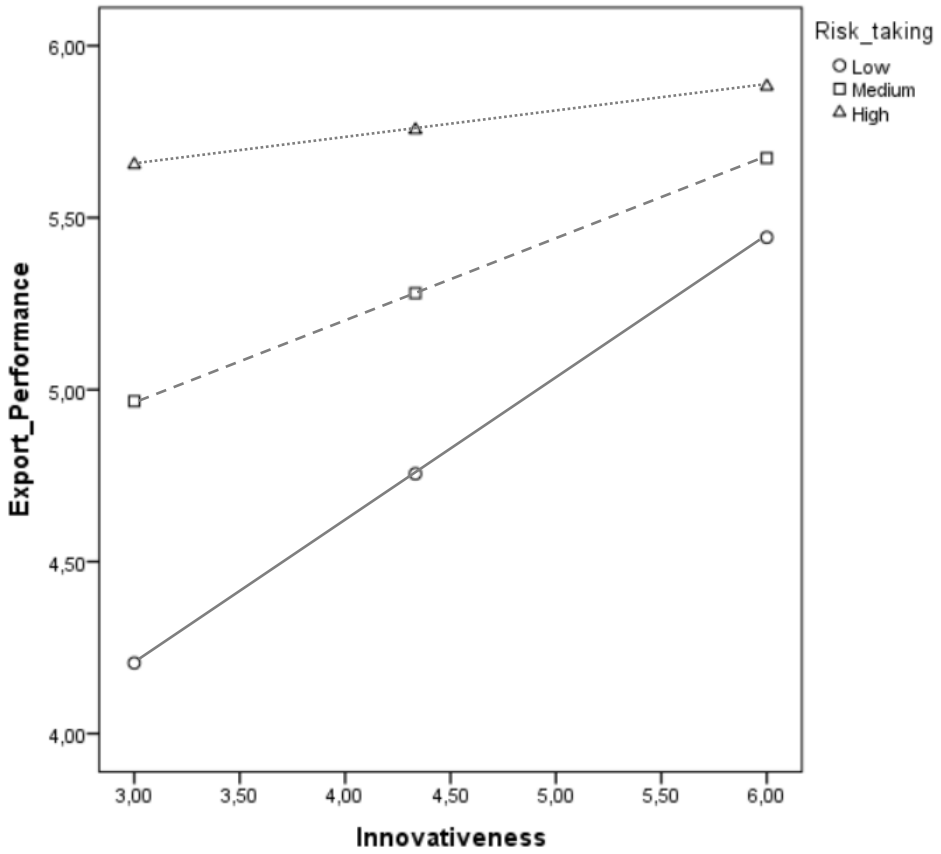

Figure 3: Risk-taking as a moderator of innovativeness and export performance

Then, the analysis examining the interaction terms along with the main effects of the EO dimensions found that the interaction term of innovativeness and risk-taking had a significant effect on export

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performance, but the interaction term of innovativeness and proactiveness was not significant. In particular, we find that moderate and low risk-taking strengthen the relationship between innovativeness and export performance.

This finding provides some support for the curvilinear inverted U-shaped relationship between risk-taking and performance in previous studies (Kreiser et al., 2013), the relationship between innovativeness and export performance is stronger in the case of moderate level of risk-taking than in the case of high level of risk-taking. However, we also find that a low level of risk-taking strengthens the relationship between innovativeness and export performance. Although this finding is unexpected, it is consistent with some studies that examine the effects of EO dimensions on firm outputs with a configurational approach and show the effect of low levels of risk-taking (e.g., Lisboa et al., 2016).

Conclusion

Theoretical and Practical Implications

From a theoretical perspective, our study contributes to the EO literature. By analyzing the effects of EO dimensions on firm performance both individually and jointly, our study addresses earlier recommendations (Hughes & Morgan, 2007; Miller, 2011; Tang et al., 2009). The findings, which show that EO dimensions do not have direct main effects on export performance, do not discredit EO as a concept. We indicate that innovativeness is related to export performance, but this relationship may occur through its interaction with risk-taking. Therefore, our study, which shows how and in which conditions innovativeness is related to export performance, has contributed to a better understanding of the EO-performance relationship in SMEs. We therefore extend the literature on innovativeness and export performance of SMEs by showing that risk-taking conditions the performance outcomes of firm innovation.

From a practical standpoint, our study has demonstrated that EO has a significant impact on SMEs' export performance. It is clear how important SMEs are to the economies of both developed and developing nations (Bisht et al., 2024). In light of the policy implications, we advise that government agencies or organizations that support SMEs' globalization focus on and give priority to the development of EO by SMEs decision-makers. EO can be learned, developed, and enhanced, according to studies (Frank et al. 2005). Government support policies can also encourage SMEs to be more entrepreneurial (Prasannath et al., 2024).

Limitations and Future Research

The current study has certain limitations, just like any other study. First, the limitation is related to the sample used in this study. It is evident that in order to generalize the findings of our study on Turkish

SMEs, evidence from other contexts is required. The generalizability of the findings can be ensured by future studies, especially in other economies.

Second, the cross-sectional research design of our study makes it challenging to draw conclusions about a cause-and-effect relationship. It takes time for a firm's innovation efforts to materialize and demonstrate their influence on outputs (Bowen et al., 2010). Therefore, using a cross-sectional research design, for instance, to examine the long-term effects of innovation on export performance in SMEs does not appear to be feasible. Future longitudinal studies that explore the relationship between innovation and export performance are necessary given the context and time dependency of the variables the study focused on.

Finally, in our current study, SMEs' export performance was measured subjectively. Subjective performance measurement is widely used in EO research and has been shown to be highly correlated with objective performance measurements (e.g., Singh et al., 2016; Vij & Bedi, 2016). Nevertheless, subjective performance measurements may not accurately indicate actual performance. In future studies, the accuracy of the findings in this study can be ensured by objectively measuring SMEs' export performance.

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