ISSN 2409-2665
Journal of Logistics, Informatics and Service Science
Vol. 12 (2025) No. 4, pp. 18-37
DOI:10.33168/JLISS.2025.0402

Business Model Innovation and Digitalization in SME Internationalization: The Mediating Role of Internationalization Process

Dilan S Batuparan, Sari Wahyuni, Lily Sudhartio

University of Indonesia, DKI Jakarta, Indonesia

dilanbatuparan0001@gmail.com, sari.whyn@gmail.com, Lili.sudhartio@gmail.com

Abstract. Internationalization as a business strategy has become a global trend for both companies and Small and Medium Enterprises (SMEs). This trend occurs when global marketplaces evolve and become more digital, forcing businesses to adapt their business models and embrace digital technology in order to remain competitive and maintain worldwide performance. This study investigates the implications of Business Model Innovation (BMI) and digitalization on international performance, with a particular emphasis on the mediating function of the internationalization process. A quantitative method was used, with survey data obtained from 200 export-oriented Small and Medium Enterprises (SMEs) in East Java, Central Java, and West Java regions of Indonesia. These regions were chosen based on their concentration of exporting SMEs, which account for over 60% of the country's SME exports. This study makes a methodological contribution by using PLS-SEM in the setting of Indonesian SMEs, as well as a theoretical contribution by expanding our understanding of the internationalization process in digital contexts, with practical implications for SME managers and policymakers. Hypothesis testing shows that both digitalization ($\beta = 0.431$, $p < 0.001$) and BMI ($\beta = 0.222$, $p < 0.001$) have a substantial impact on international performance. Internationalization has a significant direct effect on international performance ($\beta = 0.578$, $p < 0.001$) and acts as a mediator for digitalization ($\beta = 0.221$, $p < 0.001$) and BMI ($\beta = 0.128$, $p = 0.002$). These findings emphasize the strategic necessity of combining digital transformation with business model innovation to boost SME competitiveness in global markets, particularly in emerging nations.

Keywords: Small and Medium Enterprises; Business Model Innovation; Digitalization; International Performance; Internationalization Process; Smart Partial Least Square

1. Introduction

The rapid development and growing need for innovation in digital technology has redesigned the way companies work in international markets (Yoon et al., 2020). Globalization has led to increased competition and has convinced companies to consider new strategies to improve efficiency, agility and market adaptability (Gounaris & Avlonitis, 2001; Khalaf et al., 2023). Business Model Innovation (BMI) and digitalization have evolved as key drivers for businesses to optimize their value creation processes and achieve sustainable competitive advantages (Bao et al., 2021). Using new configurations of digital tools and business models, businesses can better respond to market dynamics (Nepal, 2025), improve customer experiences(Subedi, 2024), and streamline operations across borders (Warner & Wäger, 2019).

This also applied in the world of Small and Medium Enterprises (SMEs). SMEs, who plays important role in global economic development, particularly in an ambitious economy, have contributed significantly to employment, innovation and GDP growth (Huang & Ichikohji, 2024). Furthermore Bianchi et al. (2016) assert that SMEs internationalization has increased significantly over the past decade. In Indonesia, where this study is located, export performance of small and medium-sized enterprises shows significant upward trend. The export value for instance, climb to highest volume of IDR 30.163 billion in 2017, increasing by 85% over seven years. This growth highlights the potential for an increase in SMEs to participate in global markets and provides a relevant and effective context for examining how digitalization and business model innovation (BMI) communicated by the internationalization process improves international performance (Krenn et al., 2024).

In Indonesia, SMEs frequently confront structural constraints such as limited access to international networks, inadequate digital infrastructure, and regulatory complexity, which restrict their capacity to expand abroad (Macieira da Costa, 2018), underdeveloped technological infrastructure (Lwesya & Mwakalobo, 2023), and lack of international experience that could hinder global competitiveness (Wardaya et al., 2019). In relation to digitalization and business model innovation (BMI), these restrictions can be strengthened by institutional emptiness and dynamic market environments. Small and medium-sized businesses have unique mobility and entrepreneurial orientation that can be used to reconstruct their business models using digital tools to overcome resource limitations and improve international performance (Gjorevska, 2023). The integration of digital technologies such as cloud computing, digital marketing, and data analytics allows SMEs to access new markets, adapt offers to international customers, and improve operational efficiency across the border (Subedi, 2024).

The strategic implementation of BMI enables SMEs, their value promises (Kc et al., 2024), delivery mechanisms (Apriani et al., 2024) and sales models in ways that meet the unique requirements of the global market (Huang & Ichikohji, 2024). For small and medium-sized enterprises in emerging countries, this often means adopting slimmer and scalable digital solutions that can take into account rapid changes and customer-oriented innovations (Dutot & Bergeron, 2016). Successful digitalization and internationalization through BMI require more than just technical adaptation. This includes developing strategic skills (Huang & Ichikohji, 2024), developing digital partnerships (Zehir & Karaca, 2023), and navigation into institutional complexity (Bui et al., 2025). It is necessary to understand how small and medium-sized enterprises combine digitization and BMI to promote international growth (Huang & Ichikohji, 2024), particularly considering the contextual challenges and possibilities that distinguish them from large multinational companies (Dung & Dung, 2024). A more nuanced understanding of these mechanisms can provide valuable insight into how small and medium-sized businesses can maintain their competitive advantage and contribute to integrated globalization (Merín-Rodrigáñez et al., 2025).

To strengthen our understanding about the contribution of BMI and digitalization to international performance, especially in the context of SMEs, it is necessary to have comprehensive understanding on the mechanisms through which these factors influence international performance. Existing research explores these concepts on their own, focusing on digital transformation (Bui et al., 2025; Hanandeh et

al., 2023) or reconstructing business models (Warner & Wäger, 2019) without integrating the effects of combinations on global expansion. Previous research focused primarily on developed countries (Evers et al., 2023), leaving research gaps in terms of how companies in emerging countries can use BMI and digitalization to improve international competitiveness (Cho et al., 2023; Valiušis, 2025). This gap is particularly important as companies in emerging countries face a variety of challenges, including institutional emptiness (Tewari et al., 2019), resource limitations (Zhang et al., 2020), and market volatility that can affect digital technology implementation and business model innovation (Dung & Dung, 2024). Previous research also recognizes the role of digitalization in fostering entry and expansion into international markets (Agnihotri et al., 2023; Elsharnouby et al., 2024), but often overlooks the strategic and structural adjustments that companies must overlook in order to fully utilize these innovations.

The concept of internationalization process, especially those conceptualized by Jan Johanson and Jan-Erik Vahlne (Johanson & Vahlne, 1977), can help us to complete our understanding about the mechanisms through which these factors, digitalization and BMI, influence international performance. This is supported by Herve et al (2020b) who shows that the interaction between the digitalization process and the internationalization process can be traced back to the desire of companies involved in internationalization to better manage costs, access capabilities, resources and competencies; market knowledge; distance and location; relationship between competencies; and partnership network. On the other hand, there is a direct connection between the construct of competitive advantage and the nexus that exists between the innovation of business models and internationalization (Cavallo et al, 2019). The relationship between strategy concepts (like BM) and international business has also already been discussed by Casadesus-Masanell and Ricart (2010) and Ricart et al. (2004).

Despite the rising volume of research on digitalization and business model innovation (BMI), numerous crucial gaps remain unfilled. First, earlier research has primarily focused on the effects of digitization and BMI in isolation, providing insufficient insight into how their combined implementation affects international performance. Second, the majority of available literature focuses on large enterprises or SMEs in developed nations, leaving a huge gap in understanding the dynamics of SMEs operating in emerging markets like Indonesia. Third, while the idea of the internationalization process is well understood, its significance as a mediating mechanism linking BMI and digitization to international performance remains unclear. Addressing these gaps is critical for gaining a more comprehensive knowledge of how strategic innovation and digital transformation might boost global competitiveness in resource-constrained situations.

To address these concerns, this study suggests the following research questions: (1) RQ1: How do BMI and digitization affect international success in Indonesian SMEs? (2) RQ2: What role does the internationalization process play in managing these interactions? And (3) RQ3: Which pathway (direct or mediated) has a greater impact on international performance?

This study aims to bridge this gap by examining the role of mediating the internationalization process in relations between BMI, digitalization and international performance. The internationalization process serves as a critical bridge that combines corporate-level innovation with global success. By investigating this relationship, this study provides new insights into how companies can strategically navigate their expansion efforts and maximize the benefits of digital transformation and innovative business models in international markets. This study contributes to a more holistic understanding of how companies can overcome barriers to internationalization through strategic digitalization efforts and adapting business models.

2. Literature Review

A critical concern is the heavy reliance on MDPI journal sources, which are often considered predatory publications. The authors need to replace these references with higher-quality sources from journals

such as the Journal of International Business Studies, Strategic Management Journal, or Academy of Management Review. This change would significantly improve the credibility and theoretical foundation of the literature review.

2.1. Internationalization Process

The concept of internationalization process in this study applied the concept developed by Johanson & Vahlne (1977, 1990, 2009). Often referred as Uppsala Model, this concept of internationalization process is regarded as the most realistic portrayal of the internationalization process. Developed with foundation of the behavioral theory of business (Cyert and March, 1963; Aharoni, 1966) and theory of corporate growth (Penrose, 1959), the concept is understood as a process whereby the firms steadily expand their global engagement, by gradually conduct acquisition, integration and use of knowledge about foreign markets and operations, and incrementally increasing commitments to foreign markets (Johanson and Vahlne, 1977). Furthermore, it is also be said that the process is distinguished by an interaction between, the development of know-how of overseas markets and process and, a rising commitment of resources to international markets on the other side (Johanson and Vahlne, 1990).

2.2. International Performance

According to Hult et al. (2008) there are three aspects to international performance: finance, operation, and total effectiveness. Financial performance is assessed using result-based metrics, such as accounting- and market-based standards, that are thought to reflect economic objectives. Profit margin, earnings per share, stock price, sales growth, international sales growth, and Tobin's Q are all taken into account when calculating overall profitability (as defined by ratios like ROI, ROS, ROA and ROE). Operational performance is the terminology for non-financial dimensions that focus on the success of operational aspects that lead to success in achieving financial performance goals. Operational performance also includes results from internal processes and results from product-market aspects (such as market share, efficiency, new product development, innovation and product/service quality). Measures of overall effectiveness include reputation, adaptability, perceptions of overall performance, actual achievement, and perceptions of overall performance compared to competitors. Similar to Hult et al. (2008), Gerschewski et al. (2015) suggest elements of international performance such as monetary/financial, operational, and perceived success.

Digitalization and Internationalization Process

Digitalization serves as a catalyst for international expansion by stopping operations, improving customer interactions, and enabling increasingly detailed, data-controlled decisions (Nunes et al., 2024). The integration of digital technologies such as cloud computing, artificial intelligence, and advanced analytics, businesses can achieve greater efficiency in managing their global value chains, coordinate cross-border teams, and optimize resource allocation (Li et al., 2025). The digital platform allows businesses to deal more effectively with international customers by providing personalized experiences, real-time support and a seamless digital interface that dramatically improves customer satisfaction and loyalty across a variety of markets (da Fonseca et al., 2023). Building on dynamic capabilities theory (Teece et al., 1997)and the resource-based view (Barney et al., 2001), this study proposes that BMI and digitalization represent dynamic capabilities that enable SMEs to reconfigure resources for international expansion.

In addition to operational improvements, digital transformation plays a strategic role in addressing the complexities and challenges associated with internationalization (da Fonseca et al., 2023). Previous research shows that digital tools can help companies reduce entry barriers such as limited market knowledge (Nunes et al., 2024), regulatory differences (Li et al., 2025), and high transaction costs (da Fonseca et al., 2023). Using digital skills allows businesses to gain deeper insight into foreign consumer behavior, monitor competitive landscapes and adapt mobility-enabled strategies (Ghotbifar et al., 2017). Digitalization not only more smoothly driven, but it will strengthen the ability of businesses to maintain

and expand their businesses in an increasingly digitized, interconnected global economy (Kolagar et al., 2022). Based on these reasons, the researcher suggests the first hypothesis, which follows:

H1: Digitalization has a significant impact on the internationalization process.

Business Model Innovation and Internationalization Process

BMI is the process of reconstructing one or more interconnected core elements that recognize and use new possibilities to increase the process of creating and delivering value, while simultaneously maintaining or increasing the performance and competitiveness of the company (Evers et al., 2023; Zhang et al., 2020). Business Model Innovation (BMI) represents the strategic new structure of the core corporate elements, including its value creation, value creation architecture, and sales mechanisms (Chen et al., 2025). In today's rapidly developing and competitive business environment, businesses are forced to go beyond their products, handle innovations, and focus on innovation in delivering and grasping value (Merín-Rodrigáñez et al., 2025). By adapting business models, businesses can respond more effectively to technological changes (Heubeck & Meckl, 2022), consumer preferences (Oliveira-Dias et al., 2022), and emerging market dynamics (Zhang et al., 2020). This ability is particularly important for navigation of uncertainty and maintaining competitive advantages in various industries.

BMI plays a central role in designing and promoting internationalization processes by adapting strategic approaches to the complexity of entry and operation of companies into foreign markets (Dung & Dung, 2024). The new structure of promises of value, delivery systems and revenue models allow businesses to adapt their business models and adapt to the institutional, cultural and consumer functions of the international target market (Krenn et al., 2024; Mikhailova & Olsen, 2016). This adaptability supports companies to overcome barriers to entry, management of uncertainty, and establish competitive advantages at various stages of international expansion (Dung & Dung, 2024). BMI increases the effectiveness and speed of the internationalization process, allowing companies to dynamically respond to global opportunities and challenges (Mikhailova & Olsen, 2016). Based on these reasons, the researcher suggests the second hypothesis, which follows:

H1: Business model innovation has a significant impact on the internationalization process.

Internationalization Process and International Performance

The internationalization process that constitutes the systematic expansion of the company's activities into foreign markets is essentially related to international services (Nunes et al., 2024). When companies at various stages of early market internationalization, when introduced into the establishment of global face-to-face deposits, they will receive valuable knowledge (B. Jin & Jung, 2016), develop intercultural skills (Nunes et al., 2024) and strengthen their international networks (Li et al., 2025). These skills allow companies to effectively adapt their strategies to a variety of institutional contexts (B. Jin & Jung, 2016), reduce risk (Fernandes et al., 2020; Nunes et al., 2024), and use overseas market opportunities (Li et al., 2025). A well-executed internationalization process improves the ability of companies to achieve superior results in terms of global penetration, sales growth and competitive advantage (Nunes et al., 2024). Based on these reasons, the researcher suggests the third hypothesis, which follows:

H3: internationalization process has a significant impact on the international performance.

Digitalization and International Performance

Digitalization has a significant impact on the internationalization process by equipping companies with the technical skills needed to navigate the complexities of global expansion (da Fonseca et al., 2023). Digital tools and platforms improve market research (Purbasari et al., 2021), streamline communication (Yang et al., 2023), and encourage practical coordination of geographically distributed operations (Meyer et al., 2023). These skills allow companies to reduce the costs (Pan et al., 2022) and risks (Mohamed et al., 2024) associated with entering foreign markets, while simultaneously accelerating decisions and improving their responsibility for regional market conditions. Digitalization also

increases scalability and flexibility in the international delivery of business models that support efficient and agile internationalization processes (da Fonseca et al., 2023). Based on these reasons, the researcher suggests the fourth hypothesis, which follows:

H4: Digitalization has a significant impact on the international performance.

Business Model Innovation and International Performance

Business Model Innovation (BMI) is a key driver of international performance, as companies can unwind the mechanisms of value creation (Bouncken et al., 2015), delivery and detection according to the complexity of the global market (Bouncken et al., 2015). Business model innovations allow businesses to focus more on the needs and preferences of different customer segments(D. Yang et al., 2020), adapt to local regulatory (Stewart, 2010) and cultural conditions (Warner & Wäger, 2019), differentiating from their competitors (Valiušis, 2025). This strategic flexibility improves the ability of companies to effectively enter and work in foreign markets (Chiara, 2021), leading to improved customer satisfaction (Foltean & Glovaţchi, 2021), increased market share and profitability (Jin et al., 2022). Therefore, business model innovation plays a key role in enabling continued international success in a dynamic and competitive global environment (Heubeck & Meckl, 2022).

In the context of the international market, business model innovation plays a critical role in improving adaptability and response capability (Zehir & Karaca, 2023). Research shows that firms with innovative business models are better positioned to overcome institutional and cultural obstacles in foreign environments. By adapting offers and operating strategies to meet the unique requirements of various markets, these companies can achieve greater differentiation and customer relevance (Syed Alwi et al., 2022). BMI not only contributes to overseas market penetration and improved customer loyalty (Dimyati, 2011), but also has excellent overall performance in global sectors (De Chiara, 2021; Lu et al., 2024; Zehir & Karaca, 2023). Based on these reasons, the researcher suggests the fifth hypothesis, which follows:

H5: Business model innovation has a significant impact on the international performance.

The Mediating Role of the Internationalization Process

The internationalization process serves as an important mediation mechanism that combines business model innovation with digitalization and improved international services (Nunes et al., 2024). Business model innovation and digitalization are independent and valuable from one another, but they are independent and valuable from one another, but have greater effect when channelled by a performance internationalization process. In particular, business model innovation provide strategic flexibility, while digital skills provide surgical efficiency and market information (Hosseinian Dastjerdi & Tumer, 2024). Both allow for a smoother start and adaptation to foreign markets. The internationalization process allows companies to use these skills in a structured and sophisticated way to build a global presence (Nunes et al., 2024), address market-specific challenges and improve their strategies according to international requirements (Fernandes et al., 2020). The effectiveness of business model innovation and digitalization in performance of superior international performance is greatly increased by the role of mediation in the internationalization process. Based on these reasons, the researcher suggests the last two hypothesises, which follows:

H6: Internationalization proceed mediate the relationship between digitalization through international performance.

H7: Internationalization proceed mediate the relationship between Business model innovation through international performance.

3. Method

To test the relevance of the discussion in the literature review section above with the current situation, we need concept of internationalization process, international performance, business model innovation

and digitalization, that enable us to develop a model that can be operationalized. Each construct in the measurement model, including Business Model Innovation (BMI) and Digitalization, was operationalized using proven indicators from previous empirical studies. Indicators for BMI were changed from Clauss (2017) to reflect changes in value production, delivery, and capture strategies. Digitalization was assessed using constructs derived from Verhoef et al. (2021), which represent technological integration in operational and strategic dimensions. All items were assessed using a five-point Likert scale. Prior to analysis, the dataset underwent a thorough data cleansing process that included looking for missing values, outliers, and inconsistent responses.

As already described above, the concept of internationalization process applies the concept developed by Johanson & Vahlne (1977, 1990, 2009). Often referred as Uppsala Model, this concept of internationalization process is understood as a process whereby the firms steadily expand their global engagement, by gradually conduct acquisition, integration and use of knowledge about foreign markets and operations, and incrementally increasing commitments to foreign markets (Johanson and Vahlne, 1977). Furthermore, it is also be said that the process is distinguished by an interaction between, the development of know-how of overseas markets and process and, a rising commitment of resources to international markets on the other side (Johanson and Vahlne, 1990). According to this fundamental principle, the internationalization process is thought to be made up of two primary subprocesses: experiential learning and commitment building (Salata, 2019).

International performance that will act as dependent variable, will be operationalized using concept studied by Hult et. Al., (2008). In this study, Hult concluded that financial, operational and overall effectiveness aspects are the three main components in looking at international performance. In accordance with Hult et al., Gerschewski et al. (2015) develop components of global performance that encompass financial, operational, and perceived success.

Foss and Saebi (2016) describe a BMI as designed, unique, and significant modification to the core pieces of a company's BM and/or the structure that connect these elements. Following that idea this study will adhere to Osterwalder and Pigneur's (2005) and Bhatti et. al. (2021), that explain the concept of BMI as a continuation of modification ranging from gradual to drastic alterations in key BM variables i.e. product, customer interface, infrastructure management, and financial aspect.

This study will use an approach called DIGROW, a company's digital maturity measurement framework as the concept of digitalization in the model development. The DIGROW framework consists of the following four steps in the assessment process of digitalization i.e.: the ability to sense the potential for digital-based growth, the ability to develop strategies and mentality for digital-based growth, the ability to seize opportunities for digital-based development, and the ability to manage resources within the framework of the digital transformation process (North et al., 2019).

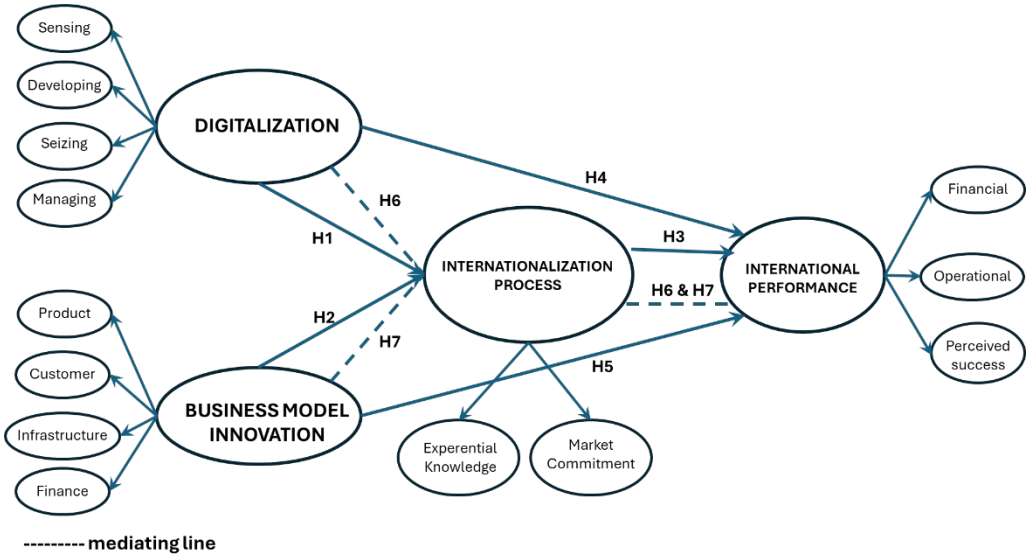

Fig.1: The Framework

This study uses quantitative methods. Data collection methods were performed by distribution surveys, while the sampling technique was carried out through distributing questionnaires.

To ensure the relevance of the data to the context of internationalization, the respondents in this study are Indonesian SMEs (Small, and Medium Enterprises) that have engaged in export activities. Recent data indicates that 4 – 5% of 65.5 million Indonesian SMEs are currently participates in export activities (Ministry of Trade, 2023). This translates approximately to 2.6 – 3.3 million SMEs export nationwide. However, the majority of these exporting SMEs are concentrated in Java, which is accounted for about 60% of Indonesia total SMEs export or an estimated 1.6 – 2.0 million SMEs (BPS, 2023). Based on this, the survey was conducted in Java (East Java, Central Java and West Java). To ensure scientific rigor and representativeness, this study used a stratified random sampling procedure. The sampling frame included Indonesian SMEs engaged in export activities, organized by geographic region and industry sector. The sample distribution was proportionally stratified throughout three provinces on the island of Java—East Java (33,3%), Central Java (33,3%), and West Java (33,4%), which together account for the bulk of Indonesian SME exporters. Data was collected over a two-month period, from March to April 2025, through a combination of online surveys and in-person interviews with SME managers or owners. This strategy improves the study's external validity and ensures that the data reflect a diverse range of industry contexts and geographical dynamics.

There are 354 respondents who answer the questionnaire, however, after data cleansing process, and considering the complexity of the proposed model as well as the number of indicators involved, a total 200 respondents were selected as the sample size. 200 sample size in this case is still considered adequate as Hair Jr et al. (2021) states that in most research contexts, a minimum sample size between 100-200 is generally considered sufficient. In conclusion, this sample size meets the recommended threshold to ensure the robustness, validity and reliability of the statistical analysis. To ensure that the sample size was enough, a priori power analysis was performed using G*Power version 3.1.9.7. To identify medium effect sizes ($f^2 = 0.15$) with a power level of 80% and a significance level (α) of 0.05 in a multiple regression model, at least 138 observations are needed. With a final usable sample of 200 SMEs, this study exceeds the needed threshold, ensuring adequate statistical power for hypothesis testing and path analysis within the PLS-SEM framework. This argument increases the methodological credibility and validates the study's empirical findings.

Given the reliance on self-reported survey data, steps were taken to mitigate common method bias (CMB), which is a common concern in cross-sectional studies (Narzary & Palo, 2020). Several procedural remedies were implemented, including temporal separation between the measurement of

independent and dependent variables and the use of reverse-coded items to reduce response pattern biases. In addition, Harman's single-factor test was conducted to statistically assess the extent of common method variance. The results showed that no single factor accounted for more than 32% of the total variance, indicating that CMB was not a significant issue in this study. These strategies enhance the internal validity and reliability of the data collected. To analyse the data this study uses Structural Equation Modelling (SEM), that enables researchers to examine the interrelationships between variables and evaluate theorized correlations between constructs. The type of SEM that will be applied in this study is Partial Leas Square Structure Equation Modelling (PLS-SEM). One of the primary advantages of PLS-SEM lies in its minimal demands regarding data distribution and sample size. PLS-SEM is a variance-based approach that can produce reliable estimates with smaller samples and non-normal data (Hair et al., 2011). This characteristic renders SEM-PLS especially appropriate for early-stage theory development, pilot studies, and research conducted in contexts where data collection is constrained.

4. Results

Descriptive Analysis

The descriptive statistics provide an overview of the basic characteristics of the SMEs included in this study. The average firm age was 8.3 years, with a standard deviation of 4.2, indicating a respectable level of maturity across the board. In terms of foreign experience, 67% of the enterprises reported having been involved in export activities for less than five years, indicating that the majority of SMEs are still in the early phases of internationalization. Importantly, 100% of the enterprises in the sample engaged in export activities, indicating that the study was especially aimed at export-oriented SMEs. These factors are critical in contextualizing the study's focus on how digitalization and business model innovation affect international performance, particularly among young enterprises entering global markets.

Validity and Reliability Test

Figure 1 and Table 1, shows the validity and reliability of indicators used to measure the variables. Some indicators are dropped to increase the validity and reliability of the model.

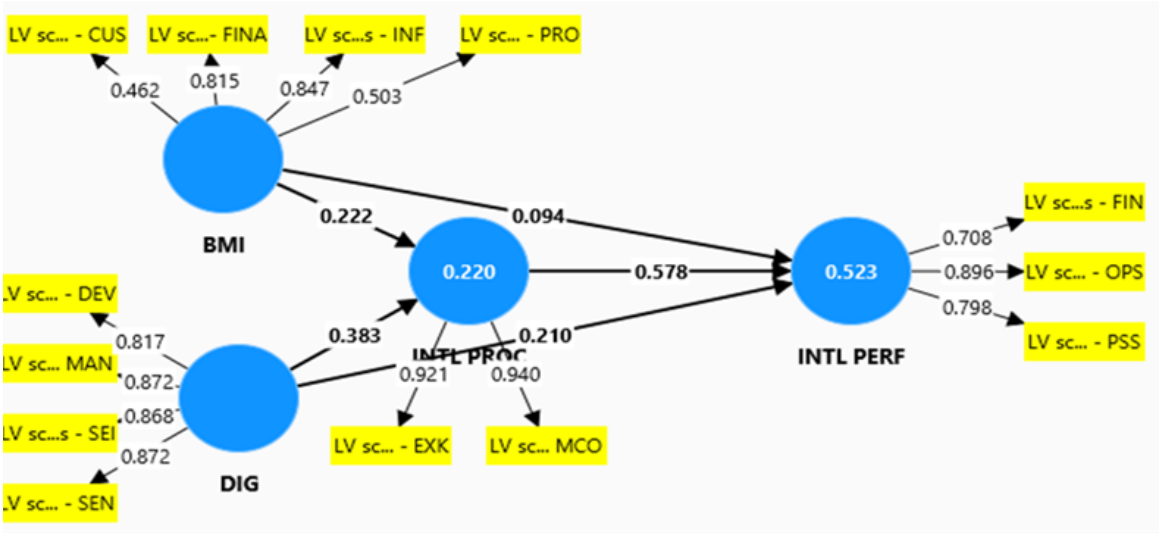

Fig.2: Loading Factor

Figure 2 depicts the structural model path diagram produced from the PLS-SEM analysis, which shows the linkages between Business Model Innovation (BMI), Digitalization (DIG), the Internationalization Process (INTL PROC), and International Performance (INTL PERF). To help readers understand, the diagram provides standardized path coefficients along the arrows, and each latent construct is paired

with its manifest indicators. The model distinguishes between direct impacts (e.g., DIG to INTL PERF: β = 0.431) and indirect effects (e.g., DIG → INTL PROC → INTL PERF: β = 0.221), allowing for a better understanding of the internationalization process's mediation role.

Table 1. Reliability Test

	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
BMI	0.666	0.791	0.762	0.462
DIG	0.882	0.917	0.917	0.735
INTL PERF	0.723	0.747	0.845	0.647
INTL PROC	0.846	0.857	0.928	0.866

Furthermore, the summary in Table 2 shows that all construct, consist of Business model innovation, Digitalization, Internationalization Processes, and International Performance, meet criteria for validity and reliability. The outer loading for individual dimensions ranges from 0.6 to 0.9, indicating acceptable indicator reliability (Hair Jr et al., 2021). Cronbach's alpha and Composite Reliability (CR) values fall within acceptable thresholds (>0.6), and the Average Variance Value (AVE) value meets the minimum requirement of 0.5, confirming the convergent validity. Overall, the results support the measurement model being valid and reliable for further analysis.

Table 2. Outer Loading, Validity and Reliability

Variable	Dimension	Outer Loading	Cronbach Alpha	CR	AVE	Summary
Business Model Innovation	Product	0.7	0,7	0,8	0,5	Valid & Reliable
	Customer Interface	0.6				Valid & Reliable
	Infrastructure Management	0.8				Valid & Reliable
	Financial Aspect	0.6				Valid & Reliable
Digitalization	Sensing Digitally Enabled Growth Potential	0.8	0,9	0,9	0,7	Valid & Reliable
	Develop Digitally Enabled Growth Str & Mindset	0.9				Valid & Reliable
	Seizing Digitally Enabled Growth Potential	0.8				Valid & Reliable
	Managing Resources for Digital Trans	0.9				Valid & Reliable
Internationalization Process	Experiential Knowledge	0.8	0,7	0,8	0,7	Valid & Reliable
	Market Commitment	0.9				Valid & Reliable
International Performance	Financial	0.7	0,9	0,9	0,9	Valid & Reliable
	Operational	0.8				Valid & Reliable
	Perceived Succes	0.9				Valid & Reliable

Model fit indices were generated to ensure that the suggested structural model was adequate in general. The structural model fit was acceptable, with a Standardized Root Mean Square Residual (SRMR) of 0.065 and a Normed Fit Index (NFI) of 0.79, both falling within recommended limits. Furthermore, the model explained a significant percentage of the variance in international performance, with a R^2 value

of 0.67. These indices confirm the PLS-SEM model's robustness and the validity of the hypothesized interactions within the structural framework.

Hypotheses Test

Hypotheses testing is conducted using SmartPLS 4.0. Figure 3 shows path coefficients and P-value of each relationship, while Table 4, summarize the relationship between variables.

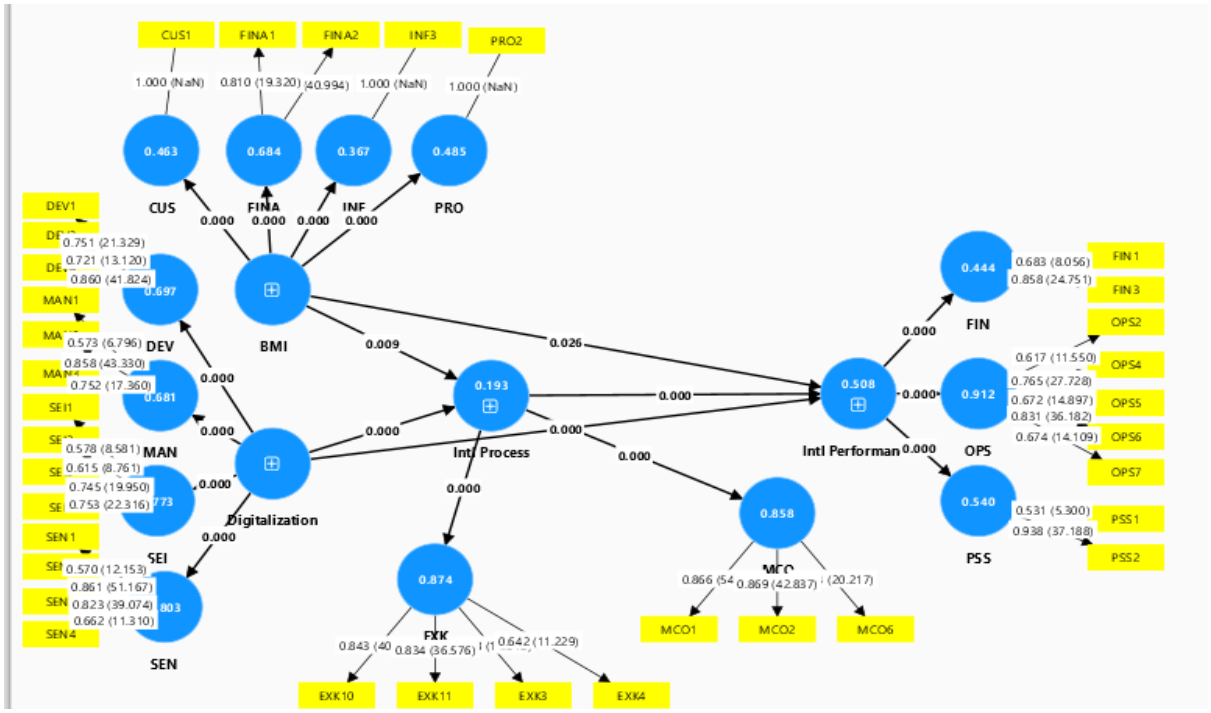

Fig.3: Path Coefficient and P-Value

Table 4. Hypothesis Summary

Hypothesis		Path Coeff	T Value	P Value	Summary	
H1	**BMI -> Internationalization Process**	0.222	3.426	0.001	Significant+	Accept H1
H2	**Digitalization -> Internationalization Process**	0.383	4.928	0.000	Significant+	Accept H2
H3	**Internationalization Process ->International Performance**	0.578	10.684	0.000	Significant+	Accept H3
H4	**BMI -> International Performance**	0.222	2.007	0.000	Significant+	Accept H5
H5	**Digitalization -> International Performance**	0.431	4.495	0.000	Significant+	Accept H5
H6	**BMI -> Internationalization Process ->International Performance**	0.128	3.164	0.002	Significant+	Accept H6
H7	**Digitalization -> Internationalization Process ->International Performance**	0.221	4.694	0.000	Significant+	Accept H7

Refer to the result shown in Table 4, all direct effects between the primary constructs show statistical significance. This is shown by T-value greater than or equal to 1.645 and P-value less than 0.05.

Beyond the statistical significance of path coefficients, this study also reports effect sizes to enhance understanding of the practical relevance of each relationship. The effect size (f^2) for digitalization on international performance was 0.23, indicating a medium practical impact. In contrast, the effect size of business model innovation on international performance was smaller at 0.08, suggesting a modest contribution. These values demonstrate that, while both constructs significantly affect international performance, digitalization plays a more dominant role in driving cross-border outcomes for SMEs.

5. Discussion

The findings contribute to the international business literature by broadening the theoretical scope of the Uppsala Model (B. Jin & Jung, 2016) in the context of digital transformation. The concept initially stressed the steady building of experiential knowledge through incremental internationalization. This study shows that digital skills can speed experience learning, allowing SMEs to skip some traditional stages and quickly enter and adapt to international markets. This challenges the traditional linear view of internationalization and proposes a digitally driven method in emerging markets. Furthermore, by basing this study on the resource-based view (Barney et al., 2001)and dynamic capabilities theory (Teece et al., 1997), the findings validate BMI and digitalization as critical dynamic capabilities that reconfigure resources and capabilities to achieve sustained competitive advantage in international settings.

The relationship between Business model innovation (BMI) and Internationalization Process (H1) shows that BMI has strong effect on Internationalization process (β=0.222, t=3.426, p=0.001). This is in line with the finding from the study by Cavallo et al. (2019) which indicate that major adjustments and revisions to the company's business strategy are necessary for an effective Internationalization process. The finding also support the research of Krenn et al. (2024) that highlighted the role of restructuring business models in adapting to the successful of international initiatives. In the case of Indonesian SMEs export, this finding is inlined with the fact that many Indonesian SMEs export are benefiting from the implementation of strategy such as shifting the sales channel to online channel, or applying new process in designing product. These new business models are able to increase the confidence of SMEs to commit more on international market.

Digitalization also has significant impact on Internationalization process (H2) (β=0.383, t=4.928, p=0.000). This finding supports the study by Herve et al (2020) who shows that the interaction between the digitalization process and the internationalization process can be traced back to the desire of companies involved in internationalization to better manage costs, access capabilities, resources and competencies; market knowledge; distance and location; relationship between competencies; and partnership network. In Indonesia, as surveyed by Deloitte (2015) 64% of Indonesia SMEs have capability of doing online business activities in various level, 37% has the capability to do basic online business activities, 18% are able to do intermediate online business activities, and remaining 9% has reached capability of doing advance online business activities. This will significantly improve their capability in gathering market knowledge, building partnership network, and improving other aspect of internationalization process.

As expected, the Internationalization process has a significant impact on International Performance (H3) with a path coefficient of 0.578, a t-value of 10.684, and a P-value of 0,000. This finding supports the Learning Theory from Johanson & Vahlne (1977), which explain that internationalization is a gradual process in which experimental knowledge accumulated by managers will gradually reduce the physical distance between countries, as indicated by differences in language, culture, political system, etc. As a result, there has been an improvement in the flow of information between companies and foreign markets. By expanding their level of internationalization, businesses may reap financial rewards from market exploration, economies of scale, and the value of first-hand experience (Li, 2001). In light of these benefits of internationalization, it is anticipated that they will result in improved business performance (Olmoz and Diez-Vial, 2015).

These results also support this research central hypothesis that both BMI and Digitalization have a positive impact on the Internationalization process, which then improves International Performance. In case of Indonesian SMEs export this finding is supported by the increasing number of SMEs export that use new business model, especially those benefiting from digitalization to increase their international market coverage, thus increasing their sales. Shopee, an e-commerce platform, who run Program Ekspor Shopee, reported that they are now have 20 million products registered in the program, which can be purchased in regions such as South East Asia, East Asia and Latin America.

The results also show that both BMI and digitalization have a statistically significant direct effect on international performance. The path coefficient for BMI (H4) is relatively moderate (β=0.222), but statistically significant (t=2.007, p=0.000), indicating a meaningful but modest effect. Similarly, digitalization (H5) shows a somewhat strong direct impact on international performance (β=0.431, t=4.495, p=0.000). These results highlight that, although the internationalization process plays a more dominant role, the more direct impact of digitalization on BMI and international performance is relevant and positive. The link between business model innovation (BMI) and digitalization of digital performance was well documented in previous studies highlighting its strategic role in improving the competitiveness of companies in digital environments. Several studies have confirmed that BMI allows companies to reconstruct value creation and delivery mechanisms in response to digital disruptions. Digitization has been shown to drive operational efficiency (Elsharnouby et al., 2024), customer loyalty (Fangqi et al., 2023), and data-controlled decision-making (Meyer et al., 2023). All of these contribute to improving digital outcomes. These results show that both structures are important enablers of digital performance, especially in international contexts where mobility and technical adaptation are essential. The key effects of BMI and digitization are strongly directed at international performance in this study using theoretical and empirical literature. This finding also implies that, in the case of Indonesian SMEs, digital readiness and adoption may provide more immediate and quantitative benefits than business model reform alone. One possible explanation is that infrastructure restrictions and institutional contexts in emerging economies favor digital platforms, which offer low-cost, scalable solutions with visible short-term advantages, whereas BMI frequently necessitates broader organizational transformation and market testing. While both definitions are significant, digitalization tends to provide faster returns, particularly in resource-constrained contexts. This finding begs for more investigation into the conditions in which BMI is more or less effective in driving international results.

Hypotheses H6 and H7 examine the mediating role of the Internationalization process between BMI and Digitalization in International Performance. Both hypotheses are supported with significant indirect effects at H6 (β=0.128, t=3.164, p=0.002) and H7 (β=0.221, t=4.694, p=0.000), indicating that the Internationalization process effectively communicates the relationship between strategic disruption and performance. These results reinforce the critical role of the internationalization process as a channel in which strategic initiatives such as BMI and digitalization affect performance at the enterprise level in an international context. In contrast to the expectation that BMI and Digitization are the main drivers of International Performance, this study shows that the Internationalization process plays a more central role in mediating its effectiveness. The significant indirect effects of the Internationalization process reinforce the importance of this channel proposed in the dynamic ability literature (Macieira da Costa, 2018). These results indicate that a single introduction of innovation or digital tools is not sufficient without strategic use throughout the Internationalization process.

Collinearity diagnosis using the Variance Inflation Factor (VIF) indicates that all values are less than 5. This confirmed the lack of multicollinearity between exogenous variables and tested the structural integrity of the model (Hair Jr et al., 2021; Kwong & Wong, 2019). Out of the 7 hypotheses proposed, all hypothesis have significant positive relationships. These results indicate that further testing is needed to understand the underlying drivers and contextual factors that contribute to these counterintuitive outcomes. From a practical standpoint, this pattern is attached to many small and medium-sized enterprises, particularly ambitious markets where the ability to undertake international investments and innovative models overseas is effectively determined (Lu et al., 2024). Field observations from Southeast Asia's export-oriented SMEs confirm that companies can introduce progressive technologies and new business models, but performance outcomes are uneven when not supported by structured internationalization strategies and ecosystem partnerships (Ismail & Isa, 2021). Statistical findings are robust, reflecting actual complexity and highlighting the importance of process mechanisms for implementing strategic initiatives on measurable performance outcomes (Bhatti et al., 2021). This suggests that future research must examine context-related moderators such as firm size, industry

dynamics, and international experience to further narrow down their understanding of these relationships.

Practically speaking, these findings have significant consequences for both SMEs and policymakers. For SME leaders, the report emphasizes the need of emphasizing digital capability development as a basis for international expansion, such as investing in digital marketing, e-commerce platforms, and CRM systems. Instead of making dangerous or resource-intensive adjustments to their whole company model all at once, SMEs can use digital tools to join new markets more effectively and collect real-time data. The findings suggest that policymakers and SME support institutions should shift their attention from generic business model consultancy to personalized digital training and infrastructure development. Programs that encourage the use of digital tools, cross-border e-commerce participation, and international digital networking are more likely to result in quick improvements in export performance.

6. Conclusion

This study makes three significant theoretical contributions to the fields of international business and SME research. First, it expands on classical internationalization theory (e.g., the Uppsala Model) by demonstrating that in today's digital economy, the accumulation of experiential knowledge and market commitment can be accelerated through digitalization, calling into question the traditional concept of gradual internationalization. Second, it empirically reveals the partial mediation function of the internationalization process, providing a more nuanced view of how strategic objectives translate into performance outcomes, particularly in developing market SMEs. Third, the findings provide empirical support for the dynamic capabilities concept by proving that BMI and digitalization are strategic competencies that allow Indonesian SMEs to reconfigure their internal resources and navigate international expansion efficiently.

This study examines the impact of business model innovation and digitalization on international performance of Indonesia SMEs, where the Internationalization process serves as a mediating factor. The results show that both business model innovation and digitalization significantly improve the ability of Indonesian SMEs to expand into international markets. Furthermore, this study also concludes that the internationalization process plays a critical role in improving actual performance in global fields. Business model innovation and digitalization indeed directly affect international performance, but when its effects are channel through the internationalization process, its true strengths are observed. This underscores how important it is to build a structured path for international expansion supported by strategic innovation and digital readiness.

Those results emphasize the importance of conducting business model innovation and digitalization as part of the efforts of business to improve international performance.

Business, especially SMEs exports are suggested to continuously modify their key business model variables. SMEs export can choose whether to modify their product, their customer segment, or internally develop new mechanism or process in doing the business, or creating a new combination of cost and revenue in their international operation. SMEs can modify the components of their business model, either incrementally or drastically, whereby incremental BMI is defined as a modest alteration that alters one or more existing BM components (Aspara et al. 2010), while radical BMI refers to a simultaneous change in the majority of BM components and is regarded as a change of great significance (Biloslavo et al, 2022).

SMEs exports also are suggested to implement digitalization as part of the strategy to increase international performance. The capability of sensing digitally enable growth potential should be improved by understanding digital customer needs, or sensing technology driven opportunities. SMEs export should also empower all of the employees to experiment with digital initiatives in the company in order to develop a digitally enabled growth strategy and mindset. These will lead the business to be

able to have a broader digital presence in the market, create more digitally interaction with customer, in order to seize digitally enabled growth potentials.

Despite the valuable insights, many limitations should be recognized in order to interpret the findings. First, the cross-sectional structure of the data limits the capacity to draw causal inferences about the correlations between the variables. Second, the study's focus on a particular rising market—Indonesia—may limit the findings' applicability to other national or regional situations. Third, even with methodological safeguards in place, the use of self-reported survey data may introduce possible response bias. Finally, the study focuses solely on export-oriented SMEs, disregarding other modalities of internationalization such as joint ventures or licensing, which may have different strategic dynamics. These limitations, although not detracting from the findings, provide avenues for future research.

According to the result of this study, to amplify the impact to the international performance, the initiatives in business model innovation or digitalization should be channeled through mediation of international process i.e.: an interaction between, the development of know-how of overseas markets and process and, a rising commitment of resources to international markets on the other side (Johanson and Vahlne, 1990). Thus, managers, leadership in SMEs, should dedicate the initiative of continuous modification of elements in business model and digitalization strategy to, first, grow the experiential knowledge of the SMEs (personal and organization), as well as to continuously increase their market commitment. For instance, SMEs export can modify its infrastructure in its business model to include digital communication infrastructure that will enable them to improve their knowledge regarding the character of international market or enable them to learn about the regulation in destination market. On the digitalization side, for example, when SMEs increase their digital presence in international market, this can lead to increase also in the market commitment aspect of internationalization process. At the end of the day, this process, will inevitably increase international performance of the SMEs export.

Building on these findings, future study should take numerous avenues. First, longitudinal studies should be done to better understand the dynamic nature of BMI, digitalization, and internationalization over time, as well as to identify causal relationships. Second, comparative studies of different emerging markets or developed and developing economies may provide more insight into the contextual influences on SME internationalization efforts. Third, future research might include moderating variables such as industrial sector, business size, and the presence of government support programs to better understand the conditions under which BMI and digitalization work best. Finally, qualitative research into the decision-making logic that underpins international strategy formulation in SMEs would provide rich, contextual insight to supplement the statistical findings of this study.

Finally, this research highlights the need for SMEs export to not only to embrace the need of initiatives in business model innovation and digitalization in order to improve international performance, but also to strategically manage the process by involving internationalization process as mediating factor. For managers especially, and business decision makers in general, these findings demonstrate the importance of a well-integrated approach strategy covering business model innovation, digitalization and international process to create competitive advantages and eventually achieving objectives of internationalization.

References

Agnihotri, A., Bhattacharya, S., Yannopoulou, N., & Thrassou, A. (2023). Foreign market entry modes for servitization under diverse macroenvironmental conditions: taxonomy and propositions. *International Marketing Review*, *40*(4), 561–584. https://doi.org/10.1108/IMR-09-2021-0287

Apriani, A., Wahdiniawati, S. A., & Perkasa, D. H. (2024). Digital Transformation of SMEs : Boosting Online Shopping Interest through E-Commerce Adoption. *Dinasti International Journal of Digital Business Management*, *5*(3), 595–611.

Bao, H., Wang, C., & Tao, R. (2021). Examining the effects of governmental networking with environmental turbulence on the geographic searching of business model innovation generations. *Journal of Knowledge Management*, *25*(1), 157–174. https://doi.org/10.1108/JKM-06-2020-0484

Barney, J., Wright, M., & Ketchen, D. J. (2001). The resource-based view of the firm: Ten years after 1991. *Journal of Management*, *27*(6), 625–641. https://doi.org/10.1177/014920630102700601

Bhatti, A., Malik, H., Kamal, A. Z., Aamir, A., Alaali, L. A., & Ullah, Z. (2021). Much- needed business digital transformation through big data, internet of things and blockchain capabilities: implications for strategic performance in telecommunication sector. *Business Process Management Journal*, *27*(6), 1854–1873. https://doi.org/10.1108/BPMJ-12-2020-0553

Bouncken, R. B., Muench, M., & Kraus, S. (2015). Born Globals: Investigating The Influence Of Their Business Models On Rapid Internationalization. *International Business & Economics Research Journal (IBER)*, *14*(2), 247. https://doi.org/10.19030/iber.v14i2.9109

Bui, D., Cuong, X., Khanh, T., Khoa, B. T., Dao, L., & Thanh, N. (2025). *Digital Transformation and Sustainable Tourism : An Integrated Model for Heritage Destination Revisitation in the Service Innovation Era*. 14–27.

Chen, C., Pan, J., & Zhang, F. (2025). Impact of digital capability on business model innovation: Does political connections matter? *Asia Pacific Journal of Marketing and Logistics*, *ahead-of-p*(ahead-of-print). https://doi.org/10.1108/APJML-10-2023-1048

Cho, T.-S., Lung, Y.-C., Jwo, D.-J., & Ahmad, H. (2023). MOOCS Business Model Innovation in Indonesian Perspective: Comparison of IndonesiaX and HarukaEdu. *The International Journal of Organizational Innovation*, *16*(2), 2023–1329. https://www.ijoi-online.org/

da Fonseca, L. N. M., Kogut, C. S., & da Rocha, A. (2023). Anywhere in the World? The Internationalization of Small Entrepreneurial Ventures using a Social Media Platform. *Management International Review*, *63*(4), 673–696. https://doi.org/10.1007/s11575-023-00510-8

De Chiara, A. (2021). Sustainable business model innovation vs. "made in" for international performance of italian food companies. *Agriculture (Switzerland)*, *11*(1), 1–17. https://doi.org/10.3390/agriculture11010017

Dimyati, M. (2011). Theoretical Testing on Service Quality and Product Innovation of Small-Micro Credit Banks (a Case Study). *Journal of Economics, Business, and Accountancy | Ventura*, *14*(3), 225–238. https://doi.org/10.14414/jebav.v14i3.50

Dung, L. T., & Dung, T. T. H. (2024). Businesses model innovation: a key role in the internationalisation of SMEs in the era of digitalisation. *Journal of Innovation and Entrepreneurship*, *13*(1). https://doi.org/10.1186/s13731-024-00391-7

Dutot, V., & Bergeron, F. (2016). From strategic orientation to social media orientation: Improving SMEs' performance on social media. *Journal of Small Business and Enterprise Development*, *23*(4), 1165–1190. https://doi.org/10.1108/JSBED-11-2015-0160

Elsharnouby, T. H., Elbanna, S., Farha, A. A., & Mauji, N. (2024). Exploring critical internal enablers to SMEs export performance: evidence from Qatar. *Humanities and Social Sciences Communications*, *11*(1). https://doi.org/10.1057/s41599-024-02845-5

Evers, N., Ojala, A., Sousa, C. M. P., & Criado-Rialp, A. (2023). Unraveling business model innovation in firm internationalization: A systematic literature review and future research agenda. *Journal of Business Research*, *158*(January), 113659. https://doi.org/10.1016/j.jbusres.2023.113659

Fangqi, D., Irfan, M., & Baloch, Z. (2023). *Revolutionizing quality performance through digitization , technology management , and environmental management : a cutting-edge PLS-SEM model analysis*

with organizational agility as mediator and culture as moderator. *August*, 1–18. https://doi.org/10.3389/fenvs.2023.1169145

Fernandes, C. I. M. A. S., Ferreira, J. J. M., Lobo, C. A., & Raposo, M. (2020). The impact of market orientation on the internationalisation of SMEs. *Review of International Business and Strategy*, *30*(1), 123–143. https://doi.org/10.1108/RIBS-09-2019-0120

Foltean, F. S., & Glovaţchi, B. (2021). Business Model Innovation For Iot Solutions: An Exploratory Study Of Strategic Factors And Expected Outcomes. *Amfiteatru Economic*, *23*(57), 392–411. https://doi.org/10.24818/EA/2021/57/392

Ghotbifar, F., Marjani, M. R., & Ramazani, A. (2017). Identifying and assessing the factors affecting skill gap in digital marketing in communication industry companies. *Independent Journal of Management & Production*, *8*(1), 1–14. https://doi.org/10.14807/ijmp.v8i1.507

Gjorevska, E. (2023). Entrepreneurial orientation and performance analysis at the private healthcare sector: The impact of limitation of resources. *International Journal of Business Ecosystem & Strategy*, *5*(3), 80–95.

Gounaris, S. P., & Avlonitis, G. J. (2001). Market orientation development: A comparison of industrial vs consumer goods companies. *Journal of Business and Industrial Marketing*, *16*(5), 354–381. https://doi.org/10.1108/EUM0000000005779

Hair Jr, J. F., Hult, G. T. M., Ringle, C. M., Sarstedt, M., Danks, N. P., & Ray, S. (2021). Partial least squares structural equation modeling (PLS-SEM) using R: A workbook. In *Springer*. Springer.

Hanandeh, A., Altaher, A. M., Halim, M., Rezk, W., Mahfoudh, N., Hammouri, Q., & Darawsheh, S. R. (2023). The effects of digital transformation, digital leadership, and entrepreneurial motivation on business decision making and business process performance: Evidence from greater Amman municipality. *International Journal of Data and Network Science*, *7*(2), 575–582. https://doi.org/10.5267/j.ijdns.2023.3.014

Heubeck, T., & Meckl, R. (2022). Antecedents to cognitive business model evaluation: a dynamic managerial capabilities perspective. *Review of Managerial Science*, *16*(8), 2441–2466. https://doi.org/10.1007/s11846-021-00503-7

Hosseinian Dastjerdi, A., & Tumer, M. (2024). The Effects of Strategic Orientation on Mass Customization Capacity in Iran: The Mediating Role of Intellectual Capital. *SAGE Open*, *14*(3), 1–18. https://doi.org/10.1177/21582440241264447

Huang, W., & Ichikohji, T. (2024). How dynamic capabilities enable Chinese SMEs to survive and thrive during COVID-19: Exploring the mediating role of business model innovation. *PLoS ONE*, *19*(5 May), 1–27. https://doi.org/10.1371/journal.pone.0304471

Ismail, M. D., & Isa, M. A. M. (2021). Export Performance of SMEs in Emerging Markets: The Role of Market Orientation, Learning and Trust. *The South East Asian Journal of Management*, *15*(1), 112–128. https://doi.org/10.21002/seam.v15i1.13072

Jin, B., & Jung, S. (2016). Toward a deeper understanding of the roles of personal and business networks and market knowledge in SMEs' international performance. *Journal of Small Business and Enterprise Development*, *23*(3), 812–830. https://doi.org/10.1108/JSBED-08-2015-0104

Jin, Y., Ji, S., Liu, L., & Wang, W. (2022). Business model innovation canvas: a visual business model innovation model. *European Journal of Innovation Management*, *25*(5), 1469–1493. https://doi.org/10.1108/EJIM-02-2021-0079

Kc, R., Karki, D., & Devkota, N. (2024). Technological Evolution, Service Innovation, and Intraday Trading Adoption in Nepal's Stock Market: A Behavioral Approach. *Journal of Service, Innovation*

and Sustainable Development, 73–94. https://doi.org/10.33168/sisd.2024.0205

Khalaf, A., ASHOUR, A., & Abdel Rady, H. (2023). Towards Digital Transformation Techniques Application at the Egyptian Airports. *Minia Journal of Tourism and Hospitality Research MJTHR*, *15*(1), 32–52. https://doi.org/10.21608/mjthr.2022.169140.1068

Kolagar, M., Reim, W., Parida, V., & Sjödin, D. (2022). Digital servitization strategies for SME internationalization: the interplay between digital service maturity and ecosystem involvement. *Journal of Service Management*, *33*(1), 143–162. https://doi.org/10.1108/JOSM-11-2020-0428

Krenn, M. L., Bortoluzzi, G., & Sternad, D. (2024). Business model innovation and the success of internationalization initiatives: the moderating effects of psychic distance and international experience. *Journal of Small Business and Enterprise Development*, *31*(7), 1357–1377. https://doi.org/10.1108/JSBED-08-2023-0396

Kwong, & Wong. (2019). *Mastering Partial Least Squares Structural Equation Modelling (PLS-SEM) with SmartPLS in 38 Hours* (Issue March). Universe.

Li, P., Chen, Y., & Guo, X. (2025). Digital transformation and supply chain resilience. *International Review of Economics and Finance*, *99*(2025), 1–17. https://doi.org/10.1016/j.iref.2025.104033

Lu, C., Qi, Y., Hao, S., & Yu, B. (2024). How and when domestic and international collaboration networks influence innovation performance of SMEs: evidence from China. *Business Process Management Journal*, *30*(2), 435–462. https://doi.org/10.1108/BPMJ-05-2023-0336

Lwesya, F., & Mwakalobo, A. B. S. (2023). Frontiers in microfinance research for small and medium enterprises (SMEs) and microfinance institutions (MFIs): a bibliometric analysis. *Future Business Journal*, *9*(1), 1–18. https://doi.org/10.1186/s43093-023-00195-3

Macieira da Costa, E. S. (2018). Collaboration and information management in the internationalisation of SMEs: a case in industrial business associations. *Industrial Engineering and Management*, *PhD*, 191.

Merín-Rodrigáñez, J., Alegre, J., & Dasí, À. (2025). International entrepreneurship in innovative SMEs: Examining the connection between CEOs' dynamic managerial capabilities, business model innovation and export performance. *International Business Review*, *34*(2025), 1–13. https://doi.org/10.1016/j.ibusrev.2024.102321

Meyer, K. E., Li, J., Brouthers, K. D., & Jean, R. J. '"Bryan."' (2023). International business in the digital age: Global strategies in a world of national institutions. *Journal of International Business Studies*, *54*(4), 577–598. https://doi.org/10.1057/s41267-023-00618-x

Mikhailova, O., & Olsen, P. I. (2016). Internationalization of an academic invention through successive science-business networks: The case of TAVI. In *Journal of International Entrepreneurship* (Vol. 14, Issue 3). Journal of International Entrepreneurship. https://doi.org/10.1007/s10843-016-0186-8

Mohamed, N. H., Khan, S., & Jagtap, S. (2024). Waste 4.0: transforming medical waste management through digitalization and automated segregation. *Discover Sustainability*, *5*(1). https://doi.org/10.1007/s43621-024-00593-9

Narzary, G., & Palo, S. (2020). Structural empowerment and organisational citizenship behaviour: The mediating–moderating effect of job satisfaction. *Personnel Review*, *49*(7), 1435–1449. https://doi.org/10.1108/PR-11-2019-0632

Nepal, P. (2025). *Women's Role in Advancing Digital Financial Inclusion: The Impact of Digital Awareness, Technology Trust, Curiosity and Motivation and Access to Digital Banking*. 25–47. https://doi.org/10.33168/JMCDE.

Nunes, M. P., Malagri, C. N. A., Steinbruch, F. K., Schreiber, D., & Damacena, C. (2024). The relation

between digital transformation and internationalization – a systematic literature review. *European Journal of Innovation Management*, *ahead-of-p*(ahead-of-print). https://doi.org/10.1108/EJIM-01-2024-0092

Oliveira-Dias, D., Kneipp, J. M., Bichueti, R. S., & Gomes, C. M. (2022). Fostering business model innovation for sustainability: a dynamic capabilities perspective. *Management Decision*, *60*(13), 105–129. https://doi.org/10.1108/MD-05-2021-0590

Pan, J., Lin, J., & Wang, S. (2022). a Delphi-Based Index System for Digital Transformation Capability of Retailers. *Journal of Business Economics and Management*, *23*(5), 1106–1132. https://doi.org/10.3846/jbem.2022.17441

Purbasari, R., Muttaqin, Z., & Silvya Sari, D. (2021). Digital Entrepreneurship in Pandemic Covid 19 Era: The Digital Entrepreneurial Ecosystem Framework. *Review of Integrative Business and Economics Research*, *10*(1), 114–135.

Stewart, L. (2010). The Impact of Regulation on Innovation in the United States: A Cross-Industry Literature Review. *Information Technology & Innovation Foundation*, *9*(1), 1–29.

Subedi, S. (2024). Analysis of Digital Information, Investors' Financial Knowledge, and Mindsets for Sustainable Investment in Emerging Investment Markets. *Journal of Service, Innovation and Sustainable Development*, *2023*, 149–175. https://doi.org/10.33168/sisd.2024.0109

Syed Alwi, S. F., Balmer, J. M. T., Stoian, M. C., & Kitchen, P. J. (2022). Introducing integrated hybrid communication: the nexus linking marketing communication and corporate communication. *Qualitative Market Research*, *25*(4), 405–432. https://doi.org/10.1108/QMR-09-2021-0123

Teece, D. J., Pisano, G., & Shuen, A. M. Y. (1997). Dynamic capabilities and strategic management. *Strategic Management Journal, 18*(7), 509–533.

Tewari, M., Banerjee, P., & De, S. (2019). Valuation effects of cultural disparity on cross border mergers: The evidence from India. *International Journal of Finance & Banking Studies (2147-4486)*, *8*(4), 21–40. https://doi.org/10.20525/ijfbs.v8i4.551

Valiušis, O. (2025). *Digitalization Modeling of Production Processes in Paper Packaging Sector Companies*. 67–76. https://doi.org/10.33168/JMCDE.

Wardaya, A., Sasmoko, S., So, I. G., & Bandur, A. (2019). Entrepreneurial orientation and digital technology capabilities in small and Medium-sized Enterprises (SMEs) in Indonesia. *International Journal of Recent Technology and Engineering*, *8*(1C2), 456–460.

Warner, K. S. R., & Wäger, M. (2019). Building dynamic capabilities for digital transformation: An ongoing process of strategic renewal. In *Long Range Planning* (Vol. 52, Issue 3). https://doi.org/10.1016/j.lrp.2018.12.001

Yang, D., Wei, Z., Shi, H., & Zhao, J. (2020). Market orientation, strategic flexibility and business model innovation. *Journal of Business and Industrial Marketing*, *35*(4), 771–784. https://doi.org/10.1108/JBIM-12-2018-0372

Yang, Y., Chen, N., & Chen, H. (2023). The Digital Platform , Enterprise Digital Transformation , and Enterprise Performance of Cross-Border E-Commerce — From the Perspective of Digital Transformation and Data Elements. *Theor. Appl. Electron. Commer. Res.*, *2023*(18), 777–794.

Yoon, J., Sung, S., & Ryu, D. (2020). The role of networks in improving international performance and competitiveness: Perspective view of open innovation. *Sustainability (Switzerland)*, *12*(3). https://doi.org/10.3390/su12031269

Zehir, C., & Karaca, D. (2023). A research competing model of organizational culture, organizational

learning, management innovation and NPD: Evidence from technology firms. *Business & Management Studies: An International Journal*, *11*(2), 696–714. https://doi.org/10.15295/bmij.v11i2.2221

Zhang, H., Xiao, H., Wang, Y., Shareef, M. A., Akram, M. S., & Goraya, M. A. S. (2020). An integration of antecedents and outcomes of business model innovation: A meta-analytic review. *Journal of Business Research*, *131*(October), 803–814. https://doi.org/10.1016/j.jbusres.2020.10.045