Daengku: Journal of Humanities and Social Sciences Innovation *ISSN: 2775-6165 (online)*
Vol. 6 No. 6 (2026)
https://doi.org/10.35877/454RI.daengku5343

Product Value and Marketing Performance: The Moderating Role of Collaborative Digital Scaling in the Sea Cucumber Business

Siti Holisoh*, Irma Setyawati, & Rahayu Lestari

Universitas Nasional, Jl. Sawo Manila No. 61, Pejaten, Pasar Minggu, Jakarta Selatan 12520, Indonesia

Abstract

This study aims to examine the effect of product value on marketing performance and to analyze the moderating role of collaborative digital scaling in the relationship between product value and marketing performance among sea cucumber entrepreneurs in Selayar Islands Regency, South Sulawesi, Indonesia. This study employed a quantitative survey approach involving 120 sea cucumber farmers and business operators. Data were collected using a structured questionnaire and analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) with SmartPLS. The results indicate that product value does not have a significant direct effect on marketing performance. However, an increase in the scale of collaborative digital activities significantly moderates the relationship between product value and marketing performance, indicating that the contribution of product value to marketing performance becomes stronger when supported by effective digital collaboration. These findings indicate that in the context of the sea cucumber business in the Selayar Islands, product value needs to be supported by digital collaboration capabilities so that it can be more effectively translated into marketing results. This study contributes to the marketing literature by demonstrating the contextual role of increased collaborative digital scale in transforming product value into improved marketing outcomes in the fisheries sector. Practically, strengthening digital partnerships, market networks, and collaboration platforms can help sea cucumber businesses maximize their products' market potential.

Keywords: Digital Collaboration, Fisheries Business, Market Access, Product Value, Sea Cucumber, Selayar Islands.

Received: 22 August 2026 Revised: 30 October 2026 Published: 31 December 2026

1. Introduction

Sea cucumbers are a fishery commodity with high economic value and market potential. This commodity is not only valuable as a fishery product but also possesses characteristics that can generate added value if managed and marketed appropriately (Herrera et al., 2022; Rahma & Pratiwi, 2023). In the Indonesian context, the diversity of commercial sea cucumber species highlights the commodity's significant potential for development as an economic resource for coastal communities (Pérez-Lloréns & Mouritsen, 2024; Setyastuti et al., 2024). However, high resource potential and economic value do not automatically guarantee marketing success. The ability of business actors to create value, communicate product benefits, and reach a wider market can support the realization of commodity potential to improve marketing performance (Elvevoll et al., 2022). Therefore, the development of the sea cucumber industry needs to be directed not only toward increasing production but also toward enhancing product value and marketing capabilities (Aditya Restu Hapriyanto, 2024; Distanaya, 2021).

In an increasingly dynamic market environment, marketing performance has become a key indicator for assessing a company's ability to maintain and expand its market position (Rahman et al., 2020). Marketing performance can be reflected through sales growth, customer growth, the ability to retain market share, the achievement of marketing targets, and the ability to expand market reach. Pérez-Lloréns & Mouritsen (2024) emphasize the importance of managing and measuring marketing performance as part of the strategic control of marketing activities (Massiseng et al., 2022). In the context of small and medium-sized enterprises, marketing performance is also increasingly influenced by a business's ability to respond to changing consumer needs, develop relevant offerings, and utilize marketing resources effectively (Martín-Hernández et al., 2021). Thus, improving the marketing performance of sea cucumber products requires

* Corresponding author.
E-mail address: sitiholisoh2023@student.unas.ac.id

Daengku: Journal of Humanities and Social Sciences Innovation is licensed under an Attribution-NonCommercial-ShareAlike 4.0 International (CC BY-NC-SA 4.0)

business operators to be able to generate product value that is relevant and acceptable to the market (Ambiapuri et al., 2023).

In the context of commodity-based businesses, product value becomes increasingly important because relatively similar products can yield different marketing results when businesses are able to provide clearer value to the market (Lestari et al., 2023). This value can stem from quality, benefits, uniqueness, product consistency, or other characteristics deemed important by buyers. (Hidayat & Pok, 2025) demonstrate that a product's social value is linked to marketing performance in the context of SMEs that utilize social media. This research shows that the value inherent in a product can be a crucial part of the marketing process, especially when that value can be communicated and developed through digital interactions with consumers. Product value lies not only in the product's physical characteristics but also in the business's ability to convey that value to the market (Qiao et al., 2022).

Nevertheless, a high product value does not necessarily lead to optimal marketing performance if businesses face limitations in reaching and developing markets (Soto-Acosta, 2024). The shift in the business environment toward a digital ecosystem makes the process of creating and delivering value increasingly dependent on a business's ability to leverage technology and networks. (Wamba-Taguimdje et al., 2020) demonstrate that digital marketing capabilities play a crucial role in enhancing the marketing performance of micro and small enterprises. This indicates that simply having a product with value is not enough; business owners also need the ability to connect that value to consumers and the market through appropriate marketing channels. In other words, the effectiveness of a product's value in generating marketing performance may depend on a business's ability to leverage available marketing resources and networks (Ferreira et al., 2023).

One approach that is becoming increasingly relevant in these circumstances is digital-based collaboration. Digitalization enables businesses not only to market their products independently but also to build relationships and share resources with consumers, business partners, distributors, marketplaces, and other business networks (Al-Moaid & Almarhdi, 2024). (Dionysus & Arifin, 2020) demonstrate that entrepreneurial networks can drive collaborative marketing innovation through resource integration, product development, promotion, and acceleration of the process delivering value to the market. Collaboration enables small businesses to overcome internal resource constraints by leveraging complementary resources from other parties. In the context of marketing, collaboration can also expand product visibility, accelerate market access, and enhance a business's ability to deliver product value to customers.

Such collaboration becomes even more strategic when conducted in a digital environment. The use of social media, marketplaces, communication platforms, and digital networks allows product information to be disseminated more widely at relatively lower costs and with fewer geographical constraints. (Hidayat & Pok, 2025) demonstrate that social media marketing can enhance a product's social value while improving the marketing performance of MSMEs. Meanwhile, (Ngabalin et al., 2023) highlight the importance of digital marketing capabilities in supporting the marketing performance of micro and small businesses. Their findings indicate that digital technology is not merely a communication channel but can serve as a source of capabilities that help businesses expand their market reach and optimize the value offered to customers.

Based on this perspective, this study employs the concept of Collaborative Digital Scaling-Up (CDSU) to describe entrepreneurs' ability to expand their marketing activities through collaboration supported by digital technology. This concept emphasizes that the use of digital technology becomes more effective when accompanied by the ability to build relationships and integrate resources with various parties (Srisathan et al., 2022). Collaboration can provide access to market information, customer networks, marketing resources, and distribution channels that might be difficult to obtain if business actors worked individually. (Dionysus & Arifin, 2020) demonstrate that marketing collaboration can accelerate the delivery of value to the market and help MSMEs expand the reach of their marketing activities. Thus, in this study, CDSU is positioned as a variable that can strengthen the influence of Product Value on Marketing Performance, rather than as a variable that replaces the importance of product value.

Theoretically, this relationship can be explained through the Resource-Based View and Dynamic Capabilities perspectives. Product value can be viewed as a resource that provides potential competitive advantage for a business, while the ability to build digital collaboration is a capability that enables this resource to be utilized and expanded in a dynamic market environment. (Sarfo et al., 2024) demonstrate that dynamic capabilities help SMEs adapt, develop products, and improve performance in the face of changes in the business environment. In this context, product value is a source of value that must be combined with capabilities that enable businesses to access and integrate external resources. Thus, the stronger the Collaborative Digital Scaling-Up, the greater the likelihood that product value can be converted into broader marketing benefits.

Although research on product value, digital marketing, and collaboration has advanced, there remains a research gap in explaining how digital collaboration can alter the strength of the relationship between product value and marketing performance. Previous studies have tended to examine product value or value creation as determinants of performance and competitiveness (Sipos et al., 2025), while other studies have focused on the influence of social media marketing or digital marketing capabilities on business performance (Hidayat & Pok, 2025). On the other hand, research on collaborative marketing innovation indicates that collaboration can help SMEs integrate resources and improve performance (Dionysus & Arifin, 2020). Thus, there is still limited research explaining how product value as a resource can generate marketing performance when supported by digital collaboration capabilities. This gap is increasingly relevant in the context of fisheries-based businesses, which face limited market access, networks, and marketing resources.

This study fills this gap by integrating the perspectives of Product Value, Collaborative Digital Scaling-Up (CDSU), and Marketing Performance within a single analytical framework. The unique contribution of this research lies in examining CDSU not simply as a factor related to marketing performance, but as a capability that can alter the strength of the relationship between Product Value and Marketing Performance. With this approach, the research not only assesses whether product value contributes to marketing performance but also explains the conditions under which this value can be more effectively translated into marketing outcomes.

Based on this gap, this study aims to analyze the influence of Product Value on Marketing Performance and to examine the role of Collaborative Digital Scaling-Up in moderating the relationship between Product Value and Marketing Performance among sea cucumber business operators in Selayar Islands Regency. This study contributes by integrating the perspectives of product value and digital collaboration in explaining marketing performance in the fisheries sector. In practical terms, this study is expected to provide insights for sea cucumber business operators to not only improve product quality and value but also strengthen digital-based collaborative networks so that the value they offer can reach a wider market.

2. Literature Review

2.1. Resource-Based View

The Resource-Based View (RBV) views an organization as a collection of diverse resources and capabilities, such that differences in the ownership and management of these resources can explain performance differences among organizations. From this perspective, valuable and hard-to-replace resources can serve as the foundation for an organization to build competitive advantage and achieve better performance. In the context of small businesses, these resources take the form not only of physical assets but also include knowledge, marketing capabilities, product quality, customer relationships, and other resources that can create value for the market (Elya Dasuki, 2021).

In this study, product value is viewed as one of the resources that can provide the foundation for creating competitive advantage. Products with superior quality, benefits, characteristics, and economic value can provide consumers or buyers with a reason to choose them over available alternatives. Thus, product value is understood not only as the perceived benefit relative to price, but also as the product's ability to deliver benefits that are relevant and valuable to the market. The Resource-Based View (RBV) perspective helps explain that when a business is able to create products with higher value and maintain those characteristics, it possesses resources that can be used to build a stronger position in the market (Orach et al., 2024).

In the context of the sea cucumber industry, product value can be related to product quality, physical characteristics, economic benefits, consistency, and the ability to meet market needs. These resources can serve as a basis for differentiation when businesses are able to maintain quality and communicate its benefits to buyers. Research (Ali et al., 2020) indicates that capabilities and resources related to product development play a role in supporting sustainable business performance. This suggests that product-related resources can be a crucial component in building sustainable business outcomes. Thus, Resource-Based View (RBV) provides a theoretical foundation that the higher the value inherent in a product, the greater the product's potential to contribute to marketing performance.

2.2. Dynamic Capabilities

Dynamic Capabilities Theory explains an organization's ability to adapt, integrate, and reconfigure both internal and external resources in response to environmental changes. This perspective becomes relevant when organizations operate

in environments characterized by changes in technology, consumer needs, competition, and market structures. Under such conditions, competitive advantage is determined not only by the resources an organization already possesses but also by its ability to continuously develop and combine those resources (Al-Moaid & Almarhdi, 2024). In the context of digital marketing, these capabilities become increasingly important because technology enables rapid changes in how companies interact with consumers, build networks, and reach markets. Businesses must not only have valuable products but also possess the ability to adapt how those products are introduced and delivered to the market. Sarfo et al. (2024) demonstrate that *dynamic capabilities* help SMEs adapt to environmental changes, develop new products, and improve performance. These findings indicate that dynamic capabilities enable an organization to convert its existing resources into more appropriate responses to market changes.

In this study, Collaborative Digital Scaling-Up (CDSU) is framed within the dynamic capabilities perspective. CDSU refers to entrepreneurs' ability to expand marketing activities through collaboration supported by digital technology. Such collaboration enables entrepreneurs to access complementary resources, such as market information, customer networks, distribution channels, promotional capabilities, and access to digital platforms. Thus, CDSU is not merely the use of technology but the ability to integrate external resources and networks through a digital environment to expand the impact of marketing activities (Tilley et al., 2024).

The Dynamic Capabilities perspective also explains why CDSU can function as a moderator. Product value is a resource that can create potential for competitive advantage, but the effectiveness of this resource in generating marketing performance depends on the business's ability to leverage it within the market environment. When businesses possess higher digital collaboration capabilities, information about product value can be disseminated more widely, relationships with customers and partners can be strengthened, and market access can be expanded. Conversely, when digital collaboration capabilities are low, product value may remain limited to the existing market scope. Thus, CDSU can alter the strength of the relationship between Product Value and Marketing Performance. (Dionysus & Arifin, 2020) support this argument by demonstrating that entrepreneurial networks can drive *collaborative marketing innovation* through resource integration, product development, promotion, and accelerated *time-to-market*. This indicates that collaboration enables MSMEs to combine available resources with external resources to generate more effective marketing activities. In the digital context, these capabilities can be expanded through digital platforms, social media, marketplaces, and business networks, thereby allowing product value to reach a broader market.

Thus, RBV and Dynamic Capabilities complement each other in this research model. RBV explains that Product Value is a resource that can create value and competitive advantage for a business, while Dynamic Capabilities explain that the ability to integrate and expand the utilization of these resources through digital collaboration can determine how effectively these resources generate marketing performance.

2.3. The Influence of Product Value on Marketing Performance

Product value describes the extent to which a product is able to provide benefits that the market considers valuable. This value can stem from the product's quality, benefits, characteristics, differentiation, or inherent economic value. In a marketing context, products capable of delivering higher value have a greater chance of attracting consumer attention, building positive perceptions, and increasing the likelihood of purchase. Therefore, product value can serve as one of the strategic resources that support the achievement of marketing performance (Orach et al., 2024).

Based on the Resource-Based View perspective, resources capable of creating value for customers can serve as the foundation for an organization to gain a competitive advantage. When businesses are able to produce products with higher value compared to available alternatives, those products can become a source of differentiation that supports the business's market position (Dionysus & Arifin, 2020). In the context of sea cucumbers, product value can be reflected through the quality, benefits, characteristics, and economic value offered. Products with higher value will be easier to position as superior products and have the potential to achieve better market acceptance. Empirically, Ali et al. (2020) demonstrated the importance of resources and capabilities related to product development in supporting sustainable business performance. Research on SMEs also indicates that the ability to create value and product advantages is linked to marketing performance. These findings suggest that the value created through products can serve as a foundation for improving market outcomes.

However, this relationship must be viewed within the context of the characteristics of the businesses under study. In the sea cucumber industry, product value can become a competitive advantage when the product's quality and benefits meet buyers' needs. Products with better quality, consistent characteristics, and clear economic value have the potential to achieve higher market acceptance. Therefore, the higher the product value that business operators can offer, the greater

the likelihood of achieving better marketing performance. Based on this argument, the first hypothesis is formulated as follows:

H1: Product Value has a positive effect on Marketing Performance.

2.4. The Moderating Role of Collaborative Digital Scaling-Up

Although product value can be a source of competitive advantage, a product's ability to generate marketing performance is not always the same under every condition. In the context of sea cucumber products, product value is reflected not only in general product quality but also in characteristics that are particularly relevant to this commodity, such as quality, size consistency, sustainable cultivation, and economic benefits. These characteristics may determine the attractiveness and market relevance of sea cucumber products, but their value still needs to be effectively communicated and connected with buyers and markets. High-value products therefore require marketing mechanisms capable of conveying their specific benefits and characteristics to the market. In an increasingly digitized business environment, collaboration through digital platforms and networks can help businesses expand their market reach and leverage resources not available internally. According to Dynamic Capabilities Theory, organizations must possess the ability to integrate and configure resources in response to environmental changes. Collaborative Digital Scaling-Up (CDSU) embodies this capability because businesses not only use digital technology for promotion but also build collaborations with various stakeholders to expand access to markets, information, resources, and networks. Thus, CDSU can help transform the market potential embedded in sea cucumber product value into broader market value (Orach et al., 2024).

Conceptually, when Collaborative Digital Scaling-Up is at a high level, entrepreneurs have more opportunities to communicate the quality, size characteristics, sustainability attributes, and economic benefits of sea cucumber products, reach new customers, build relationships with partners, and expand distribution. These conditions may enable product value to have a greater contribution to marketing performance. Conversely, when CDSU is low, the specific value of sea cucumber products may remain known only within a limited buyer network, so the potential of that value may not be fully translated into marketing performance.

(Dionysus & Arifin, 2020) demonstrate that collaboration within entrepreneurial networks can support marketing innovation through resource integration, product development, promotion, and marketing acceleration. Meanwhile, research by Sarfo et al. (2024) indicates that dynamic capabilities help MSMEs adapt and develop in the face of environmental changes. These two findings provide a basis for the notion that the ability to integrate resources and build external relationships can enhance the effectiveness of internal resource utilization.

In the context of this study, Product Value is a resource, while CDSU is a capability that enables the value embedded in sea cucumber products to be communicated, accessed, and utilized more effectively in a digital environment. Therefore, CDSU is expected not only to be related to marketing performance but also to modify the strength of Product Value's influence on marketing performance. The stronger the Collaborative Digital Scaling-Up, the greater the opportunity for the specific value of sea cucumber products connected with broader markets and translated into marketing outcomes**.** Based on this reasoning, the second hypothesis is formulated as follows:

H2: Collaborative Digital Scaling-Up Strengthens the Positive Influence of Product Value on Marketing Performance.

3. Methods

3.1. Research Design

This study employs a quantitative approach with a causal research design. A quantitative approach was chosen because the study aims to empirically test the relationship between variables using numerical data obtained from respondents. The research model examines the effect of Product Value on Marketing Performance and tests the role of Collaborative Digital Scaling-Up as a moderating variable in that relationship.

The research subject is sea cucumber business and marketing activities in Selayar Islands Regency, South Sulawesi. This context was selected based on the characteristics of the sea cucumber business, which involves cultivation and marketing activities at the coastal community level. The study focuses on business actors directly involved in sea cucumber cultivation and/or marketing activities, ensuring that respondents possess experience relevant to the variables under investigation. The research model consists of one exogenous variable, one moderating variable, and one endogenous variable. Product Value is the independent variable (X), Collaborative Digital Scaling-Up is the moderating variable (Z), and Marketing Performance is the dependent variable (Y).

3.2. Population and Sample

The study population includes business operators involved in sea cucumber farming and marketing activities in Selayar Islands Regency. In the source study, respondents consisted of fishermen engaged in sea cucumber farming and marketing, distributed across two subdistricts in Selayar Islands Regency. Respondents also included business owners, cooperative partners, and local MSME operators directly involved in sea cucumber farming activities.

The sample size used in this study was 120 respondents. Respondent selection focused on business operators with direct knowledge and experience regarding sea cucumber products, marketing activities, the use of digital technology, and relationships with other parties in marketing activities. These characteristics are important because the study not only measures perceptions of product value and marketing performance but also assesses business operators' ability to build collaborations through digital platforms.

In this article, the same sample is used because the model analyzed is part of the same research model. Thus, this article does not claim to have collected new data but rather conducts a focused analysis of the relationships among variables already established in the research model.

Although the sample size of 120 respondents meets the minimum threshold used in PLS-SEM research, this sample size remains relatively limited for detecting moderation effects, particularly because interaction tests generally require greater statistical power than direct effect tests. Therefore, the moderation results in this study should be interpreted cautiously and not overgeneralized. The use of PLS-SEM was retained because this method aligns with the research objectives of testing predictive relationships and interaction effects in a relatively simple model.

3.3. Data Collection Techniques

The research data consists of primary and secondary data. Primary data was obtained by distributing questionnaires to respondents who are sea cucumber farmers and marketers. In the original study, the questionnaire served as the primary instrument for gathering information on the research variables, while secondary data was used as supporting data derived from relevant documents, reports, and literature sources.

The research instrument used a five-point Likert scale, ranging from 1 = strongly disagree to 5 = strongly agree. The use of this scale allowed respondents' perceptions of each construct to be translated into numerical data, which was subsequently analyzed using SEM-PLS. The research document explicitly states that the questionnaire was distributed using a 1–5 Likert scale.

3.4. Operational Definitions of Variables

This study uses three main constructs: Product Value, Collaborative Digital Scaling-Up, and Marketing Performance. These three constructs were operationalized into a number of indicators representing the characteristics of each variable. Measurements were conducted using a structured instrument with a five-point Likert scale. The selection of indicators was tailored to the context of the sea cucumber business and the characteristics of the marketing activities of business operators in Selayar Islands Regency.

3.4.1. Product Value

Product Value is defined as the perception of the value inherent in a product based on its quality, characteristics, sustainability, and the economic benefits it can provide to the market. Product value is not only related to the physical characteristics of a product but also to the benefits and advantages that can be experienced by users or buyers. From a value creation perspective, a business's ability to produce products with benefits and characteristics relevant to the market is one of the foundations for building a competitive position and improving business performance (Heinberg et al., 2020).

In the context of the sea cucumber industry, product value is represented by sea cucumber quality, size consistency, sustainable aquaculture, and economic benefits. Sea cucumber quality indicates the product's ability to meet the characteristics expected by the market, while size consistency reflects the uniformity of product characteristics that can foster buyer confidence. Sustainable cultivation represents the ability to produce products while considering resource sustainability, while economic benefits describe the value that business operators can derive from the product. These four indicators are used to represent the product's ability to create value relevant to the market. These indicators align with the research instruments used to measure the Product Value construct.

3.4.2. Collaborative Digital Scaling-Up

Collaborative Digital Scaling-Up (CDSU) is defined as a business's ability to expand its marketing activities through the use of digital technology and collaboration with various parties. This concept emphasizes that digitalization is not only used as a means of communication or promotion but also as a medium for building networks, acquiring complementary resources, expanding market access, and increasing the reach of marketing activities. In an increasingly digitized business environment, the ability to build networks and integrate external resources is becoming increasingly important for small businesses with limited internal resources. (Dionysus & Arifin, 2020) demonstrate that entrepreneurial networks can drive collaborative marketing innovation through resource integration, product development, promotion, and accelerated marketing. In line with this, (Wu et al., 2024) emphasize the importance of collaborative capabilities in a digital environment to expand resource utilization and support organizational performance.

In this study, CDSU is represented through collaboration with marketplaces, access to global markets, the use of social media, and trust in digital collaboration. Collaboration with marketplaces demonstrates entrepreneurs' ability to utilize digital platforms as part of their marketing network; access to global markets reflects the ability to expand market reach through the digital environment; the use of social media demonstrates the utilization of digital channels for communication and marketing; while trust in digital collaboration reflects entrepreneurs' confidence in relationships and interactions with partners through the digital environment. These four indicators are included in the research instrument to measure Collaborative Digital Scaling-Up.

3.4.3. Marketing Performance

Marketing Performance refers to a business's achievements in carrying out marketing activities, as reflected in its ability to generate economic benefits, maintain relationships with buyers, expand market reach, and conduct marketing activities efficiently. Marketing performance not only reflects sales results but also demonstrates a business's ability to retain customers, develop markets, and use marketing resources effectively. (Morgan et al., 2022) explain that marketing performance is one of the key outputs of an organization's ability to manage marketing activities and respond to market dynamics.

In the context of the sea cucumber industry, marketing performance is measured through revenue growth, customer loyalty, market expansion, and marketing efficiency. Revenue growth reflects the economic returns generated from marketing activities, while customer loyalty indicates a business's ability to maintain relationships with customers or buyers. Market expansion describes a business's ability to broaden its marketing reach and enter new markets, while marketing efficiency reflects the ability to achieve marketing results through the effective use of resources. These four indicators are used to describe business operators' marketing achievements more comprehensively and are consistent with the indicators used in the research instrument.

3.5. Data Analysis Techniques

The research data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) with the assistance of SmartPLS software. PLS-SEM was used because this study aims to test the relationships among constructs while analyzing the moderating effect of *Collaborative Digital Scaling-Up* (CDSU) on the relationship between Product Value and Marketing Performance. PLS-SEM is appropriate for analyzing structural models involving latent constructs measured through multiple indicators, as well as for evaluating predictive relationships and interaction effects within the research model (Hair et al., 2022). The use of PLS-SEM also allows for the simultaneous evaluation of the measurement model and the structural model, so that the relationships between constructs can be interpreted based on instruments that meet validity and reliability criteria.

Data analysis is conducted in two main stages: evaluation of the *measurement* model (*outer model*) and evaluation of the *structural* model (*inner model*). The evaluation of the measurement model was conducted to ensure that the indicators used could represent the research constructs validly and reliably, while the evaluation of the structural model was conducted to test the relationships between constructs and the model's ability to explain endogenous variables (Hair et al., 2022). Once both stages met the established criteria, hypothesis testing was conducted using the bootstrapping procedure to obtain path coefficients, t-statistics, and p-values as the basis for decision-making regarding the research hypotheses.

3.5.1. Measurement Model Evaluation

The measurement model (*outer model*) evaluation was conducted to assess the quality of the indicators in reflecting the latent constructs used in the study. The testing included convergent validity, internal reliability, and discriminant validity. Convergent validity was evaluated using *outer loading* values and Average Variance Extracted (AVE). *Outer loading* values indicate how strongly an indicator reflects the construct it measures, while AVE indicates the proportion of the indicator's variance that can be explained by the construct. *Outer loading* values approaching or greater than 0.70 and an AVE of at least 0.50 generally indicate that convergent validity is met (Hair et al., 2022).

Next, construct reliability was evaluated using Cronbach's Alpha and Composite Reliability (CR). Cronbach's Alpha is used to assess the internal consistency of indicators within a construct, while Composite Reliability provides a measure of reliability that accounts for each indicator's contribution to the construct. A reliability value of approximately 0.70 or higher is generally considered to indicate an adequate level of internal consistency for explanatory research (Hair et al., 2022). The use of both measures allows researchers to ensure that the indicators within the Product Value, Collaborative Digital Scaling-Up, and Marketing Performance constructs possess adequate measurement consistency.

In addition to convergent validity and reliability, this study evaluates discriminant validity to ensure that each construct is empirically distinct from the others. Discriminant validity indicates the extent to which a construct truly represents a concept distinct from other constructs in the model. In PLS-SEM, discriminant validity testing can be conducted using the Heterotrait-Monotrait Ratio (HTMT), which is currently regarded as one of the more informative approaches for assessing differences between constructs (Hair et al., 2022). The measurement model is evaluated before testing the structural model so that the interpretation of relationships between constructs is based on instruments with adequate measurement quality.

3.5.2. Structural Model Evaluation

Once the measurement model meets the criteria for validity and reliability, the analysis proceeds to the evaluation of the structural model (*inner model*). The evaluation of the structural model aims to determine the ability of exogenous constructs to explain endogenous constructs and to test the relationships formulated in the research hypotheses. Several measures used include the coefficient of determination (R^2), effect size (f^2), and the significance of path coefficients.

The R^2 value is used to indicate the proportion of variation in Marketing Performance that can be explained by the constructs in the model. The higher the R^2 value, the greater the ability of the predictor constructs to explain the variation in the endogenous construct, although its interpretation must still take into account the research context and the complexity of the model (Hair et al., 2022). Furthermore, the effect size (f^2) is used to determine the magnitude of an exogenous construct's contribution to the R^2 of the endogenous construct when that construct is included in or excluded from the model. Thus, f^2 provides additional information regarding the substantive significance of a relationship beyond statistical significance.

Significance testing of relationships between constructs was conducted using the bootstrapping procedure. This procedure generates a sample distribution used to obtain *standard errors*, *t-statistics*, and *p-values* from the path coefficient estimates. In this study, decisions regarding hypotheses were based on a 5% significance level ($\alpha = 0.05$). A relationship is considered significant if the *p-value* is less than 0.05. In addition to significance, the direction of the path coefficients is also considered to determine whether the observed relationship aligns with the hypothesized direction.

3.6. Moderation Effect Testing

Testing for moderation effects is a key component of the research analysis because this study aims to determine whether Collaborative Digital Scaling-Up strengthens the relationship between Product Value and Marketing Performance. In moderation analysis, a variable is called a moderator if its presence influences the strength or direction of the relationship between the predictor variable and the criterion variable. Thus, CDSU is not positioned as a mediating variable between Product Value and Marketing Performance, but rather as a variable that modifies the strength of the relationship between these two constructs.

4. Result and Discussion

4.1. Outer Model

Table 1. Outer Loading Test Results

Construct	Indicator	Outer Loading	Description
Product Value (NP)	PV1 – Sea cucumber quality	0.817	Valid
	PV2 – Size Consistency	0.795	Valid
	NP3 – Sustainability of aquaculture	0.747	Valid
	NP4 – Economic Benefits	0.764	Valid
Collaborative Digital Scaling-Up (KDP)	KDP1 – Collaboration with marketplaces	0.897	Valid
	KDP2 – Access to Global Markets	0.871	Valid
	KDP3 – Use of social media	0.776	Valid
	KDP4 – Trust in Digital Collaboration	0.707	Valid
Marketing Performance (KP)	MP1 – Revenue Growth	0.945	Valid
	MP2 – Customer Loyalty	0.932	Valid
	KP3 – Market Expansion	0.764	Valid
	KP4 – Marketing Efficiency	0.933	Valid

Based on Table 1, all indicators in the constructs of Product Value, *Collaborative Digital Scaling-Up*, and Marketing Performance obtained *outer loadings* above 0.70, with ranges of 0.747–0.817, 0.707–0.897, and 0.764–0.945, respectively. These results indicate that all indicators make an adequate contribution to reflecting the constructs being measured; therefore, no indicators need to be eliminated during the measurement model evaluation stage. Consequently, all indicators are deemed to meet the criteria *for convergent validity* based on their *outer loading* values and can be used for subsequent analysis.

Table 2. Average Variance Extracted (AVE)

Construct	Average Variance Extracted (AVE)	Description
Product Value (NP)	0.641	Valid
Collaborative Digital Scaling-Up (KDP)	0.659	Valid
Marketing Performance (KP)	0.768	Valid

Based on Table 2, all constructs have values above the minimum threshold of 0.50, namely Product Value at 0.641, Collaborative Digital Scaling-Up at 0.659, and Marketing Performance at 0.768. These results indicate that each construct is able to explain more than 50% of the variance in its respective indicators, thus fulfilling the convergent validity criteria for all three constructs.

Table 3. Heterotrait–Monotrait Ratio (HTMT)

Construct	Product Value	Collaborative Digital Scaling-Up	Marketing Performance
Product Value	—	0.832	0.534
Collaborative Digital Scaling-Up	0.832	—	0.350
Marketing Performance	0.534	0.350	—

Based on Table 3, all inter-construct ratio values are below the 0.90 threshold; even the highest value of 0.832 remains below the stricter threshold of 0.85. Thus, Product Value, Collaborative Digital Scaling-Up, and Marketing Performance possess adequate discriminant validity, meaning that these three constructs can be empirically distinguished and are suitable for use in the structural equation modeling phase.

Table 4. Reliability Test Results

Construct	Cronbach's Alpha	Composite Reliability	Description
Product Value (NP)	0.747	0.736	Reliable
Collaborative Digital Scaling-Up (KDP)	0.812	0.835	Reliable
Marketing Performance (KP)	0.724	0.929	Reliable

Based on Table 4, all constructs have Cronbach's Alpha and Composite Reliability values above 0.70; thus, the three constructs are deemed to have good internal consistency and meet the reliability criteria. Cronbach's Alpha values ranged from 0.724 to 0.812, while Composite Reliability values ranged from 0.736 to 0.929. Thus, the indicators used

to measure Product Value, Collaborative Digital Scaling-Up, and Marketing Performance were deemed consistent in representing their respective constructs and can be used for the subsequent structural equation modeling analysis.

4.2. Inner Model

Table 5. Coefficient of Determination

Variable	R-squared	Description
Marketing Performance	0.582	Moderate

Table 5 shows an **R^2** value **of 0.582,** meaning that Product Value and Collaborative Digital Scaling-Up, along with their interaction effect, account for approximately **58.2% of the variation in Marketing Performance**, while the remaining 41.8% is explained by other factors outside the research model.

Table 6. The Direct Effect of Product Value on Marketing Performance

Relationship	Original Sample (O)	T-statistic	P-value	Notes
Product Value → Marketing Performance	−0.028	0.939	0.350	Not significant

The results in Table 6 show that an increase in product value does not directly lead to an increase in marketing performance. The negative coefficient of −0.028 indicates a very weak relationship that runs counter to the hypothesized direction, while *the p-value* of 0.350 indicates that the relationship is not statistically significant. Thus, H1 is rejected.

Table 7. Results of the Moderation Effect Test

Relationship	Original Sample (O)	T-statistic	P-value	Notes
Product Value × Collaborative Digital Scaling-Up → Marketing Performance	0.979	2.027	0.009	Significant

The results in Table 7 show that Collaborative Digital Scaling-Up positively and significantly moderates the relationship between Product Value and Marketing Performance. The positive interaction coefficient indicates that an increase in Collaborative Digital Scaling-Up strengthens the effect of Product Value on Marketing Performance. Thus, although Product Value does not show a significant direct effect on Marketing Performance, this relationship becomes stronger when supported by a higher level of Collaborative Digital Scaling-Up. These results support H2.

4.3. Discussion

4.3.1. The Effect of Product Value on Marketing Performance

The research results show that Product Value does not have a significant effect on Marketing Performance, with a path coefficient of −0.028, *a t-statistic* of 0.939, and *a p-value* of 0.350. These results indicate that improvements in quality, size consistency, sustainable cultivation, and the economic benefits inherent in sea cucumber products have not directly led to an increase in marketing performance. Thus, H1 is not supported. This finding suggests that possessing a product with value does not automatically guarantee increased revenue, customer loyalty, market expansion, and marketing efficiency.

These findings can be explained through the Resource-Based View (RBV) perspective. In the RBV perspective, valuable resources can serve as the foundation for creating competitive advantage, but the mere existence of resources is not always sufficient to generate higher performance if those resources are not utilized effectively. In the context of this research, quality, size consistency, sustainable cultivation, and economic benefits are inherent characteristics of sea cucumber products and constitute Product Value. However, these characteristics are essentially the inherent value of the product (intrinsic product value), while Marketing Performance is the result of how that value is recognized, accepted, and utilized by the market. Thus, there is a difference between having a valuable product and being able to translate that value into market outcomes.

The distinction between product value and market realized value is crucial in explaining the weak direct relationship. The value of a product is not solely determined by its inherent characteristics, but also by the business actor's ability to convey those characteristics to buyers and connect them to market needs. In the sea cucumber business, for example, quality, size consistency, sustainable cultivation, and economic benefits only have marketing consequences when these

characteristics are recognized and appreciated by buyers. If information about these characteristics is not communicated effectively or access to buyers is limited, the inherent value of the product may remain unrealized as market value.

From this perspective, the insignificant direct influence of Product Value can also be understood as a gap between internal resources and market realization (resource-to-market gap). Business actors can have products with valuable characteristics, but limitations in marketing networks, market information, distribution channels, relationships with buyers, and promotional capabilities can hinder the process of converting product value into marketing results. Therefore, the relationship between Product Value and Marketing Performance is not solely determined by the level of value attached to the product, but also by the organization's ability to connect these resources with the market environment.

These findings also offer a different perspective from studies indicating that value creation and product characteristics can support business competitiveness and performance (Hidayat & Pok, 2025). This discrepancy may arise because the relationship between product value and marketing performance is influenced by the business context and entrepreneurs' ability to access markets. In the sea cucumber industry in the Selayar Islands, high-value products may not necessarily reach a wide range of consumers or buyers if business operators still face limitations in their networks, market information, distribution channels, and promotional capabilities. In other words, the value inherent in a product is not necessarily the value recognized and appreciated by the market.

This condition is significant because marketing performance is determined not only by a product's internal characteristics but also by a business's ability to connect the product with the market. Even products with good quality and benefits still require communication channels, distribution networks, and marketing relationships that enable buyers to become aware of those characteristics. In an increasingly digitized business environment, marketing capabilities are becoming more critical as consumers and business partners obtain product information through various digital channels. Therefore, the results of this study indicate that enhancing product value must be accompanied by the ability to translate product value into market value.

Thus, the lack of a significant direct relationship between Product Value and Marketing Performance does not mean that product value is unimportant for sea cucumber businesses. On the contrary, these results show that product value requires supporting conditions to generate marketing performance.

4.3.2. The Role of Collaborative Digital Scaling-Up in Moderating the Effect of Product Value on Marketing Performance

The results of the study indicate that Collaborative Digital Scaling-Up positively and significantly moderates the relationship between Product Value and Marketing Performance, with an interaction coefficient of 0.979, *a t-statistic* of 2.027, and *a p*-value of 0.009. The positive interaction coefficient indicates that the higher the level of Collaborative Digital Scaling-Up, the stronger the influence of Product Value on Marketing Performance. Thus, H2 is supported. This finding is the main finding of the study because it shows that product value does not operate independently in generating marketing performance; rather, its effectiveness is influenced by the ability of business actors to build and expand collaborations through the digital environment.

These findings can be explained through the Dynamic Capabilities perspective. Unlike the Resource-Based View (RBV), which emphasizes the importance of resources as the foundation of competitive advantage, the dynamic capabilities perspective emphasizes an organization's ability to integrate, develop, and reconfigure resources in response to environmental changes (Al Azzani et al., 2024). In this study, Product Value can be viewed as a resource with the potential to create a competitive advantage, while Collaborative Digital Scaling-Up is a capability that enables these resources to be utilized more effectively in a dynamic market environment. Sarfo et al. (2024) demonstrate that dynamic capabilities help SMEs adapt to environmental changes, develop products, and improve performance. Thus, digital collaboration capabilities can serve as a mechanism that enables business actors to optimize the product resources they already possess.

More specifically, Collaborative Digital Scaling-Up allows product value to be expanded from merely the product's internal characteristics to value that is recognizable by the market. Through collaboration with marketplaces, the use of social media, access to broader markets, and relationships with digital partners, business owners can convey information about the quality, benefits, and characteristics of sea cucumber products to potential buyers. Consequently, product value gains a channel to be communicated and converted into market opportunities. These findings align with those of Dionysus & Arifin (2020), who demonstrated that entrepreneurial networks can drive *collaborative marketing innovation* through resource integration, product development, promotion, and accelerated *time-to-market*.

Collaboration thus enables entrepreneurs to overcome internal resource constraints by leveraging the resources and networks of other parties.

These findings also indicate that digitalization and collaboration should not be viewed merely as promotional activities. In the context of this study, Collaborative Digital Scaling-Up serves a broader function: expanding marketing networks and connecting product resources with external resources. When entrepreneurs have products with strong value but lack the capacity to expand market access, the benefits of that product value tend to be limited to existing markets. Conversely, when businesses are able to leverage marketplaces, social media, digital networks, and collaborative relationships, information about a product's value can reach more potential buyers and partners. Thus, CDSU strengthens a product's value in generating marketing outcomes.

These findings contribute to prior research, which generally addresses product value and digital capabilities as standalone factors. Research on *digital marketing capability* indicates that digital marketing capability is associated with improved business performance, while research on *collaborative marketing innovation* suggests that networks and resource integration can support SME marketing activities. However, this study expands on these perspectives by demonstrating that digital collaboration capability not only has the potential for a direct relationship with marketing performance but can also transform the strength of the relationship between product value and marketing performance.

From a practical perspective, these findings suggest that sea cucumber business operators cannot rely solely on improving product quality and value. Such improvements must be accompanied by the development of capabilities to build digital collaborations, expand market networks, leverage marketplaces and social media, and build trust with digital partners. Operationally, the development strategy can be carried out in stages: (1) clarifying and documenting the characteristics and benefits of sea cucumber products; (2) conveying this information through marketplaces and social media; (3) using digital channels to build networks with buyers, distributors, and partners; and (4) maintaining trust through communication and fulfilling commitments in digital collaboration. This strategy enables product value—which was previously merely an internal characteristic of the product—to be transformed into a value that is more easily recognized and accepted by the market. Therefore, efforts to improve marketing performance should be carried out through an approach that integrates the strengthening of product value with the enhancement of digital collaboration capabilities.

5. Conclusion

This study analyzes the effect of Product Value on Marketing Performance and examines the role of Collaborative Digital Scaling-Up (CDSU) as a moderating variable in the sea cucumber industry in Selayar Islands Regency. The results indicate that Product Value does not have a significant effect on Marketing Performance. These findings suggest that the quality, size consistency, sustainability of cultivation, and economic benefits inherent in the product have not yet been able to directly improve marketing performance. Conversely, Collaborative Digital Scaling-Up was found to positively and significantly strengthen the relationship between Product Value and Marketing Performance. Thus, product value will be more effective in generating marketing performance when supported by the ability to build collaborations through marketplaces, social media, broader market access, and digital networks.

Theoretically, this study reinforces the integration of the Resource-Based View and Dynamic Capabilities in explaining the marketing performance of fisheries-based businesses. Product Value can be viewed as a resource with the potential to create value, while Collaborative Digital Scaling-Up serves as a capability that enables this resource to be utilized and expanded within a dynamic market environment. These findings indicate that simply possessing a valuable product is not sufficient to generate marketing performance unless it is accompanied by the ability to connect that value to the market through digital collaboration.

In practical terms, sea cucumber business operators need to develop strategies that focus not only on improving product quality and value but also on strengthening digital collaboration capabilities. The use of marketplaces, social media, partner networks, and broader market access can serve as means to communicate product value while expanding marketing reach. For stakeholders, the results of this study indicate the importance of supporting the enhancement of digital literacy, access to marketing platforms, collaborative networks, and market connectivity for sea cucumber businesses. Thus, improving marketing performance cannot be achieved solely through internal product enhancement; it must be accompanied by the ability to scale product value through digital collaboration.

This study has several limitations that should be considered when interpreting its results. First, the study employed a quantitative approach with 120 respondents who are sea cucumber business operators in Selayar Islands Regency; therefore, generalizing the findings to other regions, commodities, or business characteristics should be done with

caution because the unique market structure, dependence on local trade networks, and the conditions of digital access and infrastructure in the archipelago can affect the ability of business actors to connect product value with the market. Second, the research model focuses only on Product Value, Collaborative Digital Scaling-Up, and Marketing Performance; thus, there are other factors that could potentially explain variations in marketing performance but were not included in the model. Third, the measurement of variables is based on respondents' perceptions via a questionnaire; therefore, the possibility of subjectivity in their assessments must still be taken into account. Therefore, future research is advised to expand the scope of respondents and the study area, test the model on different commodities or business sectors, and include other variables such as digital marketing capabilities, market orientation, product innovation, business networks, or market access to gain a more comprehensive understanding of the factors influencing marketing performance. Future research could also employ a longitudinal approach or combine quantitative and qualitative methods to capture changes in digital collaboration capabilities and their impact on marketing performance in greater depth.

References

Aditya Restu Hapriyanto. (2024). Innovative Strategies for Enhancing Business Competitiveness in the Digital Age. *Nusantara Journal of Multidisciplinary Science*, *2*(1), 115–124. https://doi.org/10.60076/NJMS.V2I1.255

Ali, S., Li, G., Yang, P., Hussain, K., & Latif, Y. (2020). Unpacking the importance of intangible skills in new product development and sustainable business performance; strategies for marketing managers. *PLoS ONE*, *15*(September 9). https://doi.org/10.1371/journal.pone.0238743

Al-Moaid, N. A. A., & Almarhdi, S. G. (2024). Developing dynamic capabilities for successful digital transformation projects: the mediating role of change management. *Journal of Innovation and Entrepreneurship 2024 13:1*, *13*(1), 85-. https://doi.org/10.1186/s13731-024-00446-9

Ambiapuri, E., Setiadi, H., & Parwitasari, N. A. (2023). Product Innovation and Digital Marketing: Their Influence on Purchasing Decisions at Teras Soreang in Bandung Regency. *Ekonomis: Journal of Economics and Business*, *7*(1), 541. https://doi.org/10.33087/EKONOMIS.V7I1.1071

Dionysus, R., & Arifin, A. Z. (2020). Strategic Orientation on Performance: The Resource-Based View Theory Approach. *Jurnal Akuntansi*, *24*(1), 136–153. https://doi.org/10.24912/JA.V24I1.661

Distanaya, N. (2021). *A Study on the Suitability of Cultivation Sites for Sand Sea Cucumbers (Holothuria scabra) Using the Spatial Multi-Criteria Analysis (SMCA) Approach in Sumberkima Bay, Bali*.

Elvevoll, E. O., James, D., Toppe, J., Gamarro, E. G., & Jensen, I. J. (2022). Food Safety Risks Posed by Heavy Metals and Persistent Organic Pollutants (POPs) Related to the Consumption of Sea Cucumbers. In **Foods** (Vol. 11, No. 24). MDPI. https://doi.org/10.3390/foods11243992

Elya Dasuki, R. (2021). Strategic Management: A Review of the Resource-Based View Theory. *Coopetition: Scientific Journal of Management*, *12*(3), 447–454. https://doi.org/10.32670/COOPETITION.V12I3.710

Ferreira, G. M. D. S., Lemgruber, M. S., & Cabrera, T. L. (2023). From Didachography to AI: Metaphors That Automate Teaching. *Journal of Interactive Media in Education*, *2023*(1). https://doi.org/10.5334/JIME.798

Hair, J. F., Tomas, G., Hult, M., Ringle, C. M., & Sarstedt, M. (n.d.). *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)*. Retrieved https://www.researchgate.net/publication/354331182

Heinberg, M., Katsikeas, C. S., Ozkaya, H. E., & Taube, M. (2020). How nostalgic brand positioning shapes brand equity: differences between emerging and developed markets. *Journal of the Academy of Marketing Science*, *48*(5), 869–890. https://doi.org/10.1007/s11747-019-00637-x

Herrera, M., Tubío, A., Pita, P., Vázquez, E., Olabarria, C., Duarte, C. M., & Villasante, S. (2022). Trade-Offs and Synergies Between Seagrass Ecosystems and Fishing Activities: A Global Literature Review. In *Frontiers in Marine Science* (Vol. 9). Frontiers Media S.A. https://doi.org/10.3389/fmars.2022.781713

Hidayat, A. S., & Pok, W. C. (2025). Empowering SME Innovation Through Intangible Factors. *Journal of Innovation and Entrepreneurship*, *14*(1). https://doi.org/10.1186/s13731-024-00437-w

Lestari, R., Hardini, R., Waluyo, T., & Elwisam, E. (2023). Strategies for Increasing Sales through Digital Marketing and Product Branding for MSMEs in Gadog Village, Cianjur, West Java. *Al-Kharaj: Journal of Sharia Economics, Finance & Business*, *6*(2), 2208–2215. https://doi.org/10.47467/alkharaj.v6i2.5163

Martín-Hernández, R., Rodríguez-Canul, R., Kantún-Moreno, N., Olvera-Novoa, M. A., Medina-Contreras, O., Garikoitz-Legarda, C., Triviño, J. C., Zamora-Briseño, J. A., May-Solis, V., Poot-Salazar, A., Pérez-Vega, J. A., Gil-Zamorano, J., Grant, G., Dávalos, A., & Olivera-Castillo, L. (2021). Comparative Transcriptomes of the Body Wall of Wild and Farmed Sea Cucumber Isostichopus badionotus. *International Journal of Molecular Sciences*, *22*(8). https://doi.org/10.3390/IJMS22083882

Massiseng, A. N. A., Awaluddin, A., Fachry, M. E., & Daris, L. (2022). Catching season and supply chain of small-scale fishery resources (Holothuroidea sp.) on Sapuka Island, Pangkep Regency, South Sulawesi. *Agrikan: Journal of Fisheries Agribusiness*, *15*(2), 638–649. https://doi.org/10.52046/AGRIKAN.V15I2.1357

Morgan, N. A., Jayachandran, S., Hulland, J., Kumar, B., Katsikeas, C., & Somosi, A. (2022). Marketing performance assessment and accountability: Process and outcomes. *International Journal of Research in Marketing*, *39*(2), 462–481. https://doi.org/10.1016/j.ijresmar.2021.10.008

Ngabalin, A. M., Perikanan, P., & Tual, N. (2023). *Digital Marketing as a Fisheries Marketing Strategy in Sathean Village*. *12*(6).

Orach, K., Elsler, L., Daw, T. M., Drury O'Neill, E., & Schlüter, M. (2024). Diverse fisher-trader relations shape responses of small-scale fisheries to global change. *Ecology and Society, Published Online: November 31, 2024 | DOI:10.5751/ES-15287-290416*, *29*(4). https://doi.org/10.5751/ES-15287-290416

Pérez-Lloréns, J. L., & Mouritsen, O. G. (2024). Sea cucumber: A scavenger overexploited, traded, and turned into food (even a gastronomic delicacy). *International Journal of Gastronomy and Food Science*, *37*, 100996. https://doi.org/10.1016/J.IJGFS.2024.100996

Rahma, S., & Pratiwi, A. (2023). *Competitiveness and Export Trends of Indonesian Sea Cucumbers*.

Rahman, M. A., Chowdhury, S. H., Hasan, Md. J., Rahman, Md. H., Yeasmin, S. M., Farjana, N., Molla, Md. H. R., & Parvez, Md. S. (2020). Status, Prospects, and Market Potentials of the Sea Cucumber Fisheries with Special Reference to Their Proper Utilization and Trade. *Annual Research & Review in Biology*, 84–101. https://doi.org/10.9734/arrb/2020/v35i730250

Sarfo, C., Fakhar Manesh, M., & Caputo, A. (2024). Exploitative and exploratory search: Dynamic capabilities enhancing SME adaptation, new product development, and environmental performance. *Journal of Small Business Management*. https://doi.org/10.1080/00472778.2024.2418026

Setyastuti, A., Wirawati, I., Hadiyanto, H., Nurjamin, N., Permadi, S., Hadi, T. A., Prayudha, B., Hafizt, M., Vimono, I. B., Iswari, M. Y., Aji, L. P., Ardiansyah, A., Dharmawan, I. W. E., Suratno, S., Islami, M. M., Indriana, L. F., & Sjafrie, N. D. M. (2024). New insights into the diversity, biogeographic distribution, and relationships of commercial sea cucumber species from Indonesia. *Fisheries Research*, *279*, 107124. https://doi.org/10.1016/J.FISHRES.2024.107124

Sipos, N., Rideg, A., Al Najjar, A. S., & Lukovszki, L. (2025). A resource-based view of marketing innovation in SMEs: a multi-country empirical analysis based on the Global Competitiveness Project. *Journal of Innovation and Entrepreneurship*, *14*(1), 94. https://doi.org/10.1186/s13731-025-00573-x

Soto-Acosta, P. (2024). Navigating Uncertainty: Post-Pandemic Issues in Digital Transformation. *Information Systems Management*, *41*(1), 20–26. https://doi.org/10.1080/10580530.2023.2274531

Srisathan, W. A., Ketkaew, C., Jitjak, W., Ngiwphrom, S., & Naruetharadhol, P. (2022). Open innovation as a strategy for collaboration-based business model innovation: The moderating effect among multigenerational entrepreneurs. *PLoS ONE*, *17*(June 6). https://doi.org/10.1371/journal.pone.0265025

Tilley, A., Dam Lam, R., Lozano Lazo, D., Dos Reis Lopes, J., Freitas Da Costa, D., De Fátima Belo, M., Da Silva, J., Da Cruz, G., & Rossignoli, C. (2024). The impacts of digital transformation on fisheries policy and the sustainability of the " ": Lessons from Timor-Leste. *Environmental Science & Policy*, *153*, 103684. https://doi.org/10.1016/J.ENVSCI.2024.103684

Wamba-Taguimdje, S. L., Fosso Wamba, S., Kala Kamdjoug, J. R., & Tchatchouang Wanko, C. E. (2020). Influence of artificial intelligence (AI) on firm performance: the business value of AI-based transformation projects. *Business Process Management Journal*, *26*(7), 1893–1924. https://doi.org/10.1108/BPMJ-10-2019-0411

Wu, C. W., Botella-Carrubi, D., & Blanco-González-Tejero, C. (2024). An empirical study of digital marketing strategy and performance in small and medium-sized enterprises (SMEs). *Technological Forecasting and Social Change*, *200*, 123–142. https://doi.org/10.1016/j.techfore.2023.123142