

Analysis of the Influence of Digital Marketing and Product Innovation on MSME Business Sustainability

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Abstract

This study looks at how digital marketing and product innovation affect the success of small food businesses in Sukabumi City. Many of these businesses struggle because they don't use digital tools enough and don't innovate their products. The study used a method called Structural Equation Modeling (SEM) with Partial Least Square (PLS) through the SmartPLS 4.0 application. The research included 100 food business owners who have been in business for at least five years. The results show that digital marketing helps businesses succeed, with a t-statistic of 4.451 and a p-value of 0.000. Product innovation also helps a lot, with a t-statistic of 6.557 and a p-value of 0.000, showing it is even more important than digital marketing. The R-squared value of 0.989 means that these two factors explain 98.9% of the success of these businesses. This study highlights the need for both digital marketing and product innovation to keep small businesses competitive and successful in the digital age.

Keywords: digital marketing, product innovation, business sustainability, SMEs

1. Introduction

In the framework of globalization, Micro, Small, and Medium Enterprises (MSMEs) play a pivotal role in Indonesia's economy, especially in Sukabumi City, yet they encounter considerable obstacles such as financial issues, labor challenges, innovation deficits, and insufficient marketing strategies (Kasim, 2024). This examination delves into the repercussions of digital marketing and product innovation on the sustainability of food SMEs in Sukabumi City, demonstrating that despite the noteworthy capabilities of MSMEs, their insufficient insight and engagement with digital marketing technologies hinder optimal market operation and effectiveness, thus highlighting a significant academic gap in the pursuit of their sustainability through advanced digital strategies (Armada *et al.*, 2024).

Product innovation significantly impacts consumer engagement, with Azzahra *et al.* (2023) highlighting that unique and aesthetically appealing packaging can greatly improve consumer loyalty towards SME products. Despite this, numerous SMEs neglect the critical importance of innovation in their branding and marketing approaches, which may jeopardize their competitive edge; thus, this study seeks to explore the amalgamation of product innovation with digital marketing strategies to rectify this concern.

This research is crucial due to the COVID-19 pandemic's significant impact on consumer behavior towards digitalization (Eryc, 2023), compelling small and medium-sized enterprises (SMEs) in the food sector to adopt digital strategies for competitiveness, while facing the challenge of sustaining operations in a transformed market; thus, this study seeks to equip SMEs in Sukabumi City with actionable insights to adeptly navigate emerging trends through

the strategic integration of digital marketing and product innovation to ensure business sustainability.

This analysis strives to overcome the knowledge deficiency surrounding digital marketing and product innovation in small enterprises, intending to offer significant insights that reinforce the competitiveness and sustainability of food businesses, thus positively influencing both local and national economies.

2. Literature Review

2.1 Digital Marketing

Digital marketing encompasses activities that utilize digital media, online platforms, and internet technology to boost product visibility and foster customer relationships (Kurdi *et al.*, 2022) . The rise of social media platforms like Instagram and TikTok has revolutionized how micro, small, and medium enterprises (MSMEs) engage with their audience, especially in the food industry, where it serves as a comprehensive strategy for branding, communication, and distribution (mahfud *et al.*, 2023) . The success of digital marketing, which includes content marketing, SEO, and e-commerce, depends on the digital literacy of MSMEs and their capacity to create engaging content, ultimately influencing sales performance and market growth (mahfud *et al.*, 2023 ; Setiadi, Maulana, *et al.*, 2025) .

Digital marketing involves the strategic utilization of digital technologies and platforms, such as social media and websites, to effectively engage consumers and fulfill marketing objectives (Masrianto *et al.*, 2022; Sharabati *et al.*, 2024) .

As articulated by Kotler and Keller (2016), digital marketing encompasses the strategic use of digital channels to market products or services through personalized and timely consumer engagement, thereby cultivating a sustainable customer experience (Santoso *et al.*, 2021) . In the context of micro, small, and medium enterprises (MSMEs), digital marketing serves as an essential instrument for market expansion, enhancing product visibility, and providing a cost-effective promotional alternative to traditional marketing methods (Purwana, Rahmi, and Aditya, 2017) .

2.2 Product Innovation

Product innovation represents a systematic approach to the development and enhancement of new products or the refinement of existing ones, with the objective of delivering added value to consumers and securing a competitive advantage in the marketplace. As articulated by Kotler and Armstrong (2018), product innovation involves the introduction of new goods or services that have undergone substantial improvements in their attributes or anticipated utility (Fitria, 2021) . Fundamentally, product innovation denotes the introduction of new goods or services that have experienced significant enhancements in functionality, materials, and applications. Moreover, product innovation arises from inventive and technological endeavors aimed at creating new and superior products to meet the evolving demands of the market (Fitria, 2021) . Consequently, product innovation emphasizes not only the development of new generations but also the continuous adaptation and improvement of existing offerings (Haryani, Yulius and Limakrisna, 2023) . For micro, small, and medium enterprises (MSMEs), particularly within the food industry, product innovation serves as a vital strategy for survival and growth in an increasingly competitive environment. According to Sari *et al.*(2023) , product innovation in

MSMEs encompasses not only the development of new products but also quality enhancement, design refinement, and brand identity strengthening. Furthermore, in the context of the digital and post-pandemic era, consumer preferences have shifted towards healthier, more practical, and sustainable offerings (Vuttichat and Patchara, 2023). Consequently, product innovation is essential to address these emerging needs, expand market segments, and advance the sustainability of MSME operations.

2.3 Business Sustainability

Business sustainability pertains to an organization's capacity to endure, expand, and deliver lasting value to all stakeholders while preserving resources for the future. It is inherently associated with a stakeholder approach that emphasizes the importance of social and environmental accountability in enhancing stakeholder value (Yadav and Jain, 2023; Kateb and Alahdal, 2024). The framework of business sustainability is primarily established on the Triple Bottom Line (TBL) model, which integrates economic, social, and environmental considerations. (Ardiansyah and Alnoor, 2024). This definition underscores that sustainability transcends financial profit to encompass social responsibility and environmental conservation. Braga *et al.*(2024), business sustainability entails the obligation to satisfy the demands of both direct and indirect stakeholders while safeguarding the capability to respond to future stakeholder aspirations. In the context of Micro, Small, and Medium Enterprises (MSMEs), sustainability reflects the ability of these organizations to persist, adjust to changing market conditions, and reliably maintain their economic and social functions in a way that aligns financial prosperity with environmental conservation and social accountability.

This is compatible with the Triple Bottom Line (TBL) framework, which accentuates the requirement of assimilating economic, social, and environmental dimensions into corporate practices. (Laia *et al.*, 2024).

2.4 Hypothesis Development

2.4.1 Digital Marketing for SME Business Sustainability

Digital marketing constitutes a technology-driven marketing paradigm that leverages the internet, social media, and various online platforms to engage consumers on a large scale, interactively and efficiently (Kurdi *et al.*, 2022 ; Setiadi *et al.*, 2025). According to Yuliyanti & Wulandari (2023), the strategic implementation of digital marketing holds the potential to enhance business performance through increased brand visibility, efficient customer communication, and cost-effective promotional activities. Within the context of business sustainability, the proliferation of digital marketing enables Small and Medium Enterprises (SMEs) to sustain sales continuity, cultivate enduring relationships with consumers, and adeptly respond to shifts in consumer behavior (Wijaya *et al.*, 2022). This is consistent with the Dynamic Capabilities Theory proposed by Teece *et al.* (1997), which underscores the significance of technological adaptation as a means to sustain competitive advantage in business. The theory posits that organizations must possess the capacity to integrate, develop, and reconfigure their internal and external resources in accordance with fluctuating market dynamics (Zahra and Mudambi, 2025). Furthermore, as noted by Munir *et al.* (2023), digital marketing facilitates the expansion of both local and global market reach, thereby creating broader opportunities for business growth. Sustainability encompasses not only economic

considerations but also the capacity of SMEs to adapt to technological advancements and changes in consumer behavior (Meng *et al.* , 2023) .

Drawing upon the preceding theoretical discussion, the subsequent research hypotheses may be articulated :

H1: Digital marketing has a positive effect on SME sustainability.

2.4.2 Product Innovation on the Sustainability of SMEs

Product innovation constitutes a systematic approach to the creation and enhancement of products, with the objective of augmenting their value, quality, and market competitiveness (Maragita, Rahayu and Indrawan, 2024) .). As articulated by Kotler and Keller (2016), product innovation is pivotal in ensuring the market success of products while concurrently addressing the evolving needs of consumers. This perspective is consistent with Schumpeter's (1934) assertion that innovation serves as a fundamental driver of economic progress and the formation of competitive advantage (Khotob and Prathisara, 2023) . In the field of corporate sustainability, product innovation is instrumental in empowering firms to adjust to transforming consumer inclinations and volatile market conditions; through these developments, Micro, Small, and Medium Enterprises (MSMEs) can uphold the relevance of their goods, increase their consumer demographics, and foster long-term economic value. This is affirmed by the results obtained by Maragita *et al.* (2024) , which indicate that technological advances enhance efficiency and productivity while addressing sustainability challenges often faced by MSMEs. Within this framework, sustainable product innovation emphasizes not only financial gains but also ethical responsibility and ecological sustainability. The Resource-Based View of Theory (Barney, 1991) asserts that innovation serves as a unique and essential resource, which can enhance persistent competitive advantage for firms (Prasetyo, Wardoyo, and Budiati, 2023) . Product innovation is a key determinant of MSME sustainability (Hu and Kee, 2021) because innovative products not only engage consumers but also enhance business value. A study by Nursal *et al.* (2022) demonstrates that self-efficacy and entrepreneurial motivation significantly increase the success of culinary companies that utilize digital marketing, thereby indicating that the synergy between product innovation and digital marketing substantially influences the sustainability and expansion of SMEs (Yudawisastra *et al.*, 2023) .

Based on this theoretical framework, the hypotheses proposed are:

H2: Product innovation has a positive effect on the sustainability of SMEs

Based on the development of the above hypothesis, the research framework is described as follows:

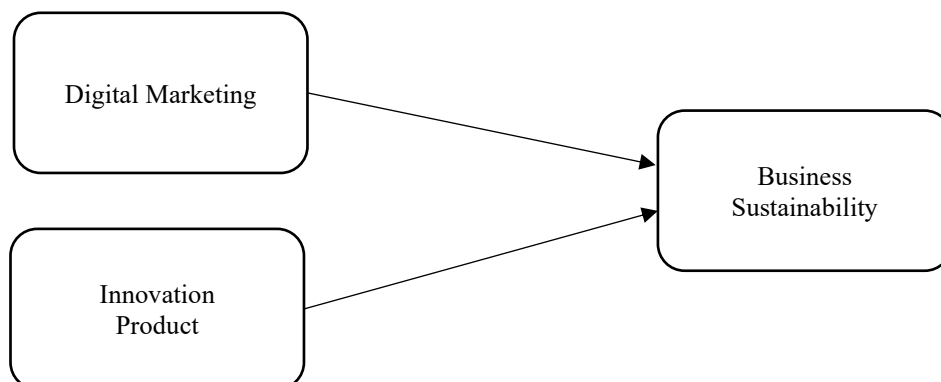


Figure 1. Research Framework

3. Materials and Methods

3.1 Research Design

This research endeavor utilizes a quantitative analytical framework to meticulously investigate the intricate relationship between the realms of digital marketing and product innovation, particularly in terms of their consequential effects on the sustainability and long-term viability of small enterprises operating within the geographical confines of Sukabumi City. In order to achieve a high degree of precision and reliability in the outcomes of this study, the analytical procedures are meticulously executed through the application of Partial Least Square (PLS)-based Structural Equation Modeling (SEM), leveraging the advanced capabilities of SmartPLS version 4.0 to facilitate comprehensive data interpretation and validation. By employing this sophisticated methodological approach, the study aspires to contribute significantly to the existing body of knowledge concerning the strategic factors that underpin the sustainability of small businesses in an increasingly digital and innovative marketplace.

3.2 Population and Sample

This study examines the food industry in Sukabumi City, which includes 861 business entities (opendata.sukabumikota.go.id), using non-probability sampling based on criteria including a minimum capital of IDR 10,000,000, a minimum business tenure of five years, and the respondent's status as a business owner, resulting in the selection of 100 entrepreneurs who met the criteria for this study.

3.3 Data Collection Methods

This study examines three variables: Digital Marketing and Product Innovation, which serve as the independent variables, and Business Sustainability, which functions as the dependent variable. The research employs a quantitative methodology, utilizing an online survey administered via Google Forms. The survey incorporates a Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree) to assess the degree of agreement with each statement.

3.4 Data Analysis Techniques

This analysis adopts a quantitative methodology utilizing Partial Least Square (PLS) Structural Equation Modeling (SEM) through SmartPLS 4.0 to examine the correlations among digital marketing, product innovation, and MSME sustainability, implementing an SEM-PLS framework that incorporates an outer model for the validation of latent construct indicators and an inner model for the exploration of convergent and discriminant validity, in addition to reliability assessments such as Composite Reliability and Cronbach's Alpha. (Ciavolino *et al.*, 2021) (Legate, Ringle and Hair, 2023; Imtihansyah *et al.*, 2024) . The bootstrap method is employed in hypothesis testing to address data that do not conform to a normal distribution. This technique facilitates parameter estimation through resampling, thereby enhancing test accuracy even when the data deviate from normality (Zhang and Wu, 2024; Bader and Moshagen, 2025) . The acceptance of a hypothesis is contingent upon the condition that the computed t-statistic surpasses the critical threshold of 1.96, while simultaneously the associated p-value remains below the conventional alpha level of 0.05. This particular statistical scenario signifies that the alternative hypothesis, often denoted as H_a , is deemed to be accepted, thereby necessitating the rejection of the null hypothesis, represented as H_0 , since the empirical findings exhibit a level of significance that is consistent with the pre-established criteria. The implications of this result are profound, as they suggest that the data provide sufficient evidence to support the proposed alternative framework, thus challenging the validity of the initial presumption encapsulated within the null hypothesis at the specified significance threshold.

4. Results

4.1 Testing with the Measurement Model (Outer Model)

In empirical investigations, measurement or external models fundamentally evaluate the validity and reliability of research tools while elucidating the correlation between indicators and their associated latent variables, thus confirming that these tools faithfully depict the concepts under scrutiny through stringent evaluation (Fithri *et al.*, 2024; Subhaktiyasa, 2024). In this study, the measurement method used is:

4.1.1 Validity Test

This study employs a convergent and discriminant validity framework for validity assessment, wherein the former examines inter-indicator relationships within a construct and the latter ascertains the construct's distinctiveness to mitigate semantic overlap among study variables (Yang, 2023).

4.1.1.1 Convergent Validity

Convergent validity serves as a fundamental criterion for assessing the effectiveness of research instruments in SmartPLS analysis (Carlos Rodr'Íguez *et al.*, 2024), necessitating the evaluation of factor loading values, where a minimum of 0.70 is deemed suitable for confirmatory research, alongside an Average Variance Extracted (AVE) exceeding 0.50 to substantiate validity, as depicted in Figure 2:

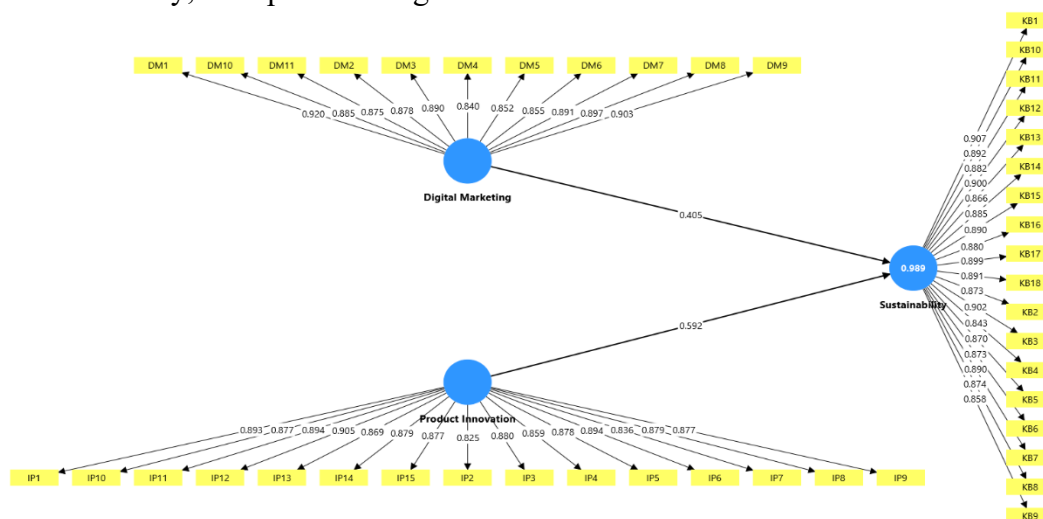


Figure 2. Outer Model

Source: processed using SMART PLS4 (2025)

Figure 2 illustrates the convergent validity findings derived from the PLS software analysis, showing that the construct achieves convergent validity when its factor loadings exceed 0.70 and AVE exceeds 0.5, as detailed in the test results:

Table 1. Final Factor Loadings

Variable (Symbol)	Indicator	Factor Loadings	Notes
Digital Marketing (X1)	X1.1	0.920	Valid
	X1.2	0.878	Valid
	X1.3	0.890	Valid
	X1.4	0.840	Valid
	X1.5	0.852	Valid

	X1.6	0.855	Valid
	X1.7	0.891	Valid
	X1.8	0.897	Valid
	X1.9	0.903	Valid
	X1.10	0.885	Valid
	X1.11	0.875	Valid
Product Innovation (X2)	X2.1	0.893	Valid
	X2.2	0.825	Valid
	X2.3	0.880	Valid
	X2.4	0.859	Valid
	X2.5	0.878	Valid
	X2.6	0.894	Valid
	X2.7	0.836	Valid
	X2.8	0.879	Valid
	X2.9	0.877	Valid
	X2.10	0.877	Valid
	X2.11	0.894	Valid
	X2.12	0.905	Valid
	X2.13	0.869	Valid
	X2.14	0.879	Valid
	X2.15	0.877	Valid
Business Sustainability (Y)	Y1	0.907	Valid
	Y2	0.873	Valid
	Y3	0.902	Valid
	Y4	0.843	Valid
	Y5	0.870	Valid
	Y6	0.873	Valid
	Y7	0.890	Valid
	Y8	0.874	Valid
	Y9	0.858	Valid
	Y10	0.892	Valid
	Y11	0.882	Valid
	Y12	0.900	Valid
	Y13	0.866	Valid
	Y14	0.885	Valid
	Y15	0.890	Valid
	Y16	0.880	Valid
	Y17	0.899	Valid
	Y18	0.891	Valid

Source: Data processed by researcher (2025)

Based on Table 1, factor loading analysis shows that all manifest variables have values exceeding 0.70, thus confirming the validity and applicability of all indicators in this study.

Table 2. AVE Values

Variable	AVE Values
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Digital Marketing	0.776
Product Innovation	0.766
Business Sustainability	0.778

Source: Data processed by researcher (2025)

The results in Table 2 indicate that all variables possess an Average Variance Extracted (AVE) above the 0.5 threshold, thereby affirming their convergent validity and demonstrating the efficacy of the indicators in representing their latent constructs, which substantiates the ability of the manifest variables to elucidate the measured constructs and provides a robust foundation for subsequent analysis in this research.

4.1.1.2 Discriminant Validity

Discriminant validity was evaluated through the analysis of Cross Loading Factors and the comparative assessment of Average Variance Extracted (AVE) values against latent variable correlations, demonstrating validity when indicators exhibited greater correlations with their corresponding constructs compared to alternatives, as delineated in the subsequent table of Cross Loading test results:

Table 3 Cross Loading Factor

Indicator	Digital Marketing (X1)	Product Innovation (X2)	Sustainability (Y)
DM1	0.920	0.912	0.917
DM2	0.878	0.872	0.878
DM3	0.890	0.866	0.868
DM4	0.840	0.832	0.826
DM5	0.852	0.858	0.860
DM6	0.855	0.856	0.847
DM7	0.891	0.879	0.882
DM8	0.897	0.887	0.883
DM9	0.903	0.890	0.892
DM10	0.885	0.877	0.886
DM11	0.875	0.858	0.860
IP1	0.883	0.893	0.893
IP2	0.804	0.825	0.803
IP3	0.863	0.880	0.864
IP4	0.851	0.859	0.853
IP5	0.865	0.878	0.872
IP6	0.904	0.894	0.897
IP7	0.826	0.836	0.831
IP8	0.864	0.879	0.867
IP9	0.870	0.877	0.875
IP10	0.875	0.877	0.877
IP11	0.872	0.894	0.873
IP12	0.904	0.905	0.911
IP13	0.859	0.869	0.865
IP14	0.884	0.879	0.873
IP15	0.860	0.877	0.867
KB1	0.895	0.898	0.907

KB2	0.868	0.866	0.873
KB3	0.901	0.897	0.902
KB4	0.833	0.832	0.843
KB5	0.857	0.857	0.870
KB6	0.865	0.866	0.873
KB7	0.882	0.894	0.890
KB8	0.868	0.859	0.874
KB9	0.833	0.847	0.858
KB10	0.882	0.876	0.892
KB11	0.875	0.869	0.882
KB12	0.903	0.898	0.900
KB13	0.865	0.866	0.866
KB14	0.874	0.874	0.885
KB15	0.890	0.903	0.890
KB16	0.854	0.864	0.880
KB17	0.909	0.905	0.899
KB18	0.871	0.885	0.891

Source: Data processed by researcher (2025)

Table 3 presents the Cross Loading Factor values, demonstrating a strong correlation between each latent construct and its corresponding indicators, thereby affirming the validity of the indicators employed in evaluating latent variables..

4.1.2 Reliability Test

Composite Reliability (CR) and Cronbach's Alpha (CA) serve as two evaluative measures for assessing the reliability of Partial Least Square (PLS):

Table 4. CA and CR

Variable	CA	CR	Conclusion
Digital Marketing	0.971	0.971	Reliable
Product Innovation	0.978	0.978	Reliable
Business Sustainability	0.983	0.983	Reliable

Source: Data processed by researchers (2025)

The findings indicate robust reliability of the research data, demonstrated by a Composite Reliability (CR) greater than 0.7 and a Cronbach's Alpha (CA) above 0.6, alongside Structural Model testing employing path coefficient analysis and bootstrap methodology to assess and confirm the significance of latent variable relationships:

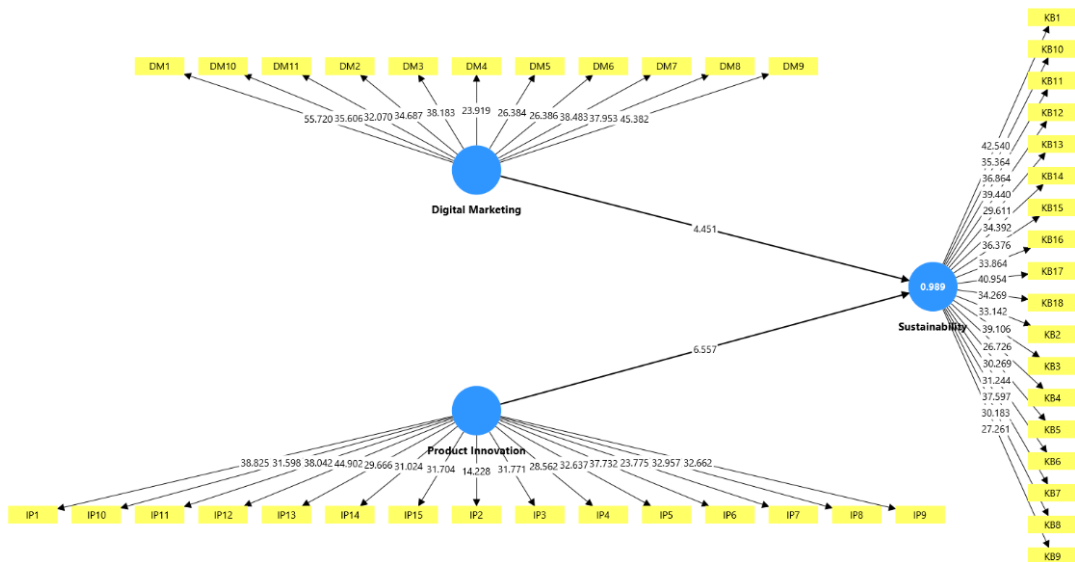


Figure 3. Bootstrapping
Source: processed by Smart PLS 4 (2025)

Figure 3 delineates the Path Coefficients derived from t-statistic analysis, where significance is indicated by values surpassing 1.96 in a two-tailed assessment; the results illustrate that digital marketing (X1) manifests a t-statistic of 4.451, whereas product innovation (X2) reveals a markedly higher t-statistic of 6.657, thereby substantiating the preeminent impact of product innovation on business sustainability and validating the research hypothesis.

Table 5. R Square Results

Variable	R-squared	Adjusted R-Square
Business Sustainability	0.989	0.988

Source: Data processed by researcher (2025)

The R-squared statistic of 98.9% for Business Sustainability, derived from the analysis of dependent variables, signifies that Digital Marketing and Product Innovation account for this notable variance, thereby highlighting the model's robust predictive ability and the substantial effect of independent variables, while also recognizing the potential influence of unexamined external factors in this research.

The Goodness of Fit (GoF) evaluation reveals that a model with an SRMR value under 0.10 is deemed acceptable, while an SRMR below 0.08 is classified as exemplary, thereby illustrating the model's efficacy in representing variable interrelations and reflecting significant data congruence with negligible residual discrepancies. (Legate, Ringle, & Hair, 2023; Imtihansyah *et al.*, 2024) .

Table 6. Q-Square

Variable	Saturated Model	Estimated Model
SRMR	0.031	0.031

Source: Data processed by the researcher (2025)

The SRMR value of 0.031 from the GoF test signifies an exemplary fit for the study model, as it satisfies the thresholds for both a competent (SRMR \leq 0.08) and a superior model (SRMR \leq 0.05), thereby reflecting negligible discrepancies between the observed and predicted covariance matrices and reinforcing the model's efficacy in elucidating the interrelations among

digital marketing, product innovation, and the sustainability of MSME enterprises.

4.1.3 Hypothesis Testing

The hypothesis testing commenced subsequent to confirming data adherence to measurement standards via the bootstrap method in the Smart PLS4 software, which is distinguished by its non-requirement for normal distribution or substantial sample sizes (Xu *et al.*, 2023). The analysis emphasizes the evaluation of path coefficients, t-values, and p-values to ascertain variable interrelations and assess the significance level of each parameter within the research model.

Table 6. Path Significance Test

Relationship	Original Sample (O)	T-Statistic ((O/STDEV))	P-value
Digital Marketing (X1) → Business Sustainability (Y)	0.405	4.451	0.000
Product Innovation (X2) → Business Sustainability (Y)	0.592	6.557	0.000

The investigators employed a 95% confidence interval, suggesting that in a two-tailed hypothesis evaluation, a Path Coefficient is deemed significant when the t-statistic surpasses 1.96, thereby informing conclusions regarding the direct relationship among the analyzed variables as detailed in the accompanying table.

4.1.3.1 The Effect of Digital Marketing on Business Sustainability (H1)

The comprehensive analysis conducted in this study employs the t-value statistic as a methodological tool to rigorously assess the validity of the proposed hypothesis, which pertains to the significant influence exerted by digital marketing on the overarching concept of corporate sustainability, resulting in the calculation of a t-value of 4.451, which notably surpasses the critical threshold value of 1.96, and is accompanied by an impressively low p-value of 0.000, thereby indicating a remarkable level of statistical significance that falls well below the conventional alpha level of 0.05; these compelling findings not only serve to robustly validate the first hypothesis (H1) but also provide empirical evidence that highlights a profound and substantial correlation between the implementation of digital marketing strategies and the promotion of sustainable business practices, as evidenced by an estimated coefficient of 0.405, which further emphasizes the vital and indispensable role that digital marketing plays in the enhancement and advancement of sustainability within the realm of contemporary business operations.

4.1.3.2 The Effect of Product Innovation on Business Sustainability (H2)

The occurrence of product innovation serves an exceptionally crucial role in enhancing the sustainability of various business firms, a fact that is compellingly evidenced by a calculated t-value of 6.557, which significantly exceeds the established critical value of 1.96, and furthermore, is accompanied by a p-value of 0.000 that is well below the recognized significance threshold of 0.05, thereby providing robust support for the hypothesis H2, as this analysis is further emphasized by a substantial correlation coefficient of 0.592 that not only

denotes but also elucidates the complex relationship between the improvement of product innovation and the subsequent sustainability of business growth trajectories.

5. Discussion

5.1 The Impact of Digital Marketing on Business Sustainability

As evidenced by the meticulous path significance analysis delineated in Table 6, the variable that pertains to Digital Marketing, which is denoted as (X1), exhibits an initial sample value that has been quantified at the noteworthy figure of 0.405, a finding that is further complemented by a remarkably high t-statistic of 4.451, in addition to an exceptionally low p-value of 0.000. These statistical indicators, when considered in conjunction, compellingly demonstrate that the computed t-statistic considerably surpasses the critical threshold value of 1.96, while at the same time, the p-value is situated well beneath the conventional significance level of 0.05. Consequently, it is entirely reasonable to infer that digital marketing exerts a distinctly affirmative and statistically significant impact on the sustainability of business operations. To elaborate further, the increased integration and adoption of digital marketing strategies among micro, small, and medium enterprises (MSMEs) is intricately linked to an enhanced ability to attain long-term growth trajectories and sustainable development objectives. These empirical findings resonate harmoniously with the scholarly investigation conducted by Ratnasari et al. (2022), which persuasively demonstrated that the strategic and effective use of a variety of digital platforms—including but not limited to online marketplaces, social media networks, and bespoke websites—consistently contributes to improved sales performance and the fostering of customer loyalty, thereby fortifying the competitive positioning of small and medium-sized enterprises within the broader marketplace landscape. In a related context, the recent scholarly work undertaken by Nesterenko et al. (2023) further corroborates the assertion that digital marketing is an essential component in ensuring the survival and prosperity of business entities in an era increasingly defined by digital transformation. This is particularly pertinent given its remarkable efficacy in engaging a diverse and extensive consumer demographic while maintaining a relatively low cost, which presents significant advantages for firms navigating this complex digital landscape.

5.2 The Impact of Product Innovation on Business Sustainability

According to the extensive and exhaustive research findings that have been painstakingly gathered, scrutinized, and analyzed over time, the comprehensive assessment of the Product Innovation (X2) variable has yielded an original sample value that has been quantitatively measured to be precisely 0.592, a figure that is further accompanied by a t-statistic that registers a remarkably impressive value of 6.557, alongside an extraordinarily low p-value of 0.000, which collectively serve to convincingly affirm that all established significance criteria have been meticulously satisfied and thus rendered valid. This particular set of statistical metrics strongly suggests and indicates that product innovation occupies a crucial and pivotal role, exerting a distinctly positive and statistically significant influence on the long-term sustainability and viability of businesses within dynamic market environments. In a more specific context that warrants attention, the enhancement and augmentation of the capabilities of Micro, Small, and Medium Enterprises (MSMEs) to systematically develop, innovate, and fine-tune various facets of product innovation—including but not limited to aspects such as design, packaging, taste, and the incorporation of added value—directly correlates with a

substantial and notable increase in the sustainability and operational efficacy of their business practices and activities. These compelling and persuasive findings lend considerable and substantial support to the assertions articulated in the seminal and influential study conducted by (Sujarwoto *et al.*, 2022) which posits that product innovation is not merely beneficial but is, in fact, essential for the maintenance and preservation of business viability amidst the ever-evolving landscape of consumer preferences and the formidable challenges posed by intense and fierce market competition; furthermore, it is important to highlight that the relentless pursuit of continuous innovation holds the profound and transformative potential to significantly enhance product appeal from a consumer's perspective, while simultaneously reinforcing and fortifying the competitive market position of Micro, Small, and Medium Enterprises, as compellingly evidenced by the research contributions (Najib *et al.*, 2021; Harsanto *et al.*, 2023).

In conclusion, the interplay between product innovation and business sustainability underscores a critical area of focus for both scholars and practitioners alike, as businesses strive to navigate the complexities of modern economic landscapes. Thus, it becomes imperative for MSMEs to embrace innovative practices as a strategic imperative for achieving enduring success and resilience in an increasingly competitive marketplace.

6. Conclusion

The analysis indicates that both digital marketing and product innovation significantly promote the sustainability of micro, small, and medium enterprises (MSMEs) in Sukabumi City, with the former enhancing market engagement and customer relations, while the latter adds value and boosts competitiveness. The R-squared value of 0.989 underscores the model's robust predictive capacity, suggesting that the success of SMEs in the digital age hinges on adept marketing technology use and innovative product strategies, warranting enhanced support from government entities for training and innovation initiatives..

6.1 Implications

The results of this research advance the comprehension of Dynamic Capability Theory and Resource-Based View, highlighting the imperative for organizations to adeptly manage resources to achieve sustainable competitive advantage, while providing empirical support that SMEs' capacity to embrace digital technology and innovate products constitutes a crucial dynamic capability in the current digital era, thus enriching the discourse on the correlation between digital marketing and product innovation as essential components for business sustainability, particularly for SMEs in the expanding global digital economy, leading to recommendations for policies that bolster the digital ecosystem for SMEs through stakeholder collaboration to cultivate an innovative and resilient business milieu.

6.2 Recommendations

The research highlights the necessity for micro, small, and medium enterprises (MSMEs) to enhance their engagement through digital platforms and innovate in product offerings to adapt to market dynamics. It further emphasizes the importance of government agencies providing training in digital methodologies and fostering collaborations between MSMEs, academia, and tech startups, while encouraging future research to encompass diverse SME sectors and employ mixed-methods for a comprehensive analysis of digital marketing and innovation.

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