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The Effect of Entrepreneurial Orientation and Entrepreneurial Competence on the Competitive Advantage of Carpentry MSMEs in Timor-Leste: The Mediating Role of Innovation and the Moderating Role of Government Support

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Abstract. This study aims to examine the factors influencing competitive advantage among Micro, Small, and Medium Enterprises (MSMEs) in the carpentry sector (furniture production) in Timor-Leste. Specifically, this research investigates the effect of entrepreneurial orientation and entrepreneurial competence on competitive advantage, with innovation as a mediating variable and government support as a moderating variable. The study is grounded in the Resource-Based View (RBV) and Dynamic Capabilities Theory, in which innovation is conceptualized as a dynamic capability that transforms organizational resources into sustainable competitive advantage. A quantitative approach with an explanatory research design was employed. Data were collected through a survey of 145 MSME owners operating in the carpentry sector across 12 municipalities in Timor-Leste. The data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) to test direct, mediating, and moderating relationships among latent constructs. The findings of this study are expected to contribute to the theoretical development of RBV and Dynamic Capabilities Theory in explaining competitive advantage in traditional MSMEs. Practically, this research provides insights for policymakers and business practitioners in strengthening innovation capabilities and enhancing the competitiveness of the carpentry sector in developing countries.

Keywords: Entrepreneurial Orientation, Entrepreneurial Competence, Innovation, Government Support, Competitive Advantage, MSMEs

I. Introduction

This study focuses on Micro, Small, and Medium Enterprises (MSMEs) in the carpentry sector in Timor-Leste, particularly those engaged in furniture production. The term *Carpintaria* is a local expression referring to wood-based craftsmanship businesses; however, this study narrows its scope to furniture production, as this subsector is characterized by a higher level of competition and plays a strategic role in value creation and local employment generation.

The furniture production MSME sector plays an important role in the economy of Timor-Leste as one of the main sources of livelihood based on local skills. This sector not only contributes to local economic activities but also represents a significant component of creative industries based on local resources (ADB, 2024; World Bank, 2023; UNDP, 2019). In the context of developing countries, MSME sectors such as carpentry also function as an essential mechanism for strengthening local economic structures based on domestic production systems (Paulus & Hermanto, 2022; Amoah et al., 2022).

However, in recent years, the furniture industry in Timor-Leste has experienced increasing competitive pressure. This is evidenced by the influx of imported furniture products, including those from border areas such as Atambua, Indonesia, which offer greater design variety and more competitive prices (Hajar et al., 2023). Previous studies have shown that such conditions create significant challenges for local MSMEs in maintaining their domestic market share, particularly in terms of price, design, and product quality (Anwar & Shah, 2020; Fainshmidt et al., 2019).

Preliminary observations indicate that imported furniture products tend to be offered at lower prices compared to locally produced MSME products. Price is a key determinant in consumer purchasing decisions; therefore, this condition weakens the competitiveness of carpentry MSMEs. Competitive advantage becomes a critical factor in determining the ability of MSMEs to survive and grow in increasingly competitive markets. It is defined as the firm's ability to create superior value compared to competitors through quality, price, design, service, and innovation (Barney, 1991; Porter, 1985). Therefore, strengthening competitive advantage is essential for MSME sustainability (Koliby et al., 2024; Amoah et al., 2022; Distanont, 2020).

According to data from MCI-TL (2023), there are approximately 20 carpentry MSMEs in Timor-Leste that are considered capable of competing in the market. Although the number is relatively small, these enterprises demonstrate potential for the development of a wood-based manufacturing sector, particularly furniture production, in supporting the local economy. These businesses generally possess adequate production capacity, acceptable product quality, and the ability to adapt product designs to meet consumer preferences at both local and inter-municipal levels. However, the sector remains at an early stage of development and faces various structural limitations.

The carpentry sector also encounters several challenges, including low product quality, limited design innovation, weak marketing strategies, and low competitiveness compared to imported products. These conditions indicate that most MSMEs have not yet achieved sustainable competitive advantage (Porter, 1985). A preliminary study of 10 carpentry MSMEs across three municipalities (Dili, Baucau, and Lautem) reveals that their level of competitive advantage remains low to moderate, characterized by limited product differentiation, cost efficiency, quality, market adaptability, as well as weak branding and reputation.

From a theoretical perspective, this study adopts the Resource-Based View (RBV), which emphasizes that competitive advantage originates from internal firm resources such as entrepreneurial orientation and entrepreneurial competence (Barney, 1991). In addition, the Dynamic Capabilities Theory explains that innovation capability is a dynamic capability that enables organizations to adapt to changes in the external environment (Teece et al., 1997). In this context, innovation is positioned as a mechanism for transforming internal resources into sustainable competitive advantage.

Previous studies have shown that entrepreneurial orientation has a significant effect on competitive advantage (Sadalia et al., 2020; Zeebaree & Siron, 2017; Pardi et al., 2014; Lee & Chu, 2011). Entrepreneurial orientation, which includes risk-taking, proactiveness, innovativeness, autonomy, and competitive aggressiveness, is believed to enhance value creation and product differentiation (Lumpkin & Dess, 1996). Similarly, entrepreneurial competence, which consists of knowledge, skills, and attitudes, plays an important role in strengthening managerial capabilities and strategic decision-making (Aidara et al., 2021; Ismail, 2022; Vijaya et al., 2015).

However, empirical findings from previous studies remain inconsistent. Some studies have found that entrepreneurial orientation does not always significantly influence competitive advantage, particularly in MSME contexts with limited resources (Winata et al., 2020). In the context of carpentry MSMEs, certain dimensions such as risk-taking have also been found to have no significant effect on competitive advantage (Paulus & Hermanto, 2022). This suggests that the direct relationship between internal resources and competitive advantage has not been fully explained.

This gap indicates the need for mediating and moderating mechanisms to explain the relationships among variables more comprehensively. In this study, innovation is positioned as a mediating variable that links entrepreneurial orientation and entrepreneurial competence to competitive advantage. Innovation includes product, process, and marketing innovations that enable MSMEs to adapt to market changes (Yang et al., 2025; Somwethee et al., 2023). Several studies also confirm that innovation is a key factor in enhancing MSME competitiveness (Distanont, 2020; Wongsansukcharoen & Thaweepaiboonwong, 2023).

In addition, government support is positioned as a moderating variable that strengthens the relationship between innovation and competitive advantage. Such support includes regulations, training programs, access to finance, and infrastructure development that facilitate MSME growth (Songling et al., 2018; Pulka et al., 2021). In developing countries such as Timor-Leste, the role of government is a crucial external factor in determining the success of transforming innovation into competitive advantage.

Based on the above discussion, this study aims to analyze the effect of entrepreneurial orientation and entrepreneurial competence on the competitive advantage of MSMEs in the carpentry sector in Timor-Leste, with innovation as a mediating variable and government support as a moderating variable. This study is expected to contribute theoretically to the integration of the Resource-Based View and Dynamic Capabilities Theory, as well as provide practical implications for enhancing MSME competitiveness in developing countries.

II. Literature Review

The theoretical foundation of this study is primarily based on the Resource-Based View (RBV) and Dynamic Capabilities Theory, which together provide a comprehensive explanation of how internal resources and capabilities contribute to competitive advantage.

RBV posits that firms achieve sustainable competitive advantage when they possess valuable, rare, inimitable, and non-substitutable (VRIN) resources (Barney, 1991). In the context of MSMEs, these resources are often reflected in intangible assets such as entrepreneurial orientation and entrepreneurial competence, which influence strategic decision-making and resource utilization (Wernerfelt, 1984). Dynamic Capabilities Theory extends RBV by emphasizing a firm's ability to integrate, build, and

reconfigure internal and external competencies to address rapidly changing environments (Teece et al., 1997). Within this perspective, innovation is conceptualized as a dynamic capability that enables MSMEs to transform existing resources into new products, processes, and market strategies (Bari *et al.* 2022; Teece, Peteraf, & Leih, 2016).

2.2 Synthesis and Integration of RBV and Dynamic Capabilities

Following the separate discussion of the Resource-Based View (RBV) and Dynamic Capabilities (DC) theory, this section presents their synthesis and integration as the conceptual foundation of this study. This integration aims to explain how MSMEs in the carpentry (furniture production) sector in Timor-Leste can develop sustainable competitive advantage.

RBV emphasizes that competitive advantage is derived from internal resources that are valuable, rare, inimitable, and non-substitutable (VRIN) (Barney, 1991). In this study, these internal resources are represented by entrepreneurial orientation and entrepreneurial competence. These variables reflect the capabilities of MSME actors in identifying opportunities, making strategic decisions, and effectively managing resources. However, RBV has limitations in explaining how resources are adapted and developed in dynamic environments. Therefore, Dynamic Capabilities Theory complements RBV by emphasizing the firm's ability to integrate, build, and reconfigure internal resources in response to environmental changes (Teece et al., 1997).

In this study, innovation is positioned as a dynamic capability that functions as a transformation mechanism, converting internal resources into competitive advantage. Thus, innovation serves as a mediating variable linking entrepreneurial orientation and entrepreneurial competence to competitive advantage. This indicates that internal resources do not automatically lead to competitive advantage unless they are effectively transformed through continuous innovation processes (e.g., Wongsansukcharoen & Thaweepaiboonwong, 2023; Distanont, 2020).

Furthermore, government support is introduced as a moderating variable representing external factors. This support includes policies, training programs, access to finance, and infrastructure that can strengthen or weaken the impact of innovation on competitive advantage (Songling et al., 2018; Pulka et al., 2021). In the context of MSMEs in developing countries such as Timor-Leste, government support plays a crucial role in creating an enabling environment for innovation development.

Overall, the integration of RBV and Dynamic Capabilities provides a comprehensive conceptual framework, explaining that competitive advantage is shaped through the interaction between internal resources, dynamic capabilities, and external environmental support.

2.3 Entrepreneurial Orientation and Competitive Advantage

Entrepreneurial orientation reflects a firm's strategic posture characterized by innovativeness, proactiveness, and risk-taking, autonomy, and aggressiveness (Lumpkin & Dess, 1996). Firms with strong entrepreneurial orientation are more likely to identify opportunities, respond to market changes, and develop differentiated products. Empirical evidence indicates that entrepreneurial orientation positively influences competitive advantage in MSMEs (Yaskun et al. 2023; Yang and Aumeboonsuke, 2022; Sadalia et al., 2020; Zeebaree and Siron, 2017; Lee & Chu, 2011).

H1: Entrepreneurial orientation has a significant effect on competitive advantage.

2.4 Entrepreneurial Competence and Competitive Advantage

Entrepreneurial competence refers to the knowledge, skills, and attitudes that enable entrepreneurs to effectively manage business activities and make strategic decisions (Aidara *et al.* 2021; Kyndt and Baert 2015). Competent entrepreneurs are better able to utilize resources efficiently and respond to competitive pressures. Prior studies suggest that entrepreneurial competence significantly enhances competitive advantage (Vijaya et al., 2015; Abdelwahed and Alshaikhmubarak, 2023; Afriza et al. 2023; Fazal et al. 2022; Pulka et al. 2021; Tong et al. 2022; Van Hoang et al. 2025)

H2: Entrepreneurial competence has a significant effect on competitive advantage.

2.5 Entrepreneurial Orientation and Innovation

Entrepreneurial orientation plays a key role in fostering innovation within firms (Benazzouz, 2019; Yi et al., 2021). Organizations characterized by innovativeness, proactiveness, and risk-taking are more likely to engage in continuous product and process innovation. Empirical studies confirm that entrepreneurial orientation positively affects innovation capability (Arzubiaga and Iturralde, 2018; Azis et al. 2019; Benazzouz, 2019; Pardi et al. 2014; Parkman et al. 2012; Qasim et al. 2025)

H3: Entrepreneurial orientation has a significant effect on innovation.

2.6 Entrepreneurial Competence and Innovation

Entrepreneurial competence is an important determinant of innovation capability. Entrepreneurs with strong analytical skills, market understanding, and managerial ability are more capable of generating and implementing innovative ideas (Somwethee et al. 2023). Research indicates that entrepreneurial

competence significantly contributes to innovation performance in MSMEs (Somwethee et al., 2023). Hwang et al. 2020; Zazzerini, 2021).

H4: Entrepreneurial competence has a significant effect on innovation.

2.7 Innovation and Competitive Advantage

Innovation is a key mechanism through which firms achieve competitive advantage. It enables firms to develop new products, improve processes, and create unique value propositions. Empirical evidence shows that innovation has a strong and positive effect on competitive advantage (Distanont, 2020; Fainshmidt et al. 2019; Farida and Setiawan, 2022; Gao et al. 2020; Pardi et al. 2014).

H5: Innovation has a significant effect on competitive advantage.

2.8 Innovation as a Mediator between Entrepreneurial Orientation and Competitive Advantage

Innovation mediates the relationship between entrepreneurial orientation and competitive advantage (Abdelwahed and Alshaikhmubarak, 2023; Esubalew and Adebisi, 2024). While entrepreneurial orientation reflects a firm's strategic posture, it does not automatically lead to competitive advantage unless it is translated into innovation outcomes. Prior studies support this mediating role (Yang et al., 2025; Alaskar, 2023; Farida and Setiawan, 2022; Ferreira et al. 2021; Hajar et al. 2023)

H6: Innovation mediates the relationship between entrepreneurial orientation and competitive advantage.

2.9 Innovation as a Mediator between Entrepreneurial Competence and Competitive Advantage

Innovation also mediates the relationship between entrepreneurial competence and competitive advantage (Distanont, 2020). It acts as a transformation mechanism that converts knowledge and skills into value-creating activities. Empirical studies confirm this mediating role (Ferreira et al. 2021; Hwang et al. 2020; Ismail, 2022; Yang et al. 2025)

H7: Innovation mediates the relationship between entrepreneurial competence and competitive advantage.

2.10 Government Support as a Moderating Variable

Government support plays a moderating role in strengthening the relationship between innovation and competitive advantage. Support in the form of policies, training, financing, and infrastructure enhances the effectiveness of innovation in improving firm performance ((Songling et al., 2018). Empirical evidence suggests that government support strengthens the impact of innovation on competitive advantage, particularly in developing economies (Pulka et al., 2021; Bhati et al. 2025; Gao et al. 2020)

H8: Government support moderates the relationship between innovation and competitive advantage.

2.11 Research Model

Based on the theoretical foundation and hypotheses development, this study proposes a research model in which entrepreneurial orientation and entrepreneurial competence influence competitive advantage both directly and indirectly through innovation. In addition, government support acts as a moderating variable that strengthens the relationship between innovation and competitive advantage.

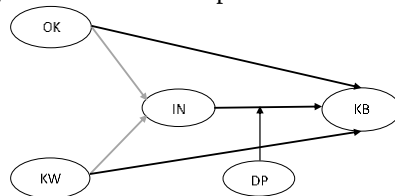


Figure 1: Conceptual Framework

III. Research Method

This study employs a quantitative approach with an explanatory research design (Creswell and Creswell, 2017). The objective of this approach is to examine the causal relationships among variables and to test the proposed hypotheses. Specifically, this study analyzes the influence of entrepreneurial orientation and entrepreneurial competence on the competitive advantage of MSMEs in the *Carpintaria* sector (furniture production) in Timor-Leste, with innovation as a mediating variable and government support as a moderating variable. The research design uses a cross-sectional method, where data are collected at a single point in time.

The population of this study consists of all MSMEs in the *carpintaria* (furniture production) sector in Timor-Leste. The sampling technique used is the census method, and because the number is relatively small, the entire population is sampled. Respondents are the owners or managers of each business. Respondents are defined as the owners or managers of active *carpintaria* MSMEs. The planned sample size is 145 respondents spread across several cities in Timor-Leste (Sekaran & Bougie, 2016). The data used in this study are primary data collected through a structured questionnaire. The questionnaire is

developed based on indicators derived from relevant previous studies for each research variable and distributed to the selected respondents. All variables are measured using a five-point Likert scale ranging from strongly disagree (1) to strongly agree (5), in order to capture respondents' perceptions of each construct.

The variables in this study include entrepreneurial orientation, entrepreneurial competence, innovation, competitive advantage, and government support. Each variable is measured using indicators adapted from relevant previous literature. These variables are analyzed to examine direct effects, indirect effects through mediation, and moderating effects within the research model.

The data analysis technique used in this study is Structural Equation Modeling (SEM) based on Partial Least Squares (PLS-SEM). This method is chosen because it is suitable for analyzing complex models involving direct, mediating, and moderating relationships, and it does not require data normality assumptions. The analysis is conducted in two main stages: the evaluation of the measurement model (outer model) and the evaluation of the structural model (inner model). The outer model evaluation is conducted to assess the validity and reliability of the measurement instruments. The tests include convergent validity based on outer loadings and Average Variance Extracted (AVE), discriminant validity to ensure construct distinctiveness, and reliability tests using Composite Reliability and Cronbach's Alpha. The inner model evaluation is conducted to examine the relationships among variables in the structural model. This includes path coefficient analysis, coefficient of determination (R^2), and significance testing using the bootstrapping method (Ghozali, 2018; Sekaran & Bougie, 2016). In addition, mediation analysis is performed to examine the indirect effects through innovation, while moderation analysis is conducted to assess the role of government support in strengthening the relationship between innovation and competitive advantage.

Hypothesis testing in this study is conducted using the bootstrapping technique in PLS-SEM. A hypothesis is considered supported if the t-statistic value exceeds 1.96 and the p-value is less than 0.05, (Hair et al. 2017; Igartua and Hayes, 2021). Therefore, this study is expected to provide a clear understanding of the relationships among the variables in the proposed research model.

IV. Results and Discussion

4.1 Data Analysis Plan

This study employs a quantitative approach using Structural Equation Modeling (SEM) based on Partial Least Squares (PLS-SEM). This method is selected because it is suitable for analyzing complex relationships among latent variables, including direct effects, mediation, and moderation simultaneously. Data analysis will be conducted in two main stages: a). Measurement Model Evaluation (Outer Model). This stage is used to assess the validity and reliability of the research instruments, including: 1. Convergent validity, assessed through outer loadings and Average Variance Extracted (AVE). 2. Discriminant validity, to ensure distinctiveness among constructs. 3. Reliability testing, using Composite Reliability and Cronbach's Alpha. b). Structural Model Evaluation (Inner Model). This stage is used to test the relationships among variables in the research model, including: 1. Path coefficient analysis to test hypotheses H1–H8, 2. Significance testing using bootstrapping, 3. Coefficient of determination (R^2) to assess explanatory power, 4. Mediation and moderation effect testing according to the proposed model

4.2 Expected Findings

Based on the theoretical foundation and previous empirical studies, the expected findings of this research are as follows: 1. Entrepreneurial orientation is expected to have a positive effect on innovation, indicating that higher entrepreneurial orientation leads to stronger innovation capability among MSMEs. 2. Entrepreneurial competence is expected to positively influence innovation, suggesting that knowledge, skills, and managerial ability enhance innovation activities. 3. Innovation is expected to have a positive effect on competitive advantage, highlighting its role as a key driver of MSME competitiveness. 4. Innovation is expected to mediate the relationship between entrepreneurial orientation and competitive advantage, indicating that the indirect effect is more significant than the direct effect. 5. Innovation is expected to mediate the relationship between entrepreneurial competence and competitive advantage, showing that competence must be transformed through innovation to generate competitive advantage. 6. Government support is expected to strengthen the relationship between innovation and competitive advantage, through policies, training, financing, and infrastructure that support MSME development.

Overall, the expected results suggest that MSME competitive advantage is not only determined by internal factors, but also by innovation capability and external institutional support.

V. Conclusion

5.1 Conclusion

This study aims to analyze the effect of entrepreneurial orientation and entrepreneurial competence on the competitive advantage of MSMEs in the *Carpintaria* (furniture production) sector in Timor-Leste, with innovation as a mediating variable and government support as a moderating variable.

Conceptually, this research integrates the Resource-Based View (RBV) and Dynamic Capabilities Theory to explain how internal resources and dynamic capabilities contribute to MSME competitive advantage.

5.2 Expected Contributions. This study is expected to provide the following contributions: a. Theoretical Contribution. It strengthens the integration of RBV and Dynamic Capabilities Theory in explaining the mechanism of MSME competitive advantage through innovation as a dynamic capability. b. Practical Contribution. It provides insights for MSME actors in the carpintaria sector in Timor-Leste to improve competitiveness through entrepreneurial orientation, competence, and innovation, supported by effective utilization of government support. C. Policy Contribution. It offers recommendations for policymakers in designing MSME development strategies, particularly for the wood-based furniture industry in developing economies.

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