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The Influence of Entrepreneurial Education, Opportunity, Orientation, and Advantage on Firm Performance

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Abstract

Purpose: This study examines how entrepreneurial education, opportunity orientation, and advantage interact to enhance entrepreneurs' performance in international markets. It aims to provide insights to strengthen SME competitiveness worldwide.

Methodology/approach: This study employs a quantitative survey, distributing questionnaires to 101 active entrepreneurs in the export-import and cross-border business sectors. The data were analyzed using partial least squares structural equation modeling, with variables based on validated literature.

Results: The findings show that entrepreneurial opportunities and entrepreneurial orientation significantly influence firm performance, whereas entrepreneurial education and entrepreneurial advantage do not, reinforcing prior studies on opportunity recognition, proactiveness, innovation, and risk-taking as global success factors.

Conclusions: The findings of this study indicate that the performance of international firms is largely and consistently influenced by entrepreneurial opportunity recognition and entrepreneurial orientation, highlighting the crucial role of proactive, innovative, and risk-taking behaviors in achieving superior outcomes in international markets. In contrast, entrepreneurial education and entrepreneurial advantage do not show a statistically significant direct effect on international firm performance, suggesting that formal knowledge acquisition and perceived competitive strengths may contribute only indirectly or through other mediating factors rather than exerting an immediate impact.

Limitations: This study is limited by its small sample size and focus on entrepreneurs already active in international business. Future research should consider additional factors, such as market access, digitalization, and organizational culture.

Contributions: This study highlights the key drivers of international firm performance and offers guidance for entrepreneurs, educators, and policymakers to enhance competitiveness, improve curricula, and shape supportive policies.

Keywords: *Entrepreneurial Advantage, Entrepreneurial Education, Entrepreneurial Opportunity, Entrepreneurial Orientation, Firm Performance*

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1. Introduction

Globalization and technological advancements have encouraged many companies and business players, including those in the MSME sector, to expand their operations internationally 6. This phenomenon demands enhanced firm performance, particularly in terms of entrepreneurs' ability to compete, innovate, and create added value in an increasingly competitive global market (Simanjorang et al.,

2023). In Indonesia, the government has demonstrated strong support for SMEs, recognizing them as the backbone of the national economy, given their significant contribution to GDP (over 60 percent) and employment (around 97 percent).

However, their participation in export activities remains relatively low, with SMEs accounting for only approximately 15.7 percent of the total export volume (Tambunan, 2024). This indicates that most SMEs still face significant barriers to achieving optimal international entrepreneurial performance, particularly in terms of market penetration and competitiveness. Therefore, entrepreneurs require strategic capabilities such as entrepreneurial education, entrepreneurial orientation, entrepreneurial opportunity, and entrepreneurial advantage to compete globally.

Among these factors, entrepreneurial education plays a critical role in enhancing international performance. Through formal and informal learning, entrepreneurs acquire the knowledge and skills necessary to navigate complex global markets and adapt to diverse cultural, legal, and consumer contexts (Mahmood, Mohd Zahari, Ibrahim, Nik Jaafar, & Yaacob, 2020). In the framework of the Resource-Based View (RBV), entrepreneurial education helps entrepreneurs identify and utilize unique and inimitable resources to build competitive advantages (Zhou, Ma, Su, Zhang, & Liu, 2024). Moreover, organizational learning and development have been found to mediate the relationship between education and firm performance, particularly under dynamic and uncertain global conditions (Sudhartio, Peranginangin, Hamsal, & Ganiarsa, 2023; Sutejo, Rizki, Handayani, & Rinaldi, 2024).

Another essential factor is entrepreneurial opportunity, which reflects the ability to identify and exploit opportunities in foreign markets. Entrepreneurs who can recognize international opportunities are better positioned to innovate and proactively respond to global market dynamics (Hadiyati & Fatkhurahman, 2023). Likewise, entrepreneurial orientation, which encompasses innovativeness, proactiveness, and risk-taking, enables firms to adapt quickly, pursue innovation, and implement effective strategies in the global marketplace (Asemokha, Musona, Torkkeli, & Saarenketo, 2019; Kakava, Eta, & Shepherd, 2022; Lu, Zuo, Alves, & Wang, 2023; Sentoso, Sibarani, & Muchsinati, 2024; Susilowati, Fakhri, Barinta, Abanan, & Aini, 2025).

These attributes are essential for MSMEs striving to enhance their competitiveness and innovation performance. In addition, entrepreneurial advantage represents a sustainable competitive edge that allows entrepreneurs to operate successfully at the international level. It includes technological adaptation, market responsiveness, operational efficiency, and strong brand management (Kesumahati & Novianti, 2021; Nuryanti, Hanifah, & Cahyadi, 2023; Puspita, Christiananta, & Ellitan, 2020; Srimulyani, Hermanto, Rustiyaningsih, & Waloyo, 2023). These aspects collectively help entrepreneurs achieve sustainable growth and improve their firm's international performance.

This study is novel in that it integrates four key variables–entrepreneurial education, opportunity, orientation, and advantage–into a single analytical model to explain international entrepreneurial performance. While prior studies often examined these variables individually Zhou et al. (2024), few have explored their combined effect within a comprehensive framework. Therefore, this research aims to fill this research gap by examining how the interaction among these variables simultaneously influences international entrepreneurial performance.

The results of this study are anticipated to contribute to both theoretical and practical domains. Theoretically, it broadens the understanding of international entrepreneurship by combining various aspects of entrepreneurial capability. Practically, it provides valuable guidance for entrepreneurs, policymakers, and educational institutions in developing specific programs, regulations, and incentives aimed at enhancing SME competitiveness in the global marketplace.

2. Literature Review and Hypothesis Development

2.1 Entrepreneurial Education

Entrepreneurial learning refers to the process of developing the skills, awareness, and abilities required to manage a business successfully. According to Mahmood et al. (2020), entrepreneurial education has

a strong impact on firm performance, especially when supported by effective curricula and positive learning environments. Raharjo, Ausat, Risdwiyanto, Gadzali, and Azzaakiyyah (2023) further argue that entrepreneurship education expands entrepreneurial perspectives and strengthens self-efficacy among learners, thus enhancing their readiness to start a business. In addition, Shah, Amjed, and Jaboob (2020) highlight that entrepreneurial education enhances entrepreneurial intentions by strengthening positive attitudes and reducing the influence of subjective norms.

He, Zheng, Sharma, and Leung (2024) explain that education helps individuals identify relevant business opportunities and develop managerial skills, whereas Zhou et al. (2024) emphasize that it equips international entrepreneurs to utilize limited resources effectively in the global market. From a theoretical perspective, the Resource-Based View (RBV) supports the role of education as a strategic resource that helps entrepreneurs acquire knowledge and competencies that are Valuable, Rare, Inimitable, and Non-Substitutable (VRIN attributes), which ultimately improves firm performance.

2.2 Entrepreneurial Opportunity

An entrepreneurial opportunity is defined as a condition or situation that can be leveraged to create economic value. Zhou et al. (2024) assert that entrepreneurial opportunities have a substantial impact on firm performance, particularly in dynamic international markets. According to Andersson and Evers (2015), dynamic managerial capabilities are required to jointly face emerging business frontiers in global opportunities.

Putri, Syam, Rahmatullah, Said, and Hasan (2023) argue that the capacity to perceive opportunities and the propensity to be proactive are significant indicators of business success. Hatmawan (2020) states that identifying opportunities is crucial in striving to develop innovation, while Erlina, Ella, Farah, and Hasyim (2023) note that opportunistic entrepreneurs can be encouraged to start new ventures. Furthermore, Hadiyati and Fatkhurahman (2023) reveal that most entrepreneurs are motivated to start businesses based on their ability to perceive opportunities.

2.3 Entrepreneurial orientation

Entrepreneurial orientation reflects the attitude and behavior of organizations toward uncertainty through innovation, proactiveness, and risk-taking. Asemokha et al. (2019) state that entrepreneurial orientation contributes to business model transformation, which enables firms to capture new opportunities and promote greater competitive power internationally. Saleh and Athari (2023) also mention that entrepreneurial orientation enhances responsiveness to market demands and strengthens leadership, which helps new ventures become more receptive to initiating new business activities. As revealed by Nguyen, Huynh, Lam, Le, and Nguyen (2021), entrepreneurial orientation enhances risk-taking willingness and innovation determination, whereas Putniņš and Sauka (2020) confirm that risk-taking and innovation directly lead to firm performance. Donbesuur, Boso, and Hultman (2020) also confirm that entrepreneurial orientation motivates firms to adapt dynamically, entrepreneurial orientation supports corporate initiatives to improve effectiveness in the global competitive landscape.

2.4 Entrepreneurial Advantage

Entrepreneurial advantage refers to the competitive benefits created by firms through innovation, rapid adaptation, and product differentiation. Puspita et al. (2020) highlight innovation as a key component of entrepreneurial advantage that contributes to competitiveness. Lestari, Leon, Widyastuti, Brabo, and Putra (2020) note that innovation increases business performance by fostering the development of new and improved products. According to Puspaningrum (2020), competitive advantage mediates the relationship between market orientation and firm performance, because it allows firms to produce unique, high-quality products. Similarly, Nguyen et al. (2021) demonstrated that team creativity enhances product innovation quality, which in turn improves performance. Srimulyani et al. (2023) also verified that entrepreneurial advantage positively affects competitiveness through adaptability and innovation, enabling firms to create unique value in international markets.

Table 1. Summary of previous studies

No.	Title	Author	Variable(s) Studied	Conclusion
1	The Impact of Entrepreneur Education on Business Performance	Mahmood et al. (2020)	Entrepreneurial Education	This study finds that entrepreneurship education at the university level is essential for achieving entrepreneurial success.
2	Analyzing the Relationship between Entrepreneurship Education, Self-Efficacy, and Entrepreneurial Performance	Raharjo et al. (2023)	Entrepreneurial Education	Entrepreneurship education plays a key role in fostering strong entrepreneurial performance.
3	The moderating role of entrepreneurship education in shaping entrepreneurial intentions	Shah et al. (2020)	Entrepreneurial Education	Learning entrepreneurship positively shapes and directs entrepreneurial attitudes, fostering intentions to start a business.
4	Entrepreneurship education and established business activities: An international perspective	He et al. (2024)	Entrepreneurial Education	Entrepreneurial education supports long-term business success by improving knowledge, skills, and the ability to recognize opportunities.
5	Knowledge is power: The impact of entrepreneurship education on the international entrepreneurship performance	Zhou et al. (2024)	Entrepreneurial Education	Entrepreneurship education significantly enhances international entrepreneurship performance by providing entrepreneurs with vital knowledge, competencies, and a global outlook.
			Entrepreneurial Opportunity	Identifying entrepreneurial opportunities greatly improves international entrepreneurship performance by allowing entrepreneurs to detect, assess, and utilize global market opportunities.
6	International opportunity recognition in international new ventures a dynamic managerial capabilities perspective	Andersson and Evers (2015)	Entrepreneurial Opportunity	Entrepreneurial opportunities act as a key driver of international expansion of new ventures.
7	The Influence of Entrepreneurial Ability, Business Opportunities, and Education Level on the Income of Micro, Small, and Medium Enterprises (MSMEs) in the Culinary Sector in Somba Opu District, Gowa Regency	Putri et al. (2023)	Entrepreneurial Opportunity	Entrepreneurial opportunities positively and significantly increase the income of MSMEs.

8	Analysis of factors affecting the performance of SMEs in the international market	Hatmawan (2020)	Entrepreneurial Opportunity	Entrepreneurial opportunities significantly and positively impact SME performance and profitability.
9	The Influence and Opportunities of Business on Students' Readiness to Become Entrepreneurs	Erlina et al. (2023)	Entrepreneurial Opportunity	Entrepreneurial opportunities positively influence students' potential to pursue entrepreneurship.
10	The Impact of the Ability to See Business Opportunities on Students' Interest in Entrepreneurship: The Role of Social Media Literacy	Hadiyati and Fatkhurahman (2023)	Entrepreneurial Opportunity	Entrepreneurial opportunities significantly and positively affect students' interest in becoming entrepreneurs.
11	Business model innovation and entrepreneurial orientation relationships in SMEs: Implications for international performance	Asemokha et al. (2019)	Entrepreneurial Orientation	Entrepreneurial orientation enhances business performance by encouraging innovation, proactive behavior, and a willingness to take risks.
12	Examining the Impact of Entrepreneurial Orientation on New Venture Performance in the Emerging Economy of Lebanon: A Moderated Mediation Analysis	Saleh and Athari (2023)	Entrepreneurial Orientation	Companies with a strong entrepreneurial orientation are more capable of identifying and taking advantage of opportunities, which leads to improved performance.
13	The impact of entrepreneurial leadership on SMEs' performance: the mediating effects of organizational factors	Nguyen et al. (2021)	Entrepreneurial Orientation	EO exerts a positive influence on the business performance of IT-based SMEs.
14	Why does entrepreneurial orientation affect company performance?	Putniņš and Sauka (2020)	Entrepreneurial Orientation	EO significantly and positively affects firm performance, both directly and indirectly, through dynamic capabilities as a mediating factor.
15	The effect of entrepreneurial orientation on new venture performance: Contingency roles of entrepreneurial actions	Donbesuur et al. (2020)	Entrepreneurial Orientation	Entrepreneurial orientation has a substantial positive impact on the performance of new business ventures.
16	Unlocking the relationship between entrepreneurial orientation and	Lu et al. (2023)	Entrepreneurial Orientation	Entrepreneurial orientation consistently and positively influences firm international performance, particularly in highly

	international performance: A systematic review			dynamic and competitive global environments.
17	The effect of strategic orientation, supply chain capability, innovation capability on competitive advantage and performance of furniture retails	Puspita et al. (2020)	Entrepreneurial Advantage	The study concludes that entrepreneurial advantage plays a vital role in improving business outcomes by developing sustainable competitive advantage.
18	Antecedents and consequences of innovation and business strategy on performance and competitive advantage of SMEs	Lestari et al. (2020)	Entrepreneurial Advantage	Entrepreneurial advantage is fundamental to strengthening both competitiveness and business performance.
19	Market Orientation, Competitive Advantage, and Marketing Performance of Small and Medium-sized Enterprises	Puspaningrum (2020)	Entrepreneurial Advantage	Entrepreneurial advantage has a strong positive effect on SME competitiveness and overall performance.
20	The impact of entrepreneurial leadership on SMEs' performance: the mediating effects of organizational factors	Nguyen et al. (2021)	Entrepreneurial Advantage	The findings of this study demonstrate that entrepreneurial excellence has the greatest impact on improving SME performance.
21	Internal factors of entrepreneurial and business performance of Small And Medium Enterprises (SMEs) in East Java, Indonesia	Srimulyani et al. (2023)	Entrepreneurial Advantage	The research results show that entrepreneurial advantage significantly contributes to SME performance improvement by optimizing internal factors, such as self-efficacy, motivation, leadership, and innovation.

2.5 Hypothesis Development

2.5.1 The Influence of Entrepreneurial Education on Firm Performance

Entrepreneurial education is regarded as a strategic resource that enhances entrepreneurs' human capital, consistent with the Resource-Based View (RBV), which emphasizes that Valuable, Rare, Inimitable, and Non-Substitutable (VRIN) resources are key drivers of competitive advantage. Through entrepreneurial learning, individuals develop managerial, innovative, and decision-making capabilities that enable them to strengthen their firm's competitiveness.

Empirical Evidence (EE) also supports this theoretical foundation, as prior studies have shown that well-coordinated curricula, experiential learning, and exposure to real business environments help entrepreneurs generate creative ideas and manage risks effectively. EE increases self-efficacy, strengthens decision-making, and fosters entrepreneurial intentions that contribute to firm performance (Mahmood et al., 2020; Raharjo et al., 2023; Zhou et al., 2024).

H_1: Entrepreneurial education has a significantly positive influence on firm performance.

2.5.2 The Influence of Entrepreneurial Opportunity on Firm Performance

Entrepreneurial opportunity is a fundamental concept in opportunity-based entrepreneurship theory, which highlights the process of identifying and exploiting opportunities as central to entrepreneurial success. Entrepreneurs who can recognize environmental changes, market gaps, and evolving consumer needs are more likely to create superior economic value and maintain competitiveness in domestic and international markets. Empirical findings demonstrate that opportunity recognition and proactive strategies strengthen firms' flexibility and innovation capacity. The ability to seize emerging business opportunities significantly contributes to the sustainability and growth of entrepreneurial ventures (Andersson & Evers, 2015; Putri et al., 2023; Zhou et al., 2024).

H_2: Entrepreneurial opportunities have a significant positive influence on firm performance.

2.5.3 The Influence of Entrepreneurial Orientation on Firm Performance

The EO theory of entrepreneurial orientation suggests that innovation, proactiveness, and risk-taking are key factors influencing an organization's performance and competitiveness. Companies that exhibit a high level of entrepreneurial orientation are more capable of adapting to uncertainty, responding effectively to market dynamics, and attaining superior results through innovative strategic actions. In global markets, entrepreneurial orientation allows firms to exploit opportunities across borders while maintaining the flexibility to face environmental turbulence. Empirical evidence supports the idea that entrepreneurial orientation significantly contributes to firm growth and sustainable competitiveness (Asemokha et al., 2019; Lu et al., 2023; Nguyen et al., 2021).

H_3: Entrepreneurial orientation has a significant positive influence on firm performance.

2.5.4 The Influence of Entrepreneurial Advantage on Firm Performance

In line with the RBV framework, entrepreneurial advantage represents a firm's ability to develop internal resources that enhance innovation, adaptability, and differentiation, all of which lead to sustainable competitive advantage. Firms that create unique products, respond swiftly to external changes, and maintain innovative approaches are more likely to sustain performance in competitive and globalized markets. Previous research indicates that entrepreneurial advantage, through innovation and product quality improvement, plays a key role in achieving superior business performance and long-term growth (Lestari et al., 2020; Puspita et al., 2020; Srimulyani et al., 2023).

H_4: Entrepreneurial advantage significantly positively influences firm performance.

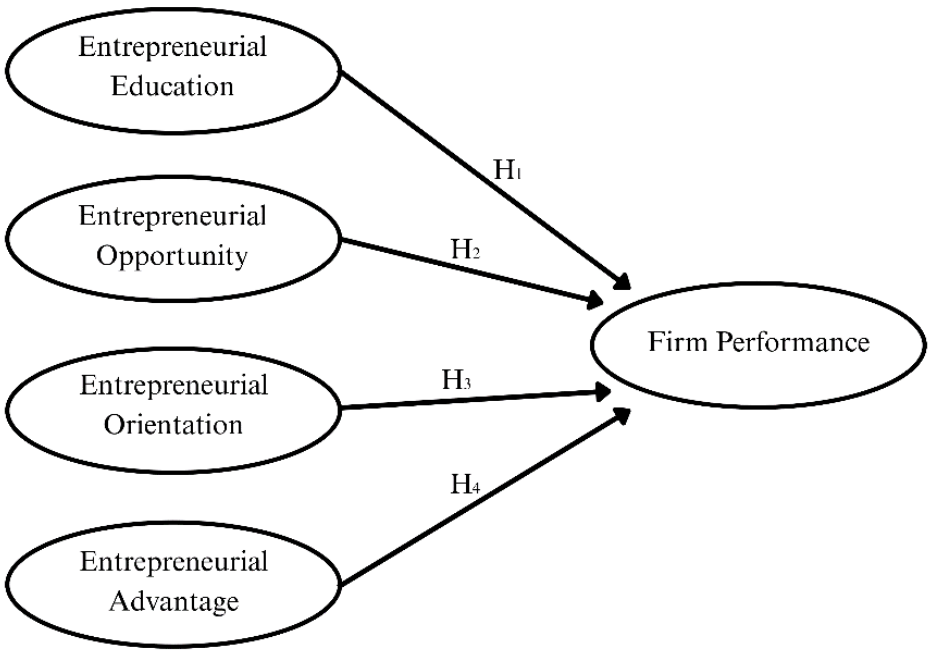

Figure 1. Research model

Figure 1 shows conceptual model that examines the relationship between four key entrepreneurial factors and their influence on firm performance. The model is designed to investigate the impact of Entrepreneurial Education, Entrepreneurial Opportunity, Entrepreneurial Orientation, and Entrepreneurial Advantage on the performance of a firm, as represented by the central "Firm Performance" variable.

3. Research Method

This research design is quantitative in nature because the survey method was applied, and the primary tool consisted of structured questionnaires (Siroj, Afgani, Fatimah, Septaria, & Salsabila, 2024). The selection of this method aimed to examine the correlations among variables that influence firm performance, with data analyzed statistically to form an objective representation. The study population comprised owners of internationally oriented businesses, particularly those engaged in exports, imports, and cross-border trading. Purposive sampling was employed to ensure that respondents possessed relevant characteristics, such as prior experience in foreign markets (Memon, Thurasamy, Ting, & Cheah, 2025).

The questionnaire was constructed using instruments that had been previously validated and proven reliable, adapted from established scholarly works. The measurement of Entrepreneurial Education was derived from Zhou et al. (2024), Entrepreneurial Orientation from Asemokha et al. (2019), Entrepreneurial Opportunity from Zhou et al. (2024), Entrepreneurial Advantage from Nguyen et al. (2021), and Firm Performance from (Zhou et al., 2024). All variables were evaluated using a five-point Likert scale (1 = strongly disagree to 5 = strongly agree), enabling respondents to express their level of agreement. This measurement method produces quantitative data that support objective statistical analysis of the relationships among variables.

Data were gathered using online questionnaires distributed through Google Forms to the selected sample. A purposive sampling method was applied to ensure that only participants meeting the research criteria were included. Ethical standards were upheld by maintaining respondent confidentiality and offering clear guidance to ensure accurate responses. The data were analyzed using the partial least squares–structural equation modeling technique, which is suitable for complex models involving multiple latent variables and small-to-medium sample sizes. This analytical approach is also resilient to deviations from the assumptions of a normal distribution. In total, 27 questionnaire items were employed to represent the study's constructs.

Before conducting the hypothesis testing, the validity and reliability of the measurement model were assessed. Convergent validity was evaluated using factor loadings and Average Variance Extracted (AVE), whereas discriminant validity was examined through the Fornell–Larcker criterion and cross-loading analysis. Internal consistency reliability was verified using Cronbach's alpha and Composite Reliability (CR), with all values exceeding the recommended threshold of 0.70 (Hair, Risher, Sarstedt, & Ringle, 2019). These assessments confirmed that the constructs employed in the model were valid and reliable prior to proceeding with the structural model analysis.

4. Results and discussion

4.1 Demographic Analysis of Respondents

This study included 101 respondents, all of whom were entrepreneurs with prior experience in international collaborations. As presented in Table 2, most respondents were men (78.2%). The predominant age group ranged from 40 to 49 years (54.5%). The highest educational attainment among participants was a bachelor's degree, representing 56.4%. Most respondents operated in the property sector (30.7%). Additionally, 49.5% of respondents reported participating in international collaborations more than five times per year.

4.2 Common Method Bias

To examine the possibility of Common Method Variance (CMV) or Common Method Bias (CMB), the Variance Inflation Factor (VIF) test was conducted using SmartPLS 3. The VIF values for all variables

were below the threshold of 5.0: E, entrepreneurial advantage (2.345), entrepreneurial education (2.190), entrepreneurial opportunity (2.480), and entrepreneurial orientation (2.751). These results indicate that there is no issue of multicollinearity and no significant common method bias in the data (Hair et al., 2019). Therefore, the dataset is considered suitable for further structural model analysis.

4.3 Outer Model

The outer model was tested to ensure the validity and reliability of the constructs. As shown in Table 3, all constructs achieved convergent validity, with AVE values exceeding 0.50 (Hair et al., 2019). Furthermore, composite reliability and Cronbach's alpha values for all variables were above 0.70 and 0.60, respectively, confirming internal consistency. Indicators with loading values below 0.70 were removed to maintain measurement accuracy. Discriminant validity was also confirmed through the cross-loading analysis in Table 4, indicating that each indicator loaded higher on its corresponding construct than on other constructs, confirming satisfactory discriminant validity.

4.4 Path analysis

Path analysis was conducted to examine the effect of each independent variable on firm performance. The results in Table 5 present the path coefficients, *t*-statistics, and *p*-values. A relationship is considered significant when $t > 1.96$ and $p < 0.05$ (Hair et al., 2019). The analysis shows that entrepreneurial opportunity ($t = 2.828$, $p = 0.005$) and entrepreneurial orientation ($t = 2.392$, $p = 0.017$) significantly and positively influence firm performance. This indicates that recognizing market opportunities and adopting proactive, innovative, and risk-taking orientations enhance competitiveness and business growth, consistent with (Andersson & Evers, 2015; Lu et al., 2023; Zhou et al., 2024). Conversely, entrepreneurial education and entrepreneurial advantage did not show significant effects ($p > 0.05$). The weak impact of education may stem from limited practical implementation or curriculum relevance Mahmood et al. (2020) and Raharjo et al. (2023), while the insignificance of entrepreneurial advantage suggests that competitive resources alone are insufficient without adaptive and opportunity-driven strategies (Nguyen et al., 2021; Puspaningrum, 2020). Overall, the findings emphasize that behavioral and strategic capabilities, particularly opportunity recognition and entrepreneurial orientation, play a more decisive role in driving firm performance than formal education or static advantage.

4.5 Model Fit Evaluation

Model fit testing was conducted to evaluate how accurately the model explains the relationships among the variables. The R-squared (R^2) value for firm performance was found to be 0.438, indicating that 43.8% of the variance in firm performance is accounted for by entrepreneurial education, opportunity orientation, and advantage. This value falls within the acceptable range for social science research (Ozili, 2023). Additionally, the Goodness-of-Fit (GoF) index was 0.548, surpassing the 0.36 threshold proposed by Tenenhaus, Amato, and Esposito Vinzi (2004), Tenenhaus which signifies a strong model fit. Therefore, the structural model developed in this study is both statistically valid and theoretically sound.

Table 2. Respondent demographics

No	Variable	Classification	Frequency (Person)	Percent (%)
1	Gender	Man	79	78.2
		Woman	22	21.8
Total			101	100.0
2	Age	20 - 29 Years Old	3	3.0
		30 - 39 Years Old	18	17.8
		40 - 49 Years Old	55	54.3
		> 49 Years Old	25	24.8
Total			101	100.0

3	Last education	Master	15	14.9
		Bachelor	57	56.4
		Senior High School	29	28.7
Total			101	100.0
4	Economic Sector	Energy	3	3.0
		Raw Materials	1	1.0
		Non-Primary Consumer Goods	3	3.0
		Primary Consumer Goods	16	15.8
		Healthcare	2	2.0
		Finance	12	11.9
		Manufacturing	15	14.9
		Real Estate	31	30.7
		Technology	11	10.9
		Infrastructure	2	2.0
		Transportation	5	5.0
Total			101	100.0
5	Frequency of Collaboration	1 – 2 times a year	33	32.7
		3 – 5 times a year	18	17.8
		More than 5 times a year	50	49.5
Total			101	100.0

Table 3. Outer loading, AVE, cronbachs's alpha and composite reliability

Variabel	Item	Outer Loadings	Cronbach's Alpha	Composite Reliability	Average Variance Extracted (AVE)
Entrepreneurial Advantage	ADV1	0.827	0.661	0.853	0.744
	ADV3	0.897			
Entrepreneurial Education	EDU3	0.81	0.770	0.865	0.682
	EDU4	0.790			
	EDU5	0.883			
Firm Performance	FP1	0.822	0.713	0.838	0.633
	FP2	0.818			
	FP3	0.746			
Entrepreneurial Opportunity	OP3	0.875	0.705	0.872	0.772
	OP4	0.883			
Entrepreneurial Orientation	OR1	0.740	0.660	0.814	0.594
	OR4	0.733			
	OR5	0.834			

Table 4. Cross loading

	Entrepreneurial Advantage	Entrepreneurial Education	Firm Performance	Entrepreneurial Opportunity	Entrepreneurial Orientation
ADV1	0.827				
ADV3	0.897				
EDU3		0.801			
EDU4		0.790			
EDU5		0.883			
FP1			0.822		
FP2			0.818		
FP3			0.746		
OP3				0.875	
OP4				0.883	
OR1					0.740
OR4					0.733
OR5					0.834

Table 5. Result of Path Coefficent and Indirect Effect

Hypotesis	Original Sample	Sample Mean	Standard Deviation	T Statistics	P Values	Result
ADV → FP	0.166	0.171	0.099	1.681	0.093	Not Significant
EDU → FP	0.108	0.114	0.112	0.957	0.339	Not Significant
OP → FP	0.248	0.244	0.088	2.828	0.005	Significant
OR → FP	0.268	0.274	0.112	2.392	0.017	Significant

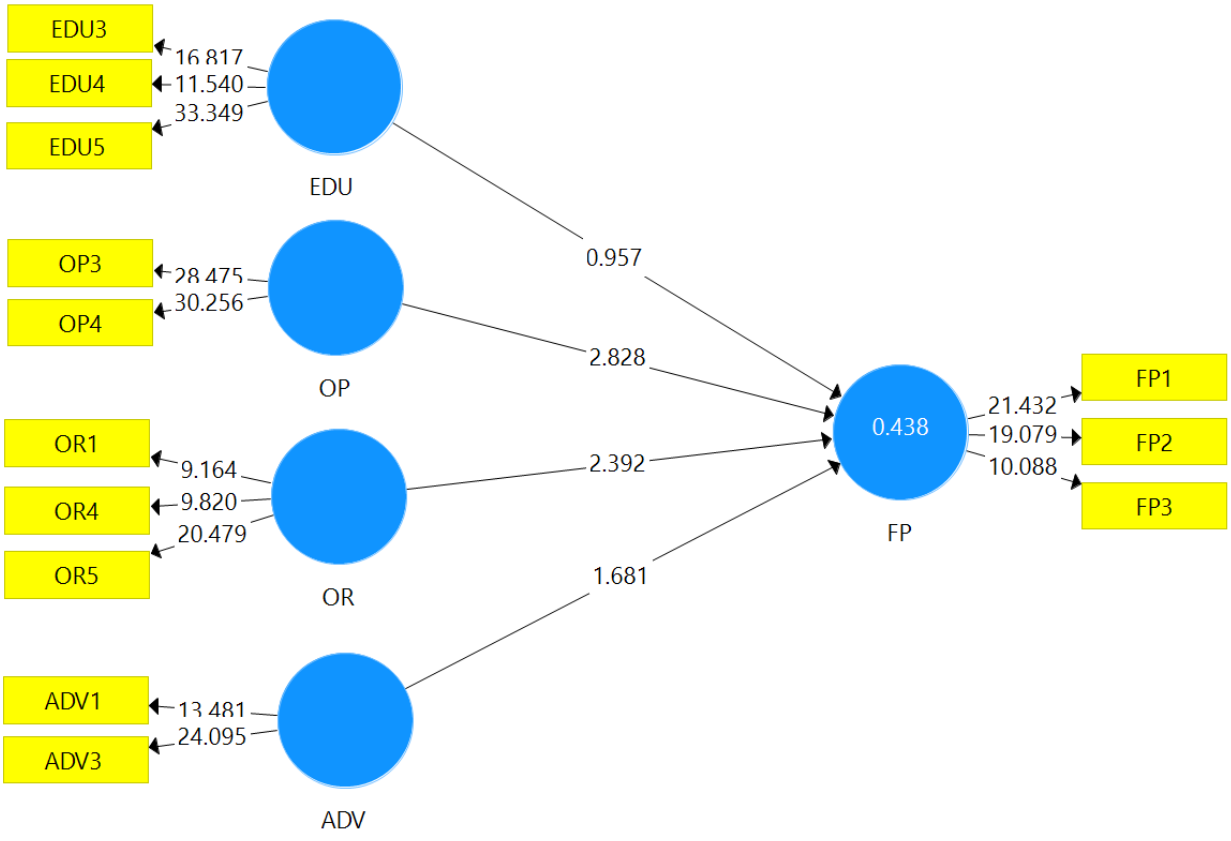

Figure 2. Diagram of the PLS output

Figure 2 shows above presents a Structural Equation Modeling (SEM) diagram that illustrates the relationships between several variables and their impact on Firm Performance (FP).

5. Conclusions

5.1 Conclusion

This study examines the influence of entrepreneurial education, entrepreneurial opportunity, entrepreneurial orientation, and entrepreneurial advantage on firm performance within the context of international entrepreneurship. The results indicate that entrepreneurial opportunity and entrepreneurial orientation significantly and positively affect firm performance, while entrepreneurial education and entrepreneurial advantage do not demonstrate a direct impact. These findings reinforce the relevance of the Resource-Based View (RBV) and opportunity-based theory, highlighting that the ability to recognize opportunities and adopt proactive, innovative, and risk-taking behaviors plays a crucial role in achieving superior performance in international markets. Practically, the study emphasizes the importance of fostering entrepreneurial orientation and opportunity recognition through supportive ecosystems, international collaboration, and knowledge sharing to enhance firms' competitiveness in the global environment.

5.2 Research Limitations

This study has several limitations that should be acknowledged. First, the research focuses on a specific context, which may limit the generalizability of the findings to other countries or economic environments. Second, the study employs a cross-sectional approach, which may not fully capture the dynamic nature of entrepreneurial behavior and firm performance over time. Third, the variables examined in this study are limited to selected entrepreneurial factors, and other relevant elements, such as innovation capability, institutional support, or digital transformation, were not included in the analysis.

5.3 Suggestions and Directions for Future Research

Future research is encouraged to expand this study by incorporating cross-country comparisons and longitudinal research designs to better understand how entrepreneurial dynamics influence firm performance across different contexts. Scholars are also advised to integrate additional variables, such as digital transformation, innovation ecosystems, and institutional support, to enrich the analysis of international entrepreneurial performance. From a practical perspective, researchers and policymakers should explore strategies that strengthen entrepreneurial opportunity recognition and entrepreneurial orientation through innovation-driven training, international networking, and collaboration between academia, industry, and government to build a more sustainable global entrepreneurial ecosystem.

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Author Contributions

EK conceptualized the research, designed the study, collected data, drafted the manuscript, and provided final approval for publication. VA contributed to the study design, data collection, manuscript drafting, and revision. AF was involved in the study design, data analysis, manuscript drafting, and revision, and provided final approval for publication. All authors have read and approved the final version of the manuscript.

References

Andersson, S., & Evers, N. (2015). International opportunity recognition in international new ventures—a dynamic managerial capabilities perspective. *Journal of International Entrepreneurship, 13*(3), 260-276. doi:https://doi.org/10.1007/s10843-015-0149-5

Asemokha, A., Musona, J., Torkkeli, L., & Saarenketo, S. (2019). Business model innovation and entrepreneurial orientation relationships in SMEs: Implications for international performance. *Journal of International Entrepreneurship, 17*(3), 425-453. doi:https://doi.org/10.1007/s10843-019-00254-3

Donbesuur, F., Boso, N., & Hultman, M. (2020). The effect of entrepreneurial orientation on new venture performance: Contingency roles of entrepreneurial actions. *Journal of Business Research, 118*, 150-161. doi:https://doi.org/10.1016/j.jbusres.2020.06.042

Erlina, A. M., Ella, F. B. S., Farah, D., & Hasyim, H. (2023). Pengaruh Dan Peluang Usaha Terhadap Kesiapan Mahasiswa Untuk Menjadi Wirausaha. *MONETER: Jurnal Ekonomi dan Keuangan, 2*(1), 176-186. doi:https://doi.org/10.61132/moneter.v2i1.148

Hadiyati, H., & Fatkhurahman, F. (2023). Dampak Kemampuan Melihat Peluang Usaha Terhadap Minat Berwirausaha Mahasiswa: Peran Literasi Media Sosial. *Diklat Review: Jurnal Manajemen Pendidikan dan Pelatihan, 7*(3), 653-664. doi:https://doi.org/10.35446/diklatreview.v7i3.1616

Hair, J. F., Risher, J. J., Sarstedt, M., & Ringle, C. M. (2019). When to use and how to report the results of PLS-SEM. *European business review, 31*(1), 2-24. doi:https://doi.org/10.1108/EBR-11-2018-0203

Hatmawan, A. A. (2020). Analisis faktor yang mempengaruhi kinerja UKM di pasar internasional. *Jurnal Ekonomi Modernisasi, 16*(1), 1-18. doi:https://doi.org/10.21067/jem.v16i1.4694

He, L., Zheng, L. J., Sharma, P., & Leung, T. (2024). Entrepreneurship education and established business activities: An international perspective. *The International Journal of Management Education, 22*(1), 100922. doi:https://doi.org/10.1016/j.ijme.2023.100922

Kakava, E., Eta, M., & Shepherd, M. (2022). Enhancing entrepreneurial intention in secondary school. *Journal of Sustainable Tourism and Entrepreneurship, 4*(3), 171-188. doi:https://doi.org/10.35912/joste.v4i3.2034

Kesumahati, E., & Novianti, S. (2021). *Analisis pengaruh brand identity, brand image, brand interaction, dan brand personality terhadap customer satisfaction dan pengaruhnya terhadap repurchase intention pada kosmetik merek lokal di kota batam.* Paper presented at the Conference on Business, Social Sciences and Technology (CoNeScINTech).

Lestari, S. D., Leon, F. M., Widyastuti, S., Brabo, N. A., & Putra, A. H. P. K. (2020). Antecedents and consequences of innovation and business strategy on performance and competitive advantage of SMEs. *The Journal of Asian Finance, Economics and Business, 7*(6), 365-378. doi:https://doi.org/10.13106/jafeb.2020.vol7.no6.365

Lu, Y., Zuo, P., Alves, J. C., & Wang, J. (2023). Unlocking the relationship between entrepreneurial orientation and international performance: a systematic review. *Journal of International Entrepreneurship, 21*(4), 464-504. doi:https://doi.org/10.1007/s10843-023-00340-7

Mahmood, R., Mohd Zahari, A. S., Ibrahim, N., Nik Jaafar, N. F. H., & Yaacob, N. M. (2020). The impact of entrepreneur education on business performance. *Asian Journal of University Education (AJUE), 16*(4), 171-180. doi:https://doi.org/10.24191/ajue.v16i4.11947

Memon, M. A., Thurasamy, R., Ting, H., & Cheah, J.-H. (2025). Purposive Sampling: A Review And Guidelines For Quantitative Research. *Journal of Applied Structural Equation Modeling, 9*(1), 1-23. doi:https://doi.org/10.47263/jasem.9(1)01

Nguyen, P. V., Huynh, H. T. N., Lam, L. N. H., Le, T. B., & Nguyen, N. H. X. (2021). The impact of entrepreneurial leadership on SMEs' performance: the mediating effects of organizational factors. *Heliyon, 7*(6), e07326. doi:https://doi.org/10.1016/j.heliyon.2021.e07326

Nuryanti, B. L., Hanifah, A. P., & Cahyadi, A. I. (2023). How business digitalization can effect the entrepreneurial growth. *International Journal of Financial, Accounting, and Management, 4*(4), 449-462. doi:https://doi.org/10.35912/ijfam.v4i4.1256

Ozili, P. K. (2023). The acceptable R-square in empirical modelling for social science research *Social research methodology and publishing results: A guide to non-native English speakers* (pp. 134-143): IGI Global Scientific Publishing.

Puspaningrum, A. (2020). Market orientation, competitive advantage and marketing performance of small medium enterprises (SMEs). *Journal of Economics, Business, and Accountancy Ventura, 23*(1), 19-27. doi:https://doi.org/10.14414/jebav.v23i1.1847

Puspita, L. E., Christiananta, B., & Ellitan, L. (2020). The effect of strategic orientation, supply chain capability, innovation capability on competitive advantage and performance of furniture retails. *International Journal of Scientific & Technology Research, 9*(03), 4521-4529.

Putniņš, T. J., & Sauka, A. (2020). Why does entrepreneurial orientation affect company performance? *Strategic Entrepreneurship Journal, 14*(4), 711-735. doi:https://doi.org/10.1002/sej.1325

Putri, A. P., Syam, A., Rahmatullah, R., Said, M. I., & Hasan, M. (2023). Pengaruh Kemampuan Wirausaha, Peluang Usaha Dan Tingkat Pendidikan Terhadap Pendapatan Usaha Mikro, Kecil Dan Menengah (Umkm) Sektor Kuliner Di Kecamatan Somba Opu Kabupaten Gowa. *Jurnal Ekonomi dan Bisnis, 25*(1). doi:http://dx.doi.org/10.30811/ekonis.v25i1.3802

Raharjo, I. B., Ausat, A. M. A., Risdwiyanto, A., Gadzali, S. S., & Azzaakiyyah, H. K. (2023). Analysing the relationship between entrepreneurship education, self-efficacy, and entrepreneurial performance. *Journal on Education, 5*(4), 11566-11574. doi:https://doi.org/10.31004/joe.v5i4.2106

Saleh, A. M., & Athari, S. A. (2023). Examining the impact of entrepreneurial orientation on new venture performance in the emerging economy of Lebanon: A moderated mediation analysis. *Sustainability, 15*(15), 11982. doi:https://doi.org/10.3390/su151511982

Sentoso, A., Sibarani, T. P., & Muchsinati, E. S. (2024). Business Performance of MSMEs: An analysis of the effect of entrepreneurial orientation, market orientation, and technology orientation. *Jurnal Dinamika Manajemen, 15*(2), 318-333. doi:https://doi.org/10.15294/jdm.v15i2.7559

Shah, I. A., Amjed, S., & Jaboob, S. (2020). The moderating role of entrepreneurship education in shaping entrepreneurial intentions. *Journal of Economic Structures, 9*(1), 19. doi:https://doi.org/10.1186/s40008-020-00195-4

Simanjorang, F., Angelica, G., Putri, N. D., Dewi, L. A., Amanda, A., & Haykal, M. M. (2023). Dampak Globalisasi Terhadap Bisnis Internasional. *Jurnal Manajemen Riset Inovasi, 1*(3), 187-209. doi:https://doi.org/10.55606/mri.v1i3.1321

Siroj, R. A., Afgani, W., Fatimah, F., Septaria, D., & Salsabila, G. Z. (2024). Metode Penelitian Kuantitatif Pendekatan Ilmiah Untuk Analisis Data. *urnal Review Pendidikan dan Pengajaran, 7*(3), 11279–11289. doi:https://doi.org/10.31004/jrpp.v7i3.32467

Srimulyani, V. A., Hermanto, Y. B., Rustiyaningsih, S., & Waloyo, L. A. S. (2023). Internal factors of entrepreneurial and business performance of Small and Medium Enterprises (SMEs) in East Java, Indonesia. *Heliyon, 9*(11), e21637. doi:https://doi.org/10.1016/j.heliyon.2023.e21637

Sudhartio, L., Peranginangin, P., Hamsal, M., & Ganiarsa, K. (2023). Mediating Role of Organizational Change Readiness on Knowledge Management and Entrepreneurial Orientation for Innovation. *Journal The Winners, 24*(2), 107-115. doi:https://doi.org/10.21512/tw.v24i2.10864

Suprapto, Y., Yosuky, D., Rachmi, T. S., & Santono, F. (2023). Dampak globalisasi terhadap bisnis internasional. *Jurnal Pendidikan Tambusai, 7*(1), 4122-4128. doi:https://doi.org/10.31004/jptam.v10i1.36738

Susilowati, C., Fakhri, E., Barinta, D., Abanan, M., & Aini, M. (2025). Peran Supply Chain Innovation Memediasi Entrepreneur Orientation Dan Innovation Performance Sektor Perikanan. *Jurnal Akuntansi, Keuangan, dan Manajemen, 6*(2), 473-483. doi:https://doi.org/10.35912/jakman.v6i2.3860

Sutejo, B., Rizki, I. H., Handayani, T. M., & Rinaldi, M. (2024). E-Commerce dan Pengetahuan Kewirausahaan dalam Meningkatkan Minat Berbisnis Masyarakat Ligkungan XX Tanjung Mulia. *Studi Ilmu Manajemen dan Organisasi, 5*(2), 317-327. doi:https://doi.org/10.35912/simo.v5i2.3584

Tambunan, T. T. (2024). Micro And Small Enterprises'export Competencies And Cooperation In Indonesia. *Journal of Developing Economies (JDE), 9*(1), 84-106. doi:https://doi.org/10.20473/jde.v9i1.53667

Tenenhaus, M., Amato, S., & Esposito Vinzi, V. (2004). *A global goodness-of-fit index for PLS structural equation modelling.* Paper presented at the Proceedings of the XLII SIS scientific meeting.

Zhou, X., Ma, C., Su, X., Zhang, L., & Liu, W. (2024). Knowledge is power: The impact of entrepreneurship education on the international entrepreneurship performance. *The International Journal of Management Education, 22*(3), 101028. doi:https://doi.org/10.1016/j.ijme.2024.101028