

Assessing the sustainability of SMEs and the influence of online business practices

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Abstract: This research aimed to develop a new model for evaluating and predicting the sustainability of Jakarta's small and medium-sized enterprises (SMEs). To achieve this objective, a total of 145 SME owners in the city were surveyed, gathering information on the sustainability of the businesses. The data obtained underwent processing using a variance-based structural equation model facilitated by the Partial Least Squares (PLS) application. The findings showed that several factors, including the adoption of new technology, the use of digital marketing, the digital literacy of owners, enhancement of product quality, business location, pricing strategy, and service quality, influenced the newly proposed model of SMEs' business sustainability. Additionally, the research showed that implementing digital marketing had the most significant impact on SMEs' sustainability. This underscored the crucial role of digital marketing literacy for owners in achieving high business performance while ensuring sustainability. The implications derived from the results focused on the need to enhance and reinforce digital literacy among SME owners. This was achieved through training programs that addressed data analytics implementation and leveraging the internet to support online product marketing and sales.

Keywords: business sustainability; digital marketing; online sales

1. Introduction

Business sustainability has evolved dynamically over the past twenty years (Meressa, 2023; Paduraru, 2023). Several research studies assess business sustainability based on three main elements: how a company can contribute to environmental preservation, improve social life, and achieve high economic performance (Jamil et al., 2023). Various technological advancements and the widespread use of the Internet have become critical topics associated with contemporary discussions on business sustainability (Bachtiar et al., 2023). In recent years, research on business sustainability has often been associated with business strategies and marketing programs (Bosco et al., 2023). Some studies successfully identify the crucial role of competitive strategy formulation in the success of product and service sales (Asongu et al., 2023; Muafi and Sugarindra, 2023). Other research also found that several interrelated factors influence business sustainability.

Leadership is essential in creating business sustainability, as leaders are perceived as individuals who can provide direction for the company in achieving the organization's objectives (Siregar et al., 2023). Additionally, continuous improvement is widely recognized as a crucial element in creating business sustainability (Magd and Jonathan, 2022). Sustainability positively influences continuous improvement, granting companies a time advantage to secure financial benefits before being

replicated by competitors, as observed in some studies (Amoah et al., 2023). Continuous improvement is a highly effective strategy for creating a distinct separation from competitors attempting to imitate particular products or services (Fadhillah et al., 2023).

Recent research in business sustainability is closely associated with Internet use (Mieszajkina et al., 2023). The Internet is recognized as a fundamental instrument in the global digital business environment and is extensively used across various businesses, including SMEs in different countries (Fahrughazi and Kamaluddin, 2021). This technology is instrumental, with various research confirming the impact on SMEs' performance and market expansion, mainly through internet usage and collaboration with Android applications (Pollák and Markovič, 2021; Shukla et al., 2021). SMEs increasingly leverage the Internet for product promotion, sales transactions, and customer relations (Alam and Adeyinka, 2021). SME owners in numerous regions heavily depend on the Internet to reach buyers swiftly and facilitate accurate transactions (Handoyo et al., 2023). This reliance has significantly aided SMEs in marketing products internationally and establishing connections with potential buyers.

In parallel, other scholars reiterate the necessity for digital literacy among business owners and individuals engaged in daily processes (Lasmono and Urumsah, 2022; Marpaung et al., 2022). These competencies greatly support high sales performance and positively impact sustainability. Beyond startups, business sustainability challenges are often initiated by young entrepreneurs in addition to SMEs (Indiani and Fahik, 2020). Startups commonly encounter setbacks and financial difficulties within a few years of establishment (Jeremiah, 2022; Ma et al., 2022). This trend typically occurs due to inadequate market research during the initiation of new ventures, with startups often following short-term trends (Wiyadi et al., 2020).

The downfall of startup businesses is further influenced by pricing and service quality considerations (Kissi et al., 2022; Wang and Li, 2020). In the case of Indonesia, for instance, where consumers show high price sensitivity due to limited purchasing power, small businesses and startups that set premium prices were found to be less attractive to consumers. Despite heavy reliance on the Internet and applications, many startups face bankruptcy due to intense competition and a lack of product innovation (Kuri, 2021; Popescu et al., 2020).

While the Internet remains a crucial factor in the contemporary business landscape, specific weaknesses in infrastructure can disrupt processes (Bryan, 2020; Ben et al., 2020). Identified weaknesses include uneven internet infrastructure quality across regions, reliance on cellular data, relatively high internet subscription costs in certain countries, and low network quality (Chuen and Topimin, 2023; Li et al., 2020). Furthermore, small businesses face challenges using the Internet for online transactions when the owners fall behind in technological advancements (Dörr et al., 2023; Kim and Park, 2021), preferring manual transactions, including cash, and relying on positive word-of-mouth promotion. From an economic perspective, SMEs play a crucial role in Indonesia's economy. However, many SMEs have not fully leveraged digital technology in their business operations. According to a survey conducted by the Ministry of Cooperatives and SMEs in 2021, only 30% of the total 64.2 million SMEs in Indonesia have implemented digital marketing strategies

(Ministry of Cooperatives and SMEs, 2021). This indicates that many SMEs are still not utilizing digital technology. Based on a report from Bank Indonesia in 2022, the literacy and financial inclusion rate for SME participants in Indonesia is only 38.03%. One of the reasons for this low figure is the lack of understanding and skills among SMEs in utilizing digital financial services (Bank Indonesia, 2022). According to a survey by the Indonesian Internet Service Providers Association (APPSI) in 2021, only 48% of businesses in Indonesia have a website for their operations. This highlights that many SMEs have yet to utilize websites for digital marketing (APPSI, 2021).

Despite the extensive research on business sustainability, the role of the internet as a tool and medium for SMEs to build sustainability is still limited. The implementation of digital marketing concepts and the digital knowledge of SME owners are also challenging to find in the primary literature. Therefore, this research is crucial to promoting a new model of business sustainability that enhances the literature from a different perspective. The resulting model contributes to knowledge for business practitioners, specifically SMEs. This research will address several crucial research inquiries outlined below to accomplish the stated objectives.

- 1) What is the new business sustainability model can practitioners use to achieve high performance?
- 2) Within this new model, which characteristic exerts the most significant influence in fostering business sustainability?
- 3) What measures have SME owners implemented to improve sustainability?

1.1. Literature

1.1.1. The use of the internet and digital business for building sustainability

Many small-scale businesses with fewer than ten employees implemented online and manual operations (Kurniasari et al., 2023). The internet's use in small-scale business activities was commonly adopted for ordering and purchasing transactions through applications (Widagdo and Sa'diyah, 2023). In Indonesia, the GoFood application gained widespread popularity for purchasing food and beverages, offering convenience and speed in daily necessities ordering (Zahara et al., 2022).

From the seller's perspective, collaborating with application companies, such as GoFood, significantly aided in sales and product promotion. Sellers accustomed to traveling to sell products could now stay in a location and await online orders (Krisnanto et al., 2023). Regarding equipment investment, only two main tools were needed, namely (1) Gadgets such as smartphones and (2) Internet data, which can also be easily purchased online. With these two tools as capital, businesses could be quickly and conveniently launched (Yubo et al., 2022).

Several research studies have shown that internet-based sales or online businesses have the potential to stimulate sales (Qiu, 2022; Sahabuddin et al., 2023). Additionally, customer satisfaction after purchasing products was generally good, with customer testimonials in the application's comments section (Lettner et al., 2022). Despite occasional customer dissatisfaction with online applications, the total phenomenon of online sales transformed how transactions are conducted (Chao, 2022; Homburg and Wielgos, 2022).

Business owners were required to have digital literacy when using the internet for online sales. However, the knowledge was not widely accessible as it was typically taught at the university level (Pizzichini et al., 2023). Digital literacy was necessary to ensure the business process's security and compliance with the law. Additionally, it helped business owners anticipate the possibility of encountering common issues in the daily buying and selling processes. Among the numerous advantages of the Internet in online business, the most significant benefits were broader promotion and a larger consumer market than businesses without a digital landscape. Using the Internet in business contributed to a cleaner environment as consumers could purchase from home, reducing vehicle emissions (Yawised et al., 2023). It also contributed to the social aspect with the engagement of many parties in product delivery and fostered sales compared to before. Based on these findings, several hypotheses were formulated.

H1: Adoption of new technology had an impact on business sustainability.

H2: The application of online sales affected business sustainability.

H3: The extent to which digital literacy influenced business sustainability.

1.1.2. Product quality, price, and service as determinants of sustainability

In online and traditional businesses, achieving high performance depends on product quality (Techarattanased et al., 2022). Numerous parts of the literature showed that high product quality empowered sellers to apply premium prices (Rambe and Khaola, 2023), providing a competitive edge and outpacing competitors (Widayati et al., 2023). In practice, product quality is connected to various elements, such as raw materials, manufacturing processes, quality assurance, innovation, and design (Ansary et al., 2023). Conversely, poor product quality threatened sustainability, as low-quality products created negative consumer experiences, prompting customers to seek alternatives and disseminate unfavorable information to other consumers (Mulady and Sumadi, 2023).

Regarding product quality, sellers must also consider the right pricing strategy in online business. The online sales process included multiple entities such as shipping companies, application companies, resellers, and other vendors whose margins needed careful calculation (Ahmed et al., 2023). Online sales introduced intense competition with numerous sellers on the same application for the same product, necessitating sellers to set prices strategically with well-calculated margins. Online applications allow potential buyers to compare prices, making price differences noticeable quickly.

Concerning customer service, distinctions exist between online and physical businesses (Bae et al., 2022). In physical businesses, customer service often occurs face-to-face, intensifying the nature and heavily relying on the perceived individual competence of the customer. In online businesses, customer service takes various forms, including online comment and rating sections, to gauge customer satisfaction, speed of response to questions, complaints, and feedback, as well as services such as product warranties and ease of warranty claims processing. In specific cases, service extended to technical assistance, with sellers providing real-time guidance through video or specific tutorials. Based on these findings, several hypotheses could be articulated as follows:

H4: Improved product quality influenced business sustainability.

H5: Service quality had an impact on business sustainability.

H6: Product price affected business sustainability.

1.1.3. Contribution of business location to sustainability

Location has evolved as a crucial factor that influences business sustainability (Rambe and Khaola, 2023). Research conducted by Thaothampitak et al. (2023) and Daniel and Owen (2022) showed location’s significant role in business success. Stores or retailers in strategic and easily accessible locations for consumers had a greater chance of achieving high business performance. In other words, business owners had to consider the impact of location on product sales carefully.

Further research showed that an accessible location not only facilitated physical purchases but also contributed to the overall success of a business (Surinwarangkoon et al., 2023). Location plays a significant role in promoting and selling specific products or services (Behera and Mishra, 2017), particularly in cases such as luxury products requiring a sales location that correlates with the price point. In online sales, location remained a crucial consideration for consumers when purchasing products (Wei et al., 2020), allowing online applications to connect buyers to sellers nearest each other. This feature simplified the decision-making process for buyers, although it did influence shipping costs. The distance between the seller’s location and the consumer directly impacted shipping costs, potentially affecting the seller’s sustainability. Additionally, location also contributed to efforts to reduce pollution by minimizing consumer mobility on roads, thereby positively impacting sustainability (Chen et al., 2020). Based on these findings, hypotheses were formulated in the following manner.

H7: Business location had an impact on business sustainability.

The business sustainability model to be analyzed in this research is depicted in the picture below (**Figure 1**).

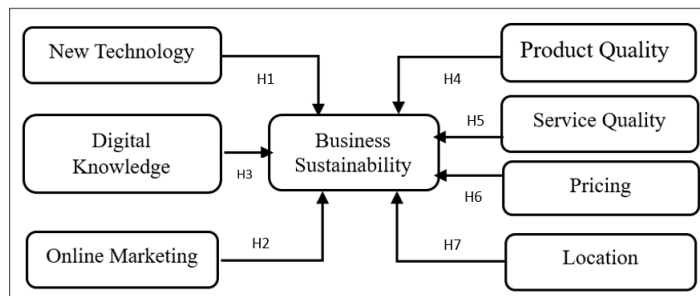


Figure 1. Conceptual framework.

2. Materials and methodology

The research included 140 SME owners in Jakarta who had been selling products on Tokopedia and GoFood applications for over a year. The SME owners comprised 60 from the food sector, 30 from fashion, 30 from electronics, and 20 from toys and hobbies. These four sectors were chosen because they have high online application transactions, as evidenced by hundreds of daily transactions. To obtain a new model for planned business sustainability, data from SME owners were processed using Partial Least Squares and Structural Equation Model (PLS-SEM). This method

correlated with the research objective, aimed to test the structural model still in the stage of theory development (Tilahun et al., 2023). The research also examined the relationships of seven exogenous latent variables with the business sustainability of SMEs. These seven variables comprised adopting new technology, applying digital marketing, digital literacy, improved product quality, location, pricing strategy, and service quality. Additionally, 64 observed indicators from all variables were evaluated by examining the outer loading scores of each indicator. The inner and outer models underwent a thorough evaluation to determine the adequacy of the structural model. Hypothesis testing was carried out using standard *T* statistics and *P*-values. The observed indicators in this research were adopted from various relevant references, with detailed explanations in **Table 1** below.

Table 1. Observed variables and indicators.

Variable	Observed indicator	References
Adoption of new technology	Subscribing to the internet	Tripathi, S., and Rode, P. (2023) Højlund, H. and Villadsen, K. (2020)
	Installing a Wi-Fi device	
	Registering as an online partner	
	Online transaction	
	Installing application	
Application of digital marketing	Profile picture	Olson E. M., et al. (2021) Daoud, M. K., et al. (2021) Gutu, T., et al. (2023)
	Product Description	
	Comment space	
	Online promotion	
	Content layout	
Digital literacy	Internet function	Rapaccini, M., et al. (2023) Borodako, K., et al. (2021) Shiau, W. L., et al. (2023)
	Taxation	
	Transaction process	
	Copyrights	
	Online Ethics	
	Data analysis	
Improved product quality	Overall quality	Rambe, P. and Khaola, P. (2023) Islahuben, I., et al. (2023) Thakur, M., et al. (2023)
	Updated design	
	Taste	
	Durability	
	Safe product	
Location	Distance from customer	Kik, D., et al. (2023) Thomä, J. (2023) Eze, S. C. et al. (2023)
	City centre	
	Online map covered	
	Business area	

Table 1. (Continued).

Variable	Observed indicator	References
Pricing strategy	Discount	
	Special Price	de Matta, R. and Lowe (2023)
	Bundling price	Hou, W., et al. (2023) Joshi, R., et al. (2023)
	Price amid competitor	
Service quality	Warranty claim	
	Customer service	
	Delivery options	Chen, S., et al. (2023)
	Online chat	Kuo, Y. C., (2023) Mulyadi, M., et al. (2023)
	Refund option	
	Online payment flexibility	
Business sustainability	Environmental aspect	Paduraru, T. (2023)
	Economic aspect	Muafi, M., and Sugarindra, M. (2023)
	Social aspect	Jiao, X. (2023)

The observed indicators, presented in **Table 1**, were distributed through social media platforms, specifically WhatsApp and Instagram, which various stores or retailers own. The responses obtained served as primary data for subsequent processing in hypothesis testing and the evaluation of the structural model.

3. Results and discussion

3.1. SMEs profile

The description of SMEs included in the research can be seen in **Table 2** below.

Table 2. SMEs information.

Recent condition	Type of SMEs			
	Food (n = 60)	Fashion (n = 30)	Electronics (n = 30)	Hobbies/toys (n = 20)
Online				
2022	5%/8.3%	5%/16.7%	7%/23.3%	5%/25%
2021	9%/15%	10%/33.3%	8%/26.7%	8%/40%
>2 years	46%/76.7%	20%/66.7%	15%/50%	7%/35%
Location in Jakarta				
Central	8%/13.3%	7%/23.3%	6%/20%	3%/15%
North	7%/11.7%	8%/26.7%	9%/30%	5%/25%
South	13%/21.7%	10%/33.3%	2%/6.7%	2%/10%
East	18%/30%	3%/10%	5%/16.7%	2%/10%
West	14%/23.3%	2%/6.7%	8%/26.7%	8%/40%
Partner				
GoFood	48%/80%	-	-	-
GrabFood	10%/16.7%	-	-	-
Shopee food	2%/3.3%	-	-	-

Table 2. (Continued).

Recent condition	Type of SMEs			
	Food (n = 60)	Fashion (n = 30)	Electronics (n = 30)	Hobbies/toys (n = 20)
Tokopedia		9%/30%	19%/63.3%	16%/80%
Shopee		21%/70%	11%/36.7%	4%/20%
Working gadget				
Smartphone	58%/96.7%	26%/86.7%	24%/80%	18%/90%
Laptop	-	1%/3.3%	5%/16.7%	-
Tablet	2%/3.3%	3%/10%	1%/3.3%	2%/10%
Service hours				
<8 h	8%/13.3%	9%/30%	8%/26.7%	-
8–12 h	47%/78.3%	21%/70%	18%/60%	15%/75%
>12 h	5%/8.3%	-	4%/13.3%	5%/25%
Transaction value per month				
<500 USD	52%/86.7%	26%/86.7%	16%/53.3%	18%/90%
500–800 USD	6%/10%	3%/10%	9%/30%	2%/10%
>800 USD	2%/3.3%	1%/3.3%	5%/16.7%	-
Employees				
<5	51%/85%	29%/96.7	28%/93.3%	19%/95%
5–10	9%/15%	1%/3.3%	2%/6.7%	1%/5%
>10	-	-	-	-
Internet provider				
Telkomsel	37%/61.7%	18%/60%	15%/50%	14%/70%
Indosat	12%/20%	7%/23.3%	12%/40%	6%/30%
ByU	11%/18.3%	5%/16.7%	3%/10%	-
Delivery				
Anteraja	-	Yes	Yes	Yes
SiCepat	-	Yes	Yes	Yes
Gojek	-	Yes	Yes	Yes
JNE	-	Yes	Yes	Yes

Table 2 presents a thorough summary of significant findings. Regarding monthly transaction value, most SMEs achieved up to 500 USD, representing a significant accomplishment by the standards of small businesses in Indonesia. Regarding supporting equipment, smartphones evolved as the predominant choice for daily transactions, while laptops were relatively rare due to their impractical nature. Most SMEs had fewer than five employees, correlating with the on-the-ground reality that online retail stores typically do not require extensive staffing. This streamlined structure was reflected in the retail working hours, which generally fell within the 8 to 12-hour range. However, SMEs in the fashion industry were an exception, as none exceeded a 12-hour operational period.

3.2. Research model reliability

Following the assessment of the structural model advocated in this research, the results proved satisfactory, as shown in **Table 3**. The structural model was evaluated using Cronbach’s alpha scores > 0.6, composite reliability less than 0.6, and average variance extracted below 0.5 (Abu et al., 2023). Once all the criteria for evaluating the model’s feasibility were met, this model progressed to the stage of hypothesis investigation, aiming to determine the impact of exogenous latent variables on business sustainability (Rahlin and Gualin, 2023).

Table 3. Construct reliability and validity.

	Cronbach’s alpha	Composite reliability	Average variance extracted (AVE)
Adoption of new technology	0.906	0.924	0.602
Application of digital marketing	0.900	0.918	0.584
Digital literacy	0.912	0.929	0.623
Improved product quality	0.905	0.923	0.599
Location	0.911	0.927	0.614
Pricing strategy	0.895	0.916	0.579
Service quality	0.908	0.925	0.608
Sustainability	0.900	0.920	0.590

In addition, quality criteria measurements were performed using *R*-square and *f*-square scores. These tests aimed to assess the strength of exogenous variables in predicting sustainability success in SME businesses. The outcomes of these measurements are presented in **Tables 4** and **5** below.

Table 4. Quality criteria (*R*-square).

	<i>R</i> -square	<i>R</i> -square adjusted
Sustainability	0.638	0.619

Table 5. Quality criteria (*f*-square).

	<i>f</i> -square
Adoption of new technology	0.076
Application of digital marketing → sustainability	0.085
Digital literacy → sustainability	0.073
Improved product quality → sustainability	0.080
Location → sustainability	0.074
Pricing strategy → sustainability	0.086
Service quality → sustainability	0.081

Table 4 showed that the collective impact of all exogenous latent variables could predict the degree of business sustainability by 63.8%. Additionally, the analysis in **Table 5** showed that the pricing strategy of small businesses significantly contributed 0.086 or 8.6% to augment sustainability. Following closely, the application of digital marketing evolved as the second-highest contributor (0.085/8.5%) and proved to be a

significant strategy for enhancing business sustainability.

3.3. Findings from hypotheses investigation

All proposed hypotheses were thoroughly tested to address the earlier research questions. The comprehensive results of these tests are available in **Table 6** below.

Table 6. Hypotheses result.

Hypotheses	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (O/STDEV)	P values
Adoption of new technology → sustainability	0.186	0.187	0.067	2.763	0.006
Application of digital marketing → sustainability	0.184	0.186	0.052	3.563	0.000
Digital literacy → sustainability	0.196	0.191	0.060	3.269	0.001
Improved product quality → sustainability	0.189	0.190	0.055	3.425	0.001
Location → sustainability	0.187	0.187	0.055	3.413	0.001
Pricing strategy → sustainability	0.198	0.197	0.064	3.087	0.002
Service quality → sustainability	0.196	0.198	0.062	3.141	0.002

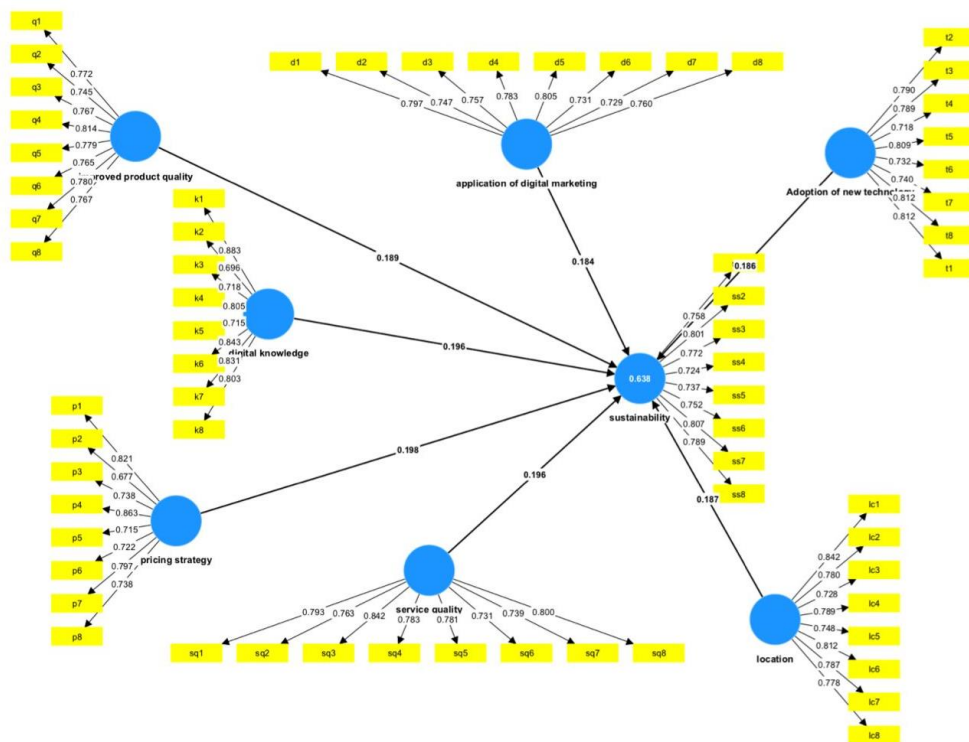


Figure 2. Path diagram.

Table 6 and **Figure 2** above showed that all hypotheses were significantly supported. The results signified that Adoption of New Technology has a *T*-statistic of 2.763 and a *P*-value of 0.006, application of digital marketing has a *T*-statistic of 3.563 and *P*-value of 0.000, digital knowledge has a *T*-statistic of 3.269 and *P*-value of 0.001, improved product quality with a *T*-statistics of 3.425 and *P*-value of 0.001, the location having a *T*-statistics of 3.413 and *P*-value of 0.001, pricing strategy with a *T*-statistics

of 3.087 and *P*-value of 0.002, as well as service quality having a *T*-statistics of 3.141 and *P*-value of 0.002 all had a significant impact on SME sustainability. Furthermore, applying digital marketing with a *T*-statistics of 3.563 contributed most to fostering SME sustainability.

4. Discussion

The hypothesis testing results effectively confirm a strong connection between business sustainability and the application of new technology, digital marketing, and digital literacy. Additionally, this research validates the influence of service quality, product pricing, location, and product quality on the success of online SMEs. The ability to generate a reasonably good income has been indicated by SME operators adopting online platforms and marketing products online. These findings correlate with the research conducted by Amoah et al. (2023) and Chuen and Topimin (2023), who also examined the performance of SMEs. SME owners possess significant online business knowledge, even when self-taught. This self-acquired knowledge instills confidence when selling products through apps such as GoFood or GrabFood. These entrepreneurs have also elevated the quality of the products, as evidenced by the positive comments and high ratings given by consumers. In the food sector, for instance, consumers consistently give 5-star ratings and commend the taste of the food and the speed of service. Higher prices are demanded by certain products in the hobby and toy sector on platforms such as Tokopedia, presenting a different scenario. However, consumers express satisfaction through high ratings and positive remarks on service and prices. The unique aspect of hobby and toy products, connected to rarity or limited-edition nature, justifies the higher prices. Many sellers in this sector focus on specialized markets with significant potential, such as limited-edition collectibles or rare vintage items.

Consumers in the children's toy market often prefer affordable options, even when there are indications of imitation in design and appearance compared to the original products. In the electronics sector, online product sales thrive and appeal to consumers. Various stores entice buyers with attractive discounts, and sellers of electronic products offer free delivery services within the same city. Consumers appreciate this free service, specifically for large, heavy items like washing machines, refrigerators, and televisions. Consequently, electronic products witness high transaction volumes, with several online stores selling dozens of units daily. Online purchases of electronic products bring significant conveniences for consumers compared to traditional manual transactions. A similarly positive trend characterizes online fashion product sales. Before TikTok was banned for sales, numerous live-selling events flourished on this platform, and a similar situation unfolded on Instagram and Tokopedia. Online fashion products command high value, with some celebrities actively participating in selling these items. Surveyed online stores include vendors selling Islamic clothing, high-end branded women's bags at premium prices, and shops specializing in pre-loved or second-hand products claimed to be high-quality and almost new. This phenomenon is widespread across various applications and enjoys significant favor from consumers.

5. Conclusion

A new model to enhance SMEs' business sustainability is optimizing new technologies and the internet in product promotion, marketing, and online transactions. Furthermore, strengthening SMEs' business sustainability is also supported by improving the quality of online services, pricing strategies, product quality, and proximity to consumers. The results of the structural model testing indicate that the strategy for implementing digital marketing in SME businesses has been shown to have a significant impact on business sustainability. The critical managerial implications to be undertaken by SME owners based on the research findings are continuously leveraging collaboration and partnerships with online platforms such as GoFood, Grab Food, Shopee, and Tokopedia in offering products to consumers. This collaboration has proven effective in increasing SMEs' revenue while enhancing sustainability. Although this research has successfully identified a new model for measuring the sustainability of SMEs, there are still limitations that need to be addressed. Firstly, this study has not analyzed the technological literacy aspect of business owners, and secondly, the research scale is still limited to the Jakarta city area. These limitations need to be followed up in further research to generate a more comprehensive model for SME business sustainability.

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