LEVERAGING EMERGING TECHNOLOGIES AND INNOVATIVE BUSINESS MODELS FOR SUSTAINABLE SME PERFORMANCE

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Abstract:

The COVID-19 pandemic accelerated the adoption of digital technologies, prompting small and medium-sized enterprises (SMEs) to re-evaluate their business models to ensure resilience and sustainable performance. This study investigates the impact of emerging technologies—such as cashless payment systems, business collaboration, social media marketing, and contactless delivery services—on business model innovation (BMI) and the sustainable performance of bakery SMEs in Malaysia. A quantitative approach was employed, collecting data from 35 SMEs through structured questionnaires and interviews with owners. The data were analyzed using SPSS (Version 26), with correlation, regression, and reliability tests conducted. The results revealed that adopting cashless payments and social media marketing significantly improved both business model innovation (BMI) and the sustainable performance of SMEs, while business collaboration and contactless delivery showed weaker and statistically non-significant effects. The model explained 19.6% of the variance in SME performance, emphasizing the importance of digital strategies but also suggesting that additional contextual factors may influence outcomes. These findings highlight the need for targeted policy support, training in digital capabilities, and tailored adoption strategies for SMEs. Theoretically, the study extends the Resource-Based View (RBV) by demonstrating how technology-enabled business model innovation contributes to firm sustainability. Practically, it provides actionable insights for SME owners, policymakers, and industry associations as they navigate the post-pandemic digital economy.

Keywords: Small and Medium Enterprises (SMEs), Business Model Innovation (BMI), sustainable performance, cashless payment systems, business collaboration, social media marketing, contactless delivery

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1. Introduction

The COVID-19 pandemic severely disrupted the global economy. It intensified an already slowing trade environment by causing declines in exports, imports, and overall market activity (Prasad, 2020). Small and Medium-sized Enterprises (SMEs) make up 90% of businesses and over 50% of employment worldwide (World Bank SME Finance, n.d.). These businesses have been among the most adversely affected due to limited financial resilience and limited operational flexibility. In Malaysia, SMEs contribute significantly to economic growth. They represent 38.9% of GDP, 17.9% of exports, and 48.4% of employment in 2019 (Uzir Mahidin, 2020). The pandemic triggered sharp revenue losses, labour shortages, and supply chain disruptions. In the early months of the crisis, 25% of Malaysian SMEs were at risk of closure (Lim, 2020). Movement restrictions hindered workforce availability (Ji & Liu, 2020). Capital flows were disrupted, and declining consumer demand further reduced revenues (Shafi *et al.*, 2020). Nearly half of SMEs reported cash reserves sufficient for only two months if lockdown conditions continued (Sin Chew Daily, 2021). Beyond these immediate challenges, COVID-19 accelerated existing trends in automation, digitalisation, and alternative work arrangements. These trends are reshaping market structures and consumer behaviour. In this evolving landscape, innovative business models have become essential for SME survival and sustainable performance. By leveraging emerging technologies such as artificial intelligence, cloud computing, and e-commerce platforms, SMEs can enhance operational efficiency. They can also diversify revenue streams and strengthen resilience in the post-pandemic economy.

1.2 Rationale for the Study

Small and medium-sized businesses (SMEs) play an important role in Malaysia's and Southeast Asia's economies. They create new employment, innovate new ideas, and support national output. But after COVID-19, SMEs are under more pressure to be sustainable while staying competitive in digital and global markets. Recent research shows that digital tools like artificial intelligence (AI), blockchain, cloud computing, big data, fintech, and Industry 4.0/5.0 can help SMEs be more sustainable by supporting new ideas, improving efficiency, and matching United Nations Sustainable Development Goals (SDGs) (Akanbi, 2024; Nair & Ng, 2025). Still, SMEs in Malaysia and the region face challenges in using digital tools for sustainability. They frequently face challenges such as limited financial resources, insufficient digital skills, a shortage of trained personnel, and weak policy support (Akanbi, 2024; Nair & Ng, 2025). Moreover, although numerous studies highlight the importance of technology, there is a lack of practical, real-world evidence on how SMEs can effectively integrate these technologies into their business strategies to improve outcomes (Rahman & Wong, 2024). The influence of skills like innovation, staff management, and green marketing on how digital tools support sustainability is also not well studied, especially for SMEs with fewer resources (Rahman & Wong, 2024; Silva & Tan, 2025). Without a better understanding of these areas, SMEs

could fall behind in becoming more sustainable and miss chances to compete in digital markets. Closing this gap is key to helping SMEs in Malaysia and Southeast Asia find practical ways to overcome obstacles, use digital tools, and achieve sustainable growth.

2. Literature Review

2.1 Sustainable SME's Performance

Recent studies conducted between 2020 and 2025 highlight the significant role sustainability plays in enhancing the performance of small and medium-sized enterprises (SMEs). Technology, like big data and the Internet of Things (IoT), helps SMEs save energy, cut waste, make better purchases, and connect with their communities. These lead to lower costs, a better reputation, and more market opportunities (ScholasticaHQ, 2023). Still, challenges such as limited resources and lack of expertise hold back many firms from using these methods. In Malaysia, research highlights that combining digital change with social responsibility makes SMEs stronger and more competitive. Building a green workplace culture and sharing clear information about environmental, social, and governance (ESG) actions are key for steady growth, especially after COVID-19 (UiTM, 2023). A thorough review finds that digital change, green actions, and smart ideas are the main factors that help sustainability. These steps make SMEs more flexible and efficient, but high costs and changes still make things hard (RSIS International, 2024). Comparing countries shows that SMEs use different sustainability methods, showing many paths to success (ScienceDirect, 2025). In general, new evidence supports that sustainability helps SMEs stay competitive, strong, and innovative over the long term.

2.2 Emerging Technologies and Business Model Innovation (BMI)

The business model (BM) concept remains broad, focusing fundamentally on value creation and capture (Perić *et al.*, 2017; Teece & Linden, 2017). For SMEs—especially in the post-COVID-19 era—Business Model Innovation (BMI) means integrating emerging technologies to bolster resilience and sustain competitive performance. Key innovation components include cashless payments, social media marketing, business collaboration, and contactless delivery services.

Recent empirical evidence from Malaysia demonstrates that technological readiness is a key driver of digital payment (cashless) adoption among SMEs, enhancing both efficiency and financial inclusion (Kanapathipillai *et al.*, 2024). A broader review of SME digital strategies shows that digital transformation technologies—such as e-commerce, IoT, and cloud computing—are now essential for survival and competitiveness in the post-pandemic landscape (Petropoulou *et al.*, 2024). Furthermore, innovation in social media and digital communication platforms has revolutionized SME customer engagement, enabling value-driven, loyalty-building interactions (Mohammad *et al.*, 2025). Concurrently, contactless delivery solutions have reshaped operational processes, supporting safe and efficient last-mile fulfillment in response to increased demand for minimal contact (Science Gate, 2025). From a static perspective, BMI success

can be assessed using metrics like profit and revenue growth (Haggège *et al.*, 2017). By contrast, a dynamic perspective highlights adaptability, technological integration, and long-term sustainability in evolving environments (Demil & Lecocq, 2010; Schaffer *et al.*, 2019). Collectively, these perspectives underscore the necessity for SMEs to leverage cashless systems, digital marketing, strategic collaborations, and contactless delivery as core components of BMI—ensuring sustained customer value and organizational resilience.

2.3 Literature Review and Hypotheses Development

The COVID-19 pandemic accelerated the adoption of emerging technologies and innovative business models (BMI), reshaping the survival and growth strategies of small and medium-sized enterprises (SMEs). In Malaysia, where SMEs account for more than 97% of business establishments, embracing new technologies and rethinking business models has been crucial to maintaining resilience and competitiveness. This section discusses four key factors—adoption of cashless payment systems, business collaboration, social media marketing, and contactless delivery services—and develops hypotheses on their influence on BMI and sustainable SME performance.

2.3.1 Adoption of Cashless Payment Systems

The integration of cashless payment systems such as Touch 'n Go eWallet, GrabPay, and Boost has significantly transformed SME operations in Malaysia. Data show that DuitNow QR transactions surged by 20% in 2023, reflecting growing merchant uptake (SME Transformation Hub, 2023). Research indicates that digital payments improve transaction efficiency, customer trust, and financial transparency, enabling SMEs to embed new value propositions into their business models (Kanapathipillai *et al.*, 2024). For example, Sarawakian food vendors reported improved sales by adopting QR-based payments during the pandemic, meeting customer demand for safer and faster transactions. By utilizing transaction data, SMEs can innovate further by creating loyalty programs and targeted marketing. This integration reflects a BMI mechanism, allowing SMEs to sustain competitiveness in an increasingly digital economy. Based on the elaborated findings as above, it is hypothesized that:

Hypothesis 1: Adoption of cashless payment systems positively influences innovative and sustainable SME performance.

2.3.2 Business Collaboration

Collaboration is another vital driver of BMI and SME sustainability. By forming partnerships with logistics providers, government initiatives, or industry peers, SMEs can access shared resources, expand markets, and strengthen innovation capacity. For instance, the Sarawak Digital Economy Strategy has encouraged SMEs to collaborate with technology firms to digitalize operations and tap into e-commerce platforms. Such collaborations enable firms to co-create products, develop sustainable supply chains, and

share knowledge to face market uncertainties (González-Benito *et al.*, 2024). By leveraging collaborative networks, SMEs redesign their business models to integrate collective resources and capabilities, ensuring adaptability and long-term performance. Hence, the next hypothesis we developed is:

Hypothesis 2: Business collaboration positively influences innovative and sustainable SME performance.

2.3.3 Social Media Marketing (SMM)

Social media has become a powerful tool for Malaysian SMEs to build customer relationships and increase market visibility. Platforms such as Facebook, TikTok, and Instagram provide cost-effective marketing solutions that support BMI through interactive and customer-driven engagement. A 2023 study found that many SMEs still underutilize social media, with only ~21% engaging in online marketing strategies (ResearchGate, 2023). During the pandemic, home-based bakeries and craft businesses in Sarawak used live selling to maintain sales and engage with customers directly. Empirical evidence shows that SMM enhances customer interaction, brand visibility, and overall SME performance (Saqib *et al.*, 2024). Moreover, SMM allows SMEs to showcase eco-friendly practices and CSR efforts, aligning profitability with sustainability goals. Thus, social media adoption is not merely a promotional strategy but an enabler of innovative and sustainable business models. With the substantial review, we formulate the third hypothesis as:

Hypothesis 3: Social media marketing positively influences innovative and sustainable SME performance.

2.3.4 Contactless Delivery Services

The pandemic also highlighted the importance of contactless delivery services in ensuring business continuity. Platforms like GrabFood, Foodpanda, and Lalamove became essential for SMEs to maintain customer reach while adhering to safety protocols. In Sarawak, small food and retail businesses rapidly adapted by partnering with these platforms to expand their customer base and ensure operational continuity. Research suggests that contactless delivery enhances resilience by reconfiguring value delivery channels, reducing operational risks, and improving consumer confidence (Winkenbach *et al.*, 2023). These services also align with sustainability objectives by enabling optimized logistics and reduced wastage. SMEs adopting contactless delivery are thus innovating their business models while ensuring sustainable growth in volatile markets. With all the reviews, the final hypothesis developed as:

Hypothesis 4: Contactless delivery services positively influence innovative and sustainable SME performance.

3. Material and Methods

3.1 Research Design

An analytical cross-sectional survey design was used in this study. Reasons being that the nature of this study seeks to gather data from a group of subjects at only one point in time (Schmidt & Brown, 2019). Moreover, the main purpose of the study is to measure the association between variables, i.e. Business Model Innovation on SME performance in the proposed conceptual model below:
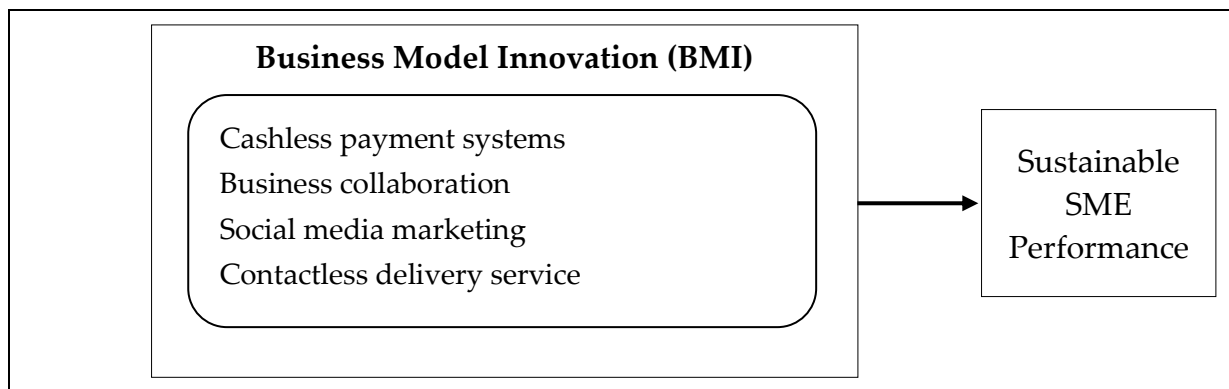

Figure 1: Proposed Business Model: An innovation in business
model reflects SME Performance during post-pandemic COVID-19

3.1 Population and Sample

The population of this study comprised small and medium-sized enterprises (SMEs) operating in the bakery sector. A total of 35 bakeries were identified and engaged as the focus of this research. Following the rule of thumb proposed by Roscoe (1975), the sample size was considered adequate for testing the conceptual model. Data collection was carried out using a combination of structured questionnaires and semi-structured interviews with bakery owners. This dual approach ensured the capture of both quantitative data for statistical analysis and qualitative insights into business practices, challenges, and innovative strategies. Questionnaires were distributed directly to the bakery owners and supplemented with in-person interviews to enhance response accuracy and richness of information. Given the relatively small and well-defined population, the study employed a census approach where all 35 bakeries were included as respondents. This comprehensive coverage minimized sampling error and enhanced the representativeness of the findings for the bakery industry context.

3.2 Measurement Instrument

This study employed a quantitative research approach, with data analysis assisted by SPSS version 26. A structured questionnaire and semi-structured interviews were developed to capture bakery owners' perceptions of various factors influencing Business Model Innovation (BMI) and Sustainable SME Performance. The independent variables were derived from prior literature and tailored to the bakery industry context, namely

cashless payment, business collaboration**,** social media marketing, and contactless delivery services. These variables were selected due to their relevance in shaping innovative practices and long-term performance sustainability among SMEs. A pilot test was conducted with a small number of bakery owners to confirm the clarity, reliability, and validity of the instrument. Feedback was incorporated to refine the items. The final questionnaire consisted of five sections: demographic information, cashless payment (4 items), business collaboration (4 items), social media marketing (5 items), and contactless delivery services (4 items), along with measures for sustainable SME performance (6 items). All items were measured using a five-point Likert scale ranging from 1 = Strongly Disagree to 5 = Strongly Agree, as this scale is widely accepted for capturing attitudinal responses and increasing response reliability (Babakus *et al.*, 2003). The reliability test demonstrated high internal consistency, confirming the suitability of the instrument for hypothesis testing and regression analysis (Fricker, 2006).

4. Results and Discussion

4.1 Reliability Analysis

Reliability analysis was carried out to assess the internal consistency of the constructs in this study. According to Hair *et al.* (1998) and more recent methodological guidelines (Hair *et al.*, 2019; Sekaran & Bougie, 2020), a Cronbach's alpha (α) value of 0.70 or above is considered acceptable for research purposes. As presented in Table 1, all constructs demonstrated satisfactory reliability. Specifically, business collaboration recorded α = 0.797, cashless payment systems α = 0.810, social media marketing α = 0.954, contactless delivery services α = 0.942, and sustainable SME performance α = 0.715. The overall Cronbach's alpha for the 23 items measured exceeded 0.80, indicating strong internal consistency across all variables. These results confirm that the responses to the measurement items were highly correlated and consistent, with each item effectively reflecting its intended construct. Constructs such as social media marketing and contactless delivery demonstrated excellent reliability, while the others showed good reliability. The closeness of alpha values to 1.0 further reinforces the reliability of the instrument. Thus, it can be concluded that the questionnaire is both robust and suitable for subsequent statistical analysis.

Table 1: Reliability statistics of the Business Model Innovation (BMI)

No	Variable	Cronbach's Alpha (α)	Items
1	Business collaboration	.797	4
2	Cashless payment system	.810	4
3	Social media marketing	.954	5
4	Contactless delivery service	.942	4
5	Sustainable SME performance	.715	6

Source: The Author

4.2 Frequency Analysis

Based on the demographic profile of respondents presented in Table 2, the study involved 35 participants, predominantly female (62.9%), while males accounted for 37.1%. The age distribution shows that most respondents were within the 18–29 (34.3%) and 40–49 (28.6%) age groups, with fewer participants above 50 years. In terms of ethnicity, the majority were Chinese (88.6%), followed by Malay (5.7%), Melanau (2.9%), and Iban (2.9%), reflecting the ethnic composition of bakery and homemade food operators in the study area. Regarding education level, almost half of the respondents (48.6%) attained SPM/STPM, while equal proportions held Diplomas (25.7%) and Degrees (25.7%). The findings also indicate diversity in business type, with 51.4% operating home-based enterprises and 48.6% running bakeries. In terms of business experience, 51.4% had been operating for 1–5 years, suggesting that a majority were relatively new entrepreneurs, whereas only 5.7% had operated for more than 20 years. Monthly revenues varied, with most earning below RM5,000 (45.7%), followed by RM5,000–10,000 (31.4%). Only a small proportion reported revenues exceeding RM15,000. These profiles provide valuable insights into the socio-demographic and business characteristics of the respondents, which may influence entrepreneurial development and financial performance.

Table 2: Summary of the respondent according to their profile

Category	Frequency	%	Category	Frequency	%
Gender			**Education level**		
Male	13	37.1	SPM/STPM	17	48.6
Female	22	62.9	Diploma	9	25.7
			Degree	9	25.7
Type					
Bakery Type	17	48.6	**Ethnicity**		
Homemade Type	18	51.4	Malay	2	5.7
			Iban	1	2.9
Age			Chinese	31	88.6
18 – 29 years	12	34.3	Melanau	1	2.9
30 – 39 years	8	22.9			
40 - 49 years	10	28.6	**Average revenues RM (monthly)**		
50 – 59 years	4	11.4	<5,000	16	45.7
60 years & above	1	2.9	5,000 – 10,000	11	31.4
			10,001 – 15,000	5	14.3
Years of operating			15,001 – 20,000	2	5.7
1-5	18	51.4	>20,000	1	2.9
6-10	7	20.0			
11-15	6	17.1			
16-20	2	5.7			
>20	2	5.7			

4.3 Pearson Correlation

Table 3 presents the correlations among key variables related to sustainable SME performance. The analysis reveals that social media marketing has the strongest positive correlation with performance (r = 0.485, p < 0.01), followed by cashless payment systems (r = 0.451, p < 0.01) and business collaboration (r = 0.352, p < 0.05). These findings suggest that digital marketing, modern payment methods, and strategic partnerships significantly contribute to SME success. In contrast, contactless delivery shows a weaker, non-significant relationship (r = 0.221), indicating limited direct impact on performance. The independent variables also show strong interrelations, particularly between cashless payment systems and social media marketing (r = 0.672), and between cashless payment and contactless delivery (r = 0.647), highlighting the complementary nature of digital tools in modern business operations. Overall, the results emphasize the importance of adopting integrated digital strategies to enhance the sustainability and performance of SMEs in today's competitive landscape.

Table 3: Pearson correlation analysis between variables studied

Variable	1	2	3	4	5
R					
1	1				
2	0.518**	1			
3	0.472**	0.672**	1		
4	0.394*	0.647**	0.428**	1	
5	0.352*	0.451**	0.485**	0.221	1

Note: 1 = Business collaboration, 2 = Cashless payment system, 3 = Social media marketing, 4 = Contactless delivery, 5 = Sustainable SME Performance

4.4 Multiple Regression Analysis

The regression analysis was conducted to examine the extent to which business collaboration, cashless payment systems, contactless delivery services, and social media marketing influence business model performance. As shown in Table 4, a multiple regression analysis was conducted to examine the effect of contactless delivery, business collaboration, cashless payment system, and social media marketing on SMEs' sustainable performance. The overall regression model was significant, $F(4, 115) = 9.84$, $p < .001$, with an R^2 of .255 and an Adjusted R^2 of .228, indicating that approximately 22.8% of the variance in SMEs' sustainable performance was explained by the predictors. Among the independent variables, the cashless payment system ($\beta = 0.290$, $t = 2.760$, $p = .007$) and social media marketing ($\beta = 0.345$, $t = 2.824$, $p = .005$) were found to be significant positive predictors of sustainable performance. In contrast, contactless delivery ($\beta = -0.094$, $t = -0.461$, $p = .648$) and business collaboration ($\beta = 0.168$, $t = 0.947$, $p = .351$) were not statistically significant. These results highlight that leveraging cashless payment systems and social media marketing strategies are critical drivers of SMEs' sustainable performance, while contactless delivery and business collaboration do not demonstrate significant influence in this model.

Table 4: Relative Contribution of Business Model Innovation (Business collaboration, Cashless payment system, Social media marketing, Contactless delivery) as independent variables and Sustainable SME Performance as dependent variable

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta (β)		
1	(Constant)	2.188	.421		5.199	.000
	Contactless delivery	-.056	.122	-.094	-.461	.648
	Business collaboration	.131	.138	.168	.947	.351
	Cashless payment system	.334	.121	.290	2.760	.007*
	Social media marketing	.288	.102	.345	2.824	.005*

*significant level is at .05 ($p < .05$).

Moreover, in Table 5, the model yielded an R value of 0.505, indicating a moderate positive relationship between the predictors and business model performance. The adjusted R^2 value of 0.255 suggests that approximately 22.8% of the variance in business model performance can be explained by the four independent variables. Although this percentage is modest, it highlights that other unobserved factors may play a more substantial role in influencing SME performance. This was supported based on the highest t-value and beta score as compared to other independent variables used in this study. Overall, the findings indicate that while the model explains only a modest proportion of variance in performance, social media marketing stands out as the most influential factor, followed by digital payment adoption and collaboration practices. These results emphasize the need for SMEs to integrate digital marketing strategies as a priority, while also recognizing that additional contextual and organizational variables should be explored in future research to improve the explanatory power of the model.

Table 5: Model Summary of the correlation between Business collaboration, Cashless payment system, Social media marketing, Contactless delivery (independent variables) and Sustainable SME Performance (dependent variable)

Model	R	R^2	Adjusted R^2	Std. Error of the Estimate
1	.505a	.255	.228	.6800

a. Predictors: (Constant), Business collaboration, Cashless payment system, Social media marketing, Contactless delivery
b. dependent variable: Sustainable SME Performance

4.5 Discussion and Implications

This study examined the impact of emerging technologies and innovative business model practices—namely cashless payment, business collaboration, social media marketing, and contactless delivery—on the sustainable performance of SMEs in Malaysia's bakery sector. Although the effects vary by variable, the results empirically demonstrate that digital adoption has a considerable impact on SME success. Social media marketing (β = 0.345, p = 0.005) and cashless payment systems (β = 0.290, p = 0.007) were found to be statistically significant predictors of sustainable SME performance by regression analysis. These results validate that combining digital marketing tactics with financial technology

improves long-term competitiveness and business model innovation (BMI), supporting H1 and H3, confirming that integrating financial technology and digital marketing strategies enhances both business model innovation (BMI) and long-term competitiveness. According to current research, adopting fintech and mobile payments not only lowers transaction costs but also boosts financial inclusion and consumer trust, which strengthens SME resilience (Hossain & Rahman, 2023; Springer Open, 2025). Similar to this, social media marketing makes it easier to engage customers, promote brands, and reach a larger audience. This is particularly important in the post-pandemic era, when digital platforms took over as the main sales channels (Derus & Wan Abu Bakar, 2024; Amin *et al.*, 2025). However, H2 and H4 were rejected because business collaboration ($\beta = 0.168$, $p = 0.351$) and contactless delivery services ($\beta = -0.094$, $p = 0.648$) did not substantially predict SME sustainable performance. Although cooperation is commonly recognized as a means of sharing resources and fostering creativity (Nguyen & Simkin, 2024), its lack of relevance in this case can be due to the small bakeries' limited ability to develop formal, short-term agreements.

The minimal impact of contactless delivery during the pandemic may also suggest that bakery SMEs rely more on in-store sales or localized distribution, which lowers the technology's perceived value in comparison to larger retail sectors (Chong *et al.*, 2023). While digital adoption makes a significant contribution, other factors like managerial skills, financial literacy, and regulatory frameworks also play important roles, according to the model, which explained 22.8% of the variance in SME performance (Nair & Ng, 2025; Silva & Tan, 2025). This emphasizes how crucial complementary institutional and organizational support is to optimizing the advantages of technology adoption. Beyond quantifiable results, the study's ultimate goal was to identify challenges SMEs encounter while implementing digital technology. These include inadequate financial resources, a lack of digital skills, and inadequacies in government support systems, all of which are in line with earlier research (Rahman & Wong, 2024). These obstacles prevent SMEs from integrating digital tools completely into their business plans, highlighting the necessity of infrastructure expansion, targeted training, and subsidies to close adoption gaps.

4.5.1 Implications

This study offers both theoretical and practical implications. Theoretically, the findings extend the discourse on Resource-Based View (RBV) and Business Model Innovation (BMI). They show how digital resources, such as cashless payment systems and social media marketing, enhance SMEs' capacity to innovate and achieve sustainable performance. The study also demonstrates that not all emerging technologies contribute equally. This reinforces the idea that sectoral and contextual factors shape the value of technological adoption. Practically, the results highlight the pressing need for SMEs, especially in traditional sectors such as bakeries, to prioritize digital integration. Cashless payment systems reduce operational inefficiencies. They also expand customer convenience. Social media marketing strengthens customer engagement and brand positioning. Policymakers should note that while collaboration and contactless delivery

services may be less impactful in the bakery sector, they could hold potential in other industries. Thus, interventions should be tailored rather than one-size-fits-all. Overall, the study underscores that digital transformation, when aligned with business models, is central to SME resilience in the post-pandemic economy.

5. Recommendations

The first recommendation is directed at SME owners and managers: investments should focus on strengthening digital marketing strategies and adopting cashless payment solutions as core operational practices. These steps will boost customer reach, improve transaction security, and create operational efficiencies. Additionally, training programs should be provided to enhance digital skills, ensuring SMEs can fully leverage these technologies and remain competitive. For policymakers, the key recommendations are to implement support mechanisms such as subsidies for digital adoption, tax incentives for SMEs investing in technology, and expanding ICT infrastructure in semi-urban and rural areas. Industry associations, meanwhile, should foster structured collaboration platforms to ensure SMEs can pool resources and share digital expertise. Regarding the banking and Fintech sector, the emphasis should be on providing affordable, user-friendly, and secure cashless payment solutions to further ease adoption barriers. Finally, logistics providers should explore scalable, cost-effective delivery models tailored to SMEs to enhance the relevance of contactless delivery.

5.1 Future Research Direction

Although this study provides valuable insights, several limitations create opportunities for future research. First, the modest R^2 value suggests other factors—such as financial literacy, organizational culture, and government policy—may better explain SME performance. Future studies should integrate these dimensions into expanded models. Second, this research focused solely on bakery SMEs in Malaysia, which may limit generalizability. Comparative studies across sectors (e.g., retail, manufacturing, services) and countries could uncover sector-specific digital adoption patterns. Finally, longitudinal research designs are needed to track the long-term impacts of emerging technologies on SME sustainability, as cross-sectional data may not fully capture evolving business model innovations in the digital economy.

6. Conclusion

This study shows that for Malaysian bakeries, using cashless payments and social media marketing are the most important ways new technologies can help small businesses change and do better. These tools improve how businesses work and help them reach more customers, proving they are key in today's digital world after the pandemic. Other valuable strategies include adopting online ordering systems, leveraging customer data analytics to personalize services, implementing loyalty apps, and exploring e-commerce

partnerships. Additionally, investing in staff digital skills and using automated inventory management can streamline operations and boost efficiency. On the other hand, working with other businesses and using contactless delivery were less important in this sector, possibly because of specific challenges or limits. The results matter for both theory and practice. In theory, they support the Resource-Based View (RBV) by showing that small businesses using digital tools become more competitive and long-lasting. In practice, they suggest that policymakers and industry groups should focus on digital training and offer money to help small businesses use new technology. In summary, while new technologies are not a complete solution, using cashless payments and social media marketing can help small businesses become more creative, strong, and successful in the changing world after the pandemic.

Conflict of Interest Statement

The author can assure, confidently express that no conflicts of interest are possibly linked with this research, and there has been no significant financial aid received for this study, authorship and publication that could have influenced the study's outcome. The author affirms that this research is original and has not been published in the past or elsewhere.

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