# UNDERSTANDING THE IMPACT OF ENTREPRENEURIAL ORIENTATION ON INNOVATION PERFORMANCE OF SMES: EVIDENCE FROM MALAYSIA

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(Received 26th March 2025; revised 28th May 2025; accepted 07th June 2025)

**Abstract.** Small and medium-sized enterprises (SMEs) play a crucial role in the economic development of countries by providing opportunities for individuals to enhance their skills and knowledge. These businesses are agile and can quickly adapt to changes in supply and demand. As a result, SMEs that demonstrate higher levels of innovation are better equipped to adapt to evolving environments and develop new skills that improve their performance. Research consistently highlights that Entrepreneurial Orientation (EO) is essential for driving innovation within SMEs. This study aimed to investigate the relationship between EO (innovativeness, risk-taking and proactiveness) on SMEs innovation performance (IP). Using a cross-sectional design, the research gathered quantitative data from 128 randomly selected SMEs in the manufacturing, services, and construction sectors in Peninsular Malaysia. The results showed that the EO dimensions of risk-taking, innovativeness, and proactiveness have a positive effect on IP. Based on these findings, it is recommended that Malaysian SMEs focus on the identified EO aspects to enhance their entrepreneurial culture and innovation capabilities. This research contributes to the existing literature by demonstrating how Malaysian SMEs can increase their prospects of success. The findings are anticipated to have implications for both academic and practitioner communities in developing strategies to enhance innovation levels in SMEs.
**Keywords**: *entrepreneurship, innovation, entrepreneurial orientation, innovation performance, SMEs*

## Introduction

Small and medium-sized enterprises (SMEs) are integral to promoting economic growth in both advanced and emerging economies (Algan, 2019; Obi et al., 2018). On a global scale, SMEs are acknowledged as the primary catalysts for job creation, representing 45% of employment, dominating approximately 80% of the formal sector, and contributing an average of 33% to the GDP (Ndubisi et al., 2021). In Malaysia, SMEs are defined as businesses with fewer than 200 employees and an annual revenue of less than RM 50 million. They play a crucial role in the country's economic framework, contributing significantly to national economic performance. Specifically, SMEs represent 39.1% of Malaysia's Gross Domestic Product (GDP), 12.2% of its export volume, and 48.5% of the employment sector. As a result, improving the performance of SMEs has become a key focus for policymakers, practitioners, and business owners. As noted by Khalil et al. (2022), various factors affect the performance of small and medium-sized enterprises (SMEs), including marketing, knowledge management, human resources, innovation, financial management, capital investment, and practical entrepreneurship. Among these factors, innovation stands out as a vital driver (Expósito and Sanchis-Llopis, 2019; Maldonado-Guzmán et al., 2019). It is often regarded as an essential resource for maintaining a competitive advantage, as it enables

the development of new products and services and contributes to improved performance. Previous studies consistently emphasize the importance for organizations to remain flexible and responsive to changing market conditions (Distanont, 2020). Additionally, the success of a business is frequently linked to its ability to identify and effectively seize emerging opportunities. In this context, innovation plays a crucial role in achieving commercial success due to its positive impact on overall business performance (Chege and Wang, 2020).

According to a report on the Twelfth Malaysia Plan (RMKe-12), Malaysia is striving to transition into an innovation-driven economy through various initiatives, including the National Entrepreneurship Policy 2030, the NCER Grant, the Digital Content Grant (DCG), the Malaysia Digital Catalyst Grant (MDCG), the Market Development Grant (MDG), and the High-Impact Product (HIP). These initiatives are backed by a substantial annual budget of billions of ringgits. However, despite this strong governmental support, data from the Global Innovation Index (2024) indicates that Malaysia's ranking in the Global Innovation Index (GII) has remained stagnant at number 36 for three consecutive years (2021-2023). In examining the comparative levels of innovative performance between developed and developing nations, there is evidence suggesting a decline in Malaysia's innovative capabilities compared with other countries. This decline, along with the sluggish growth of the Gross Domestic Product (GDP) since 1997, is primarily due to the suboptimal innovation performance of small and medium enterprises (SMEs) in Malaysia (Mohd et al., 2021). Currently, SMEs are not performing at an optimal level, as indicated by their GDP contribution remaining below 40% (Mohamad et al., 2021). Notably, the contribution of Malaysian SMEs to the national GDP is relatively modest compared to other countries such as China, India, Algeria, Indonesia, Ghana, Egypt, and Vietnam (Sana et al., 2020).

Entrepreneurship is recognized as a pivotal catalyst for development in numerous countries (Tunio et al., 2021). Entrepreneurs possess the ability to identify market opportunities and leverage innovation to create products or services that meet consumer needs (Mitra, 2019). Additionally, entrepreneurship nurtures competition, which not only stimulates innovation but also improves the quality of goods and services (Pradhan et al., 2020). The significance of entrepreneurship and innovation is underscored by their role as the primary engines of economic growth (Carayannis, 2020). These activities enable the creation of new ideas and products, the adoption of innovative business models, and the establishment of new markets, thereby facilitating job creation, boosting productivity, and improving the standard of living (Crudu, 2019). Consequently, entrepreneurship and innovation are crucial for maintaining economic competitiveness and enhancing a country's standing in the global marketplace. Recently, entrepreneurship has become a vital element of economic growth, with entrepreneurial orientation (EO) playing a crucial role in achieving success (Wahyuni and Sara, 2020; Hossain and Al Asheq, 2019). EO encompasses the actions, procedures, policies, methods, decision-making strategies, and practices that facilitate entrepreneurial decision-making in SMEs. For SMEs, EO is particularly crucial as they navigate the challenges of industry survival and face intense competition from larger firms (Putniņš and Sauka, 2020). To effectively compete and secure a competitive advantage, SMEs must engage in risk-taking by investing in innovative products and services, exploring new market opportunities and participating in dynamic innovative exchanges (Arshad et al., 2020). Thus, SMEs must be proactive in setting strategic goals and practices to maintain their competitiveness within the industry.

Prior studies have primarily concentrated on the direct influence of EO on organizational performance (Arabeche et al., 2022; Meekaewkunchorn et al., 2021; Ali et al., 2020; Zarrouk et al., 2020; Herlinawati et al., 2019) and innovation (Hanifah et al., 2022; Freixanet et al., 2021). EO is pivotal in realizing innovative developmental outcomes. It is apparent that EO bolsters performance by enhancing the ability of business owners and managers to respond to evolving market demands and trends, thereby encouraging the innovation. Urban and Maphumulo (2022) assert that EO directly influences both product and process innovation. As EO augments a firms proactiveness, inclination to take risks and innovate (Kraus et al., 2023; Zhai et al., 2018), a clear linkage between EO and innovation performance (IP) is established. As highlighted by Shaher and Ali (2020), empirical research examining the relationship between entrepreneurial orientation (EO) and innovative performance (IP) remains scarce. This gap has prompted the current study to investigate the significance of innovative performance within Malaysian SMEs. Existing studies predominantly focus on developed countries, often neglecting the context of emerging economies, which results in critical research gaps. Consequently, this study aims to address these gaps by concentrating on Malaysia, thereby providing a basis for policy development that caters to the unique needs of emerging economies, particularly SMEs.

## *Literature review*

### *Entrepreneurial orientation*

Entrepreneurial orientation (EO) refers to ‘the decision-making processes, techniques, and activities that support new entrance’ (Miller, 1983). EO pertains to the internal management practices of organizations, particularly within small and medium-sized enterprises (SMEs). It highlights the critical role of innovation and proactive measures in enhancing organizational performance and achieving a competitive advantage in the market (Lumpkin and Pidduck, 2021). The significance of EO is rooted in its ability to leverage creative and innovative resources to identify and exploit business opportunities. EO is defined by three core dimensions: innovativeness, proactiveness, and risk taking (Miller, 1983). Innovativeness refers to an ‘organization's inclination to engage in and support the development of new ideas, experimentation, and creative processes, which can result in the creation of new products, services, or technological processes’ (Miller, 1983). It also involves seeking innovative, unconventional, or novel solutions to existing problems and needs (Ali et al., 2020; Wales et al., 2020). This attribute encourages enterprises to enhance their investment in technological innovation activities, such as acquiring new technologies and developing new products, thereby augmenting their technological innovation capabilities (Alam et al., 2022; Arabeche et al., 2022; Chetthamrongchai and Jermsittiparsert, 2020). Furthermore, innovativeness can drive organizational reform and innovation, expedite the dissemination and transformation of new knowledge, and contribute to the generation of new knowledge and technology, ultimately improving enterprise innovation performance (Alzuod and Dalain, 2022).

Risk-taking is characterized by a firms inclination to pursue high-risk initiatives and a managerial preference for bold actions over cautious ones to fulfill organizational goals (Miller, 1983). In the context of technology, this concept signifies the willingness of enterprises to allocate resources to technological innovation strategies or projects that entail a substantial risk of failure and uncertainty (Lumpkin and Pidduck, 2021). It is

closely associated with entrepreneurial risk preferences and attitudes towards emerging technologies. The adventurous nature of risk-taking can stimulate innovation within a company, establish new benchmarks, and enhance its competitive advantage (Arshad et al., 2020; Kee and Rahman, 2020). By cultivating an organizational culture that embraces risk and encourages experimentation, risk-taking accelerates the acquisition, learning, and assimilation of new external technologies, thereby improving an enterprise's technological innovation performance (Cuevas-Vargas et al., 2019; Lago et al., 2018). Thus, proactive enterprises step into uncertain market conditions, continually seeking, identifying, and capitalizing on new opportunities to achieve a first-mover advantage. Proactiveness entails anticipating and actively engaging with future demands by identifying and pursuing new opportunities, whether or not they align with current operations (Wales et al., 2020). This strategic approach includes the early launch of new products and brands to outpace competitors and the deliberate cessation of operations that have reached maturity or are declining (Hossain et al., 2022). Enterprises exhibiting proactiveness are inclined to implement positive marketing strategies, proactive actions, and pioneering strategies to introduce new products, processes, technologies, and services, thereby gaining competitive advantage (Anwar and Shah, 2021; Rezaei and Ortt, 2018). To secure this advantage, proactive enterprises exploit market opportunities before their competitors and take the lead in launching new products and services (Basco et al., 2020). Consequently, proactive enterprises are adept at recognizing new market opportunities, responding promptly, and ultimately delivering innovative results.

### *Innovation performance*

Demircioglu and Audretsch (2019) define innovation performance (IP) as the effectiveness of an organization's new products, which leads to enhanced efficiencies in advertising, production, and finance. Yuen and Ng (2021) argue that IP is crucial for promoting novelty, experimentation, and creative processes, ultimately resulting in the development of new products and services, technological advancements, and innovative solutions. Furthermore, Mennen et al. (2018) assessed IP by examining the extent to which an organization introduces new products, devices, or process systems to the market. Curado et al. (2018) also highlight the relationship between innovation and performance, noting that innovation contributes to improvements in efficiency, productivity, quality, competitive positioning, and market share. The most prevalent method for measuring innovation centers around product and process innovation. Product innovation involves the introduction of new goods or services, as well as significant enhancements to existing ones (Tidd, 2023). Meanwhile, process innovation pertains to substantial improvements in manufacturing processes or logistical support, which can include advancements in activities such as computing, accounting, purchasing, or maintenance (Mohnen et al., 2019). However, there is no universally accepted method for assessing innovation performance. Due to these discrepancies, this study chooses to utilize seven indicators proposed by Gunday et al. (2011). These indicators encompass the ability to launch new products and services, the percentage of new products in the portfolio, the number of new product and service projects, innovations implemented in work processes and methods, the quality of new products and services, the number of intellectual properties introduced, and the renewal of organizational work environment systems.

### *Entrepreneurial orientation and innovation performance of SMEs*

The factors influencing technological innovation performance among small and medium-sized enterprises (SMEs) are complex and varied. Several researchers contend that entrepreneurial behaviour directly influences the innovation of products, processes, and management practices (Kaushal et al., 2022; Iqbal et al., 2021). EO is acknowledged for fostering proactiveness, risk-taking and a strong inclination toward innovation (Perera and Samarakoon, 2021). As a result, businesses are increasingly adopting strategies that emphasize entrepreneurial orientation, which includes innovativeness, proactiveness, and risk-taking. These strategies aim to optimize innovation performance, continuously enhance the enterprise's core competitiveness, and improve the overall performance of the firm. The relationship between EO and firm performance has been extensively explored in both theoretical and empirical literature (Meekaewkunchorn et al., 2021; Isichei et al., 2020; Shah and Ahmad, 2019). Despite this, there remains a limited focus on how EO specifically influences the innovation performance of SMEs (Abdul-Halim et al., 2019; Musawa and Ahmad, 2018). This constitutes a significant gap considering that innovation performance is a crucial indicator for SMEs. While studies by Hanifah et al. (2022) as well as Freixanet et al. (2021) have provided some insights into this relationship, it is important to note that EO constructs and innovation performance levels can differ markedly across countries (Alzuod and Dalain, 2022). Thus, this study aims to conduct a comprehensive analysis of EO within Malaysian SMEs and its influence on their innovation performance (*Figure 1*).

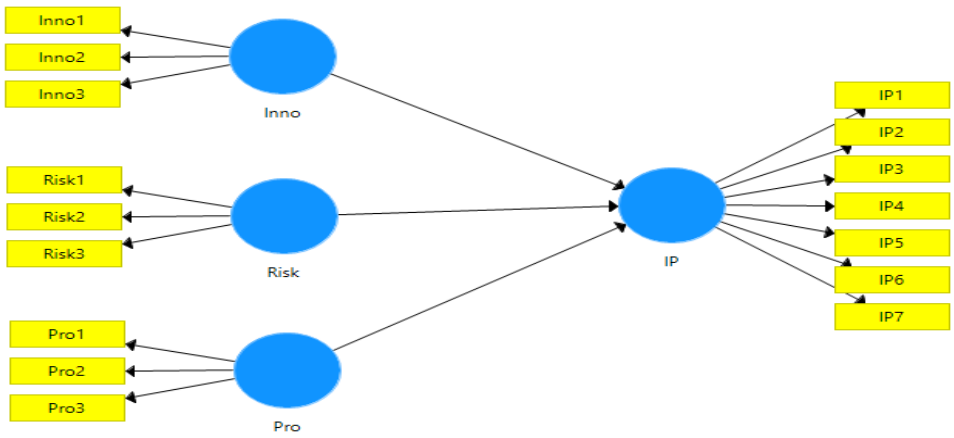


***Figure 1.*** *Research model.*
*Note: Inno=Innovativeness; Risk=Risk-taking; Pro=Proactiveness; IP=Innovation performance).*

## Materials and Methods

This study utilized a quantitative research methodology. The sample of SMEs was derived from three reputable sources: Majlis Amanah Rakyat (MARA), SMEs Corp., and Perbadanan Usahawan National Berhad (PUNB). Data collection involved distributing online questionnaires to the owners and managers through platforms such as WhatsApp, email, and Facebook, utilizing a simple random sampling technique. The questionnaire was constructed using established items from previous studies to evaluate entrepreneurial orientation (Miller, 1983) and innovation performance (Gunday et al., 2011). A five-point Likert scale was used to assess both entrepreneurial competencies

and SME performance, with response options ranging from 1 (strongly disagree) to 5 (strongly agree). Out of the 1,500 questionnaires distributed, 143 responses were obtained, with 15 being excluded due to significant incompletion, resulting in 128 valid responses for analysis which yielded a response rate of 6%. According to Hair Jr et al. (2017), a minimum of 100 respondents is necessary in quantitative research to ensure the reliability of results when using statistical analysis tools.

## Results and Discussion

### *Measurement model analysis*

To empirically investigate the proposed model, these studies employed PLS-SEM to evaluate both the measurement and structural model constructs. As highlighted by several scholars, two fundamental aspects of validity were examined: convergent validity and discriminant validity (*Figure 2*).

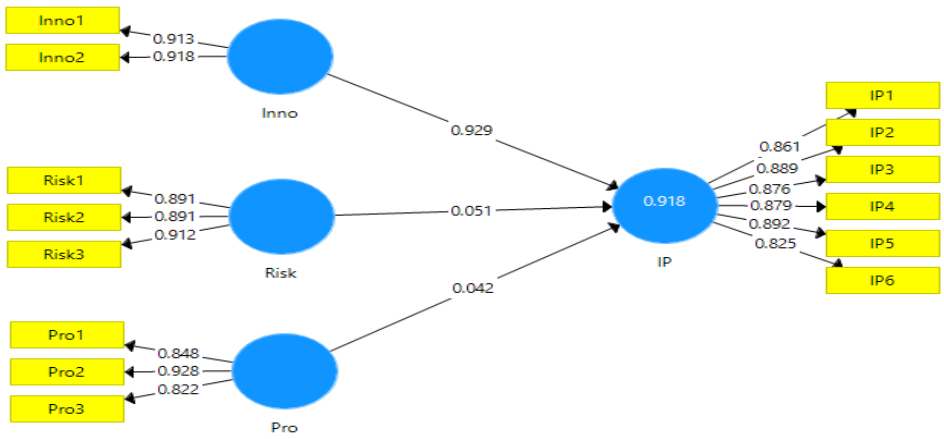


***Figure 2.*** *Results of measurement model.*

### *Convergent validity*

Convergent validity was assessed through three main components: factor loading, composite reliability (CR), and average variance extracted (AVE). According to the guidelines established by Hair Jr et al. (2017), acceptable levels for convergent validity include a factor loading of at least 0.7, a CR value exceeding 0.7, and an AVE of 0.5 or higher. To improve the measurement model, two items, Inno3 and IP7, were removed due to inadequate factor loadings (*Table 1*). The analysis revealed that the factor loading values ranged from 0.822 to 0.928, which exceeded the recommended minimum of 0.7. Furthermore, all observed CR values were above 0.7, confirming the reliability of the measurement instrument. Additionally, all Cronbach's alpha values were greater than 0.807.

***Table 1****. Convergent validity.*

| Item | Cronbach's Alpha | Composite reliability | Average Variance Extracted (AVE) |
|---|---|---|---|
| IP | 0.936 | 0.949 | 0.758 |
| Inno | 0.807 | 0.912 | 0.838 |
| Pro | 0.842 | 0.901 | 0.752 |
| Risk | 0.881 | 0.926 | 0.807 |

### *Discriminant validity*

Hair Jr et al. (2017) outlined two methods for evaluating discriminant validity: Fornell-Larcker criterion and heterotrait-monotrait (HTMT). The Fornell-Larcker criterion is a method used to evaluate discriminant validity in structural equation modeling. It ensures that a construct is distinct from others by comparing the square root of its Average Variance Extracted (AVE) with its correlations to other constructs. To establish discriminant validity, it is essential that the square root of the average variance extracted (AVE) exceeds any correlations among the latent variables. As demonstrated in *Table 2*, each latent construct's value is greater than the correlations with other latent constructs, thereby affirming adequate discriminant validity. According to Yusoff et al. (2020), HTMT values exceeding 0.85/0.90 could signal potential issues with discriminant validity. In this study, the results fall below the 0.90 threshold. *Table 3* illustrates the HTMT outcomes pertinent to the constructs of the research model. These values consistently remain under the 0.85 benchmark, thereby affirming the robustness of the discriminant validity.

***Table 2**. Correlation of latent variables and square roots of AVE.*

| Item | IP | Inno | Pro | Risk |
|---|---|---|---|---|
| IP | 0.870 | | | |
| Inno | 0.863 | 0.865 | | |
| Pro | 0.253 | 0.218 | 0.867 | |
| Risk | 0.380 | 0.346 | 0.167 | 0.898 |

***Table 3**. Heterotrait-Monotrait (HTMT).*

| Item | IP | Inno | Pro | Risk |
|---|---|---|---|---|
| IP | | | | |
| Inno | 0.495 | | | |
| Pro | 0.265 | 0.241 | | |
| Risk | 0.414 | 0.404 | 0.193 | |

### *Structural models*

Hair Jr et al. (2017) suggested that when assessing structural models, it is essential to analyze $R^2$, beta coefficients, t-values, and p-values through a bootstrapping approach with 3,000 samples. The findings in *Table 4* demonstrate that innovation, risk-taking, and proactiveness significantly influence on the innovation performance. The entrepreneurial orientation constructs collectively account for 91.8% of the variance in SMEs' innovation performance, as evidenced by an $R^2$ value of 0.918.

***Table 4**. Results of hypothesis test.*

| Item | Beta | T-value | P-value | Decision | $R^2$ |
|---|---|---|---|---|---|
| Inno -> IP | 0.929 | 10.024 | 0.000 | Supported | 91.8% |
| Pro -> IP | 0.042 | 2.468 | 0.014 | Supported | |
| Risk -> IP | 0.051 | 2.621 | 0.009 | Supported | |

This study aimed to investigate the dimensions of entrepreneurial orientation (EO), specifically focusing on innovativeness, risk-taking, and proactiveness, and their impact on innovative performance (IP). The findings indicate that these dimensions of EO

significantly influence IP. Moreover, the results suggest that innovativeness plays a crucial role in shaping EO dimensions. This can be attributed to the nature of innovation as exemplified by small and medium-sized enterprises (SMEs), which involve a relentless pursuit of creative solutions to business challenges and a strong commitment to driving transformational change (Benazzouz, 2019). As a result, SME owners and managers consistently seek ways to enhance business sales, often by leveraging social media and other online platforms (Amoah and Jibril, 2020; Ioanid et al., 2018). Consequently, the SMEs examined in this study have shown a dedicated effort to integrate innovation into their business operations.

SMEs consistently operate in high-risk environments, which compels them to embrace calculated risks in order to pursue opportunities in new markets or investments. Engaging in risk-taking serves as a strategic approach to creating opportunities and driving progress (Onwe et al., 2020). Managers or owners who are inclined towards risk-taking are willing to invest financial and other resources into projects with uncertain outcomes (Arshad et al., 2020; Khan et al., 2020). Risk-taking encompasses decisions made by management such as investing in new projects, securing loans, expanding business operations, entering new markets, launching innovative products, revamping existing processes, and recruiting new employees (Okoli et al., 2021; Wahyuni and Sara, 2020). Consequently, the SMEs examined in this study have shown that they engage in risk-taking as a strategy to set themselves apart from their competitors.

Entrepreneurs and managers who exhibit proactive behavior are more likely to embark on new business ventures in pursuit of potential opportunities. They show heightened responsiveness to market challenges, sustain a competitive advantage, and pave the way for the introduction of innovative products and services (Supeni et al., 2023). By adopting a proactive approach, SMEs can effectively leverage their first-mover advantage to secure a strong presence in market distribution channels (Ibrahim and Abu, 2020). Consequently, the SMEs examined in this research demonstrate that higher levels of proactiveness correlate with greater innovation, ultimately supporting sustained long-term growth.

## Conclusion

Based on this study finding, this study suggests that for firm owners or managers seeking to promote innovation throughout their organization, it is essential to develop a robust entrepreneurial orientation. This orientation, marked by a willingness to take risks, a proactive approach, and a commitment to innovation, will greatly enhance the innovation process within SMEs. Despite its theoretical and practical contributions, this empirical study has several limitations that should be addressed in future research. Notably, the study is geographically confined to a peninsular in Malaysia, which restricts the generalizability of its findings. To develop a more comprehensive understanding of this concept, future research could broaden the framework to include large enterprises across various sectors, thereby enriching insights into the impact of entrepreneurial orientation (EO) on innovation performance (IP). Additionally, it's important to highlight that the current study relied solely on quantitative analysis. Future investigations could benefit from incorporating both quantitative and qualitative data, enabling mixed-method analyses that provide a more nuanced understanding of the phenomena being studied.

## Acknowledgement

This study is entirely self-financed, indicating that all related expenses including those for materials, equipment, data collection and analysis are covered by the researcher(s) without financial assistance from academic institutions, government agencies, private sponsors, or grants.

## Conflict of interest

The authors confirm that there is no conflict of interest involved with any parties in this research study.

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