European Journal of Social Sciences Studies
ISSN: 2501-8590
ISSN-L: 2501-8590
Available on-line at: www.oapub.org/soc

DOI: 10.46827/ejsss.v10i3.1784 Volume 10 | Issue 3 | 2024

NAVIGATING THE DIGITAL PAYMENT LANDSCAPE IN MALAYSIAN SMES: POST-COVID-19 CHALLENGES AND KEY DRIVERS OF ADOPTION

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Abstract:
This study aims to examine the relationships between perceived consumer purchase behaviour, technological readiness, and merchant and government support in driving the adoption of digital payments by Malaysian small and medium enterprises (SMEs) after the COVID-19 pandemic. The objectives are to provide data-driven insights into the factors enabling the transition to cashless transactions and Fintech solutions. The study surveyed 211 SME owners/managers in the Klang Valley, Malaysia, via questionnaires. The target population consisted of SMEs operating in sectors like food and beverage, retail, professional services, and manufacturing within the Klang Valley. The findings revealed that perceived technological readiness had a statistically significant positive relationship with digital payment adoption among the SMEs surveyed. However, perceived consumer purchase behaviour and merchant/government support did not show significant relationships with adoption. The implications suggest that enhancing SMEs' technological capabilities through infrastructure upgrades, employee training, and system compatibility is crucial for driving cashless adoption. Financial institutions can leverage these insights to design user-friendly digital payment solutions tailored to SME needs. SME owners can benefit by understanding areas requiring improvement in technological readiness for successful digital payment integration. Policymakers gain valuable information to create enabling environments through regulations, awareness campaigns, and support mechanisms. Ultimately, increased digital payment adoption by

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SMEs can enhance consumer convenience, financial inclusion, operational efficiency, and economic resilience. The study highlights collaborative efforts among stakeholders as vital for fostering a conducive ecosystem for SMEs' digital transformation.

Keywords: digital payment, consumer purchase behaviour, technological readiness, merchants, government, small and medium enterprises

1. Introduction

SMEs' adoption of the e-payment system in Malaysia has increased, but it is still lower than that of large firms (Chong & Chan, 2018). Digital payment includes ATM, e-money, internet banking, credit card, debit, mobile payments, and mobile banking (Kanapathipillai *et al.*, 2023; Teoh *et al.*, 2013). By comparing before and during COVID-19 lockdowns, (Ahmad *et al.*, 2021) found the increasing use of Internet banking, mobile banking, debit card and e-wallet, and cash payment reduction in Malaysia. The research had limited descriptive analysis and suggested further research about what factor motivates digital payment adoption in crises. Moreover (Kanapathipillai *et al.*, 2023; Chong & Chan, 2018) reported that digital payment adoption is influenced by perceived usefulness, ease of use, and credibility. However, during COVID-19 in Malaysia and Indonesia, (Aji *et al.*, 2020) found that perceived ease of use showed an insignificant effect on adopting e-payment. Escobar-Rodríguez & Carvajal-Trujillo (2018) found that modelled perceived enjoyment significantly affected using the low-cost carrier website. Using qualitative research, (Mansour, 2021) reported the wide use of the e-payment system initiated during the pandemic in Malaysia. Additionally, (Bank Negara Malaysia, 2021) found that SMEs' capacity for offering e-payment needs improvement and that COVID-19 accelerated e-payment use. Barriers are poor digital infrastructure, lack of skills, and risks such as cybersecurity for financial information, which deter consumers from adopting digital payments. Moreover, (Alam *et al.*, 2021) said e-wallets face limitations such as no ideal infrastructure, complexity, security, privacy, and regulation, limiting the adoption of digital payments. Likewise, there was an increase in smartphone and internet use indicators, which show readiness for e-payment in Malaysia. SMEs contributed 59.3% to GDP in 2021, according to the (Department of Statistics Malaysia, 2022); hence, targeted adoption is needed. Chen *et al.* (2021) recommended government support through policies, incentives, and education to improve SMEs' digital payment adoption levels. Overcoming the abovementioned constraints will help SMEs adopt digital payment more and realize potential growth.

1.1. Research Problem Statements

The adoption of digital payment systems by Small and Medium Enterprises (SMEs) is influenced by several dynamic factors, including consumer purchase behaviour, technological readiness, and perceived support from merchants and the government. Consumer behaviour significantly impacts SMEs' purchasing decisions as they evaluate

their target customers' preferences and inclination towards digital transactions (Kanapathipillai *et al.*, 2023; Prasad *et al.*, 2019; Ovodenko *et al.*, 2020). However, most studies rely on SME owner perceptions rather than direct consumer behaviour analysis, revealing a gap in quantitative data supporting the impact of consumer demographics on digital payment preferences and corresponding SME offerings (Kanapathipillai *et al.*, 2023; Smith, 2021). Conflicting findings further complicate the understanding of this relationship, with some research indicating significant barriers, such as high implementation costs and technological complexity, that may deter SMEs from adopting digital payments despite consumer demand (Chen and Lin, 2019; Wang and Li, 2020).

Likewise, SMEs′ digital payment adoption decisions depend on their technological readiness (Musa & Njeru, 2023; Carvajal-Álvarez & Valencia-Pérez, 2019). Nonetheless, discrepancies have arisen regarding the perceived technological readiness and actual adoption of interoperable exchange services (Adams, 2019), which warrants longitudinal studies that follow changes in perceptions about readiness over time alongside behaviours around adopting these services. Exploring cultural factors and the different societal views on technology readiness can provide important insights to a deeper understanding of differences between intention to adopt and actual adoption (Nasir *et al.*, 2022).

The perceived support from merchants or government, which covers factors such as the security of personal information, social media engagement, and regulating frameworks, has been identified to be one of the critical determinants influencing intention towards using digital payment systems (Rath & Kumar, 2021; Dwivedi *et al.* 2021; Li & Li, 2021). There is very little information on how these firms are facing barriers in digital payment and whether the measures being initiated by the government or merchant support were actually meeting the SMEs' requirements or not (Kumar *et al.*, 2018; Hanaysha, 2017). Moreover, inconsistent findings indicate that more studies are required to understand how consumer-centric privacy measures and social media engagement can help enhance trust development, leading to digital payment adoption among SMEs (Jain *et al.*, 2021; Belfrage *et al.*, 2022).

As a result, even as the significance of digital payment acceptance for SME growth and competitiveness is evident in academic literature. very little research has yet been conducted to explain the use of digital payments by small and medium-sized enterprises, whilst more current previous investigations have shown gaps or offer contradictory results on this topic, hence warranting further investigation. This study seeks to address these gaps by investigating the direct effects of consumer purchase intention and demographic factors on SMEs' digital payment adoption, examining whether perceived technological readiness influences actual usage over time in terms of cultural differences and evaluating efforts that have been made towards assisting small traders with respect to promoting further uptake of electronic payments among them within a Malaysian context.

Thus, this research seeks to narrow the gaps in the literature and provide a comprehensive understanding of the factors influencing digital payment adoption by

SMEs, thereby informing strategies to enhance the adoption process and address existing barriers.

1.2. Research Questions

RQ1: Is there a significant relationship between perceived consumer purchase behaviour and digital payment adoption?
RQ2: Is there a significant relationship between perceived technological readiness and digital payment adoption?
RQ3: Is there a significant relationship between perceived support from merchants or the government and digital payment adoption?

1.3. Research Objectives

RO1: To examine if there is a significant relationship between perceived consumer purchase behaviour and digital payment adoption.
RO2: To scrutinise if there is a significant relationship between perceived technological readiness and digital payment adoption.
RO3: To study if there is a significant relationship between perceived support from merchants or the government and digital payments adoption.

2. Literature Review and Hypothesis Development

The following sections will discuss the underpinning theory, literature, and hypotheses proposed to explain the consumer's purchase behaviour, technology readiness perceived by consumers, and the degree to which consumers find the role of merchants or the government helpful for small businesses in Klang Valley, Malaysia to start adopting digital payment post COVID-19.

2.1 Underpinning Theory: Theory of Technology Organization Environment (TOE)

The Technology Organization Environment (TOE) framework is a highly relevant theoretical lens for studying digital payment adoption by SMEs in Malaysia post-COVID. It offers a comprehensive approach by encompassing three critical contexts: technological, organizational, and environmental factors, which influence adoption decisions (Tornatzky & Fleischer, 1990). The TOE framework's adaptability is evidenced by its successful application in various contexts, such as digital payment adoption among Indian retailers (Wang *et al.*, 2021) and Indonesian SMEs (Susanto *et al.*, 2022). Specifically tailored to SMEs, it recognizes the importance of organizational characteristics, including size, management framework, and resource availability, which are crucial for resource-constrained SMEs (Al Fahim *et al.*, 2022). The framework also incorporates external environmental factors, such as regulatory influences and industry dynamics, providing insights into the broader ecosystem shaping digital payment adoption (Eldalabeeh *et al.*, 2021). Additionally, it integrates human factors, such as skills and prior experience with technology, highlighting the role of individual perceptions in adoption decisions

(Kanapathipillai *et al.*, 2023). Its relevance during disruptions, demonstrated by its application during the COVID-19 pandemic (Susanto *et al.*, 2022), underscores its utility in understanding recovery and resilience strategies post-crisis. Therefore, the TOE framework's comprehensive nature, adaptability, consideration of external influences, and integration of human factors make it the most suitable theoretical framework for investigating digital payment adoption among SMEs in Malaysia post-COVID.

2.2 Digital Payment Adoption by SMEs

The adoption of digital payments by Small and Medium Enterprises (SMEs) is influenced by various dynamic factors. Consumer behaviour significantly impacts SMEs' purchasing decisions as they evaluate their target customers' preferences and inclination towards digital transactions (Prasad *et al.*, 2019). The growing trend of digital transactions among consumers motivates SMEs to adopt digital payment solutions (Ovodenko *et al.*, 2020). Understanding consumer purchase behavior is crucial for SMEs to tailor their digital payment strategies, fostering rapid revenue growth (Kanapathipillai *et al.*, 2023). Technology readiness also plays a pivotal role, indicating SMEs' ability to adopt technology and enhance their competitiveness (Musa & Njeru, 2023; Carvajal-Álvarez & Valencia-Pérez, 2019). SMEs perceive themselves as technologically ready and are more likely to integrate digital payment methods seamlessly (Rachmawati *et al.*, 2020; Hongwei & Hui, 2021). The intention to use digital payment systems is further influenced by perceived support from merchants and the government. Merchant support emphasizes the importance of security and confidentiality of personal information (Rath & Kumar, 2021), while social media engagement enhances consumer trust (Dwivedi *et al.*, 2021). Government support through regulatory frameworks and public awareness initiatives, such as compliance with the Personal Data Protection Act 2010 (PDPA) in Malaysia, reinforces consumer trust (Li & Li, 2019). In conclusion, digital payment adoption by SMEs is shaped by consumer behavior, technology readiness, and perceived support from merchants and the government, highlighting the need for comprehensive strategies to facilitate this adoption.

2.3 The Relationship Between Perceived Consumer Purchase Behaviour and Digital Payment Adoption

Consumer purchase behaviour is influenced by factors like lifestyle and social class (Prasad *et al.*, 2019). SMEs' perceived consumer purchase behaviour involves subjective assessments of how target customers make buying decisions, including shopping preferences and payment habits (Prasad *et al.*, 2019). This perception shapes SMEs' digital payment adoption decisions – if more consumers appear to favour digital payments, SMEs are incentivized to offer such options, aligning with preferences (Ovodenko *et al.*, 2020).

However, research on the factors influencing SME digital payment adoption is limited. While (Kanapathipillai *et al.*, 2023) found that aligning with consumer preferences can increase SME revenues, their study relied on SME owner perceptions

rather than analysing consumer behaviour directly. Furthermore, though (Ovodenko *et al.*, 2020) proposed that digital technologies shape consumer behaviour, leading to SME adoption, quantitative support for this digital transformation theory still needs to be established, presenting a gap.

Additionally, demographics like technological literacy likely impact consumer behaviour (Kanapathipillai *et al.*, 2023; Prasad *et al.*, 2019), which, in turn, affects SME digital payment offerings. However, few studies have segmented consumer groups by characteristics to reveal differential adoption drivers. Research by (Smith, 2021) suggests that younger, more educated consumers in emerging markets rapidly embrace digital payments, but his ethnographic study included limited participant data. More work is required to connect demographic factors to payment preferences and corresponding SME offerings.

Consumer behaviour plays a pivotal role in shaping the adoption of digital payment methods among SMEs. Studies by (Ramli *et al.*, 2024) emphasize the influence of consumer preferences and shopping habits on SMEs' decisions to offer digital payment options. (Ramli *et al.*, 2024) found that SMEs that aligned their payment offerings with consumer preferences experienced higher customer satisfaction and increased sales. Similarly, research by (Omrani *et al.*, 2024; Kanapathipillai *et al.*, 2023) suggests that consumer demand for convenience and security in payment methods motivates SMEs to adopt digital payment solutions.

However, conflicting findings arise from studies such as that of (Chen & Lin, 2019), who argue that while consumer preferences are necessary, SMEs face significant barriers, such as high implementation costs and technological complexity, which may hinder the adoption of digital payment systems regardless of consumer demand. Furthermore, research by (Wang & Li, 2020) highlights the role of trust and familiarity with traditional payment methods, indicating that SMEs may be reluctant to fully transition to digital payments due to concerns about security and reliability.

Therefore, while aligning digital payment adoption with perceived consumer behaviour appears strategically advisable for SMEs, research limitations persist. These centre on subjective SME assessments rather than direct consumer analysis, plus a lack of data substantiating demographic differences. Addressing these gaps will strengthen the evidence linking consumer preferences to appropriate SME adoption decisions and technology offerings.

H1: There is a significant relationship between perceived consumer purchase behaviour and digital payment adoption.

2.4 The Relationship Between Perceived Technology Readiness and Digital Payment Adoption

Technology readiness refers to SMEs' perceived preparedness to adopt technology advancements (Musa & Njeru, 2023). This subjective view accounts for factors like digital infrastructure and workforce adaptability (Carvajal-Álvarez & Valencia-Pérez, 2019).

SMEs seeing themselves as technologically ready tend to readily adopt digital payments (Hongwei & Hui, 2021).

However, (Adams, 2019) found no association between perceived readiness and actual adoption rates. His study of Indian SMEs showed disconnects between owners, stating that they are highly open to digital tools and that minimal implementation is occurring. This contradicts expected links between readiness perceptions and adoption behaviours, presenting a research gap. Longitudinal studies tracking changes in both readiness views and payment tools over time could reveal if adoption eventually follows initial receptiveness.

Additionally, while some scholars propose technology readiness models for smoothing adoption processes (Hongwei & Hui, 2021), quantitative evidence on model effectiveness is lacking. Moreover, (Balakrishnan, 2023; Najib & Fahma, 2020; Sani *et al.*, 2021; Giampietri & Trestini, 2020; Wiese & Humbani, 2019; Sinha *et al.*, 2019) mention that the intention to adopt technology is positively influenced by the customers' readiness to use the technology.

Factors shaping readiness perceptions remain underexplored. Culture likely influences perceptions, as Malaysian SME owners view technology through a different lens than their Western counterparts (Nasir *et al.*, 2022). Investigating how societal and organizational culture mediates readiness could explain contradictory adoption willingness versus behaviour.

Perceived technology readiness significantly influences SMEs' decisions regarding the adoption of digital payment methods. Research by Baran (2020) highlights the importance of SMEs' subjective perceptions of technological preparedness in shaping their adoption behaviours. Kanapathipillai *et al.* (2023) suggest that SMEs that perceive themselves as technologically ready are more inclined to adopt digital payment solutions, leveraging their perceived readiness to embrace technological advancements. Similarly, (Carvajal-Álvarez & Valencia-Pérez, 2019) emphasize the role of factors such as digital infrastructure and workforce adaptability in SMEs' technology readiness. They found that SMEs with robust digital infrastructure and adaptable workforces are more likely to perceive themselves as ready for technological advancements, including digital payment adoption.

However, conflicting findings emerge from studies such as that of (Adams, 2019), who found no significant association between perceived technology readiness and actual adoption rates among Indian SMEs. Adams' research revealed a discrepancy between SME owners' stated openness to digital tools and their actual implementation, suggesting a gap between readiness perceptions and adoption behaviours. Additionally, (Rachmawati *et al.*, 2020) propose e-readiness models to facilitate smoother technology adoption processes but, the lack of field testing leaves the practical impacts of these models unknown. Moreover, (Nasir *et al.*, 2022) suggest that cultural factors may mediate readiness perceptions, as Malaysian SME owners may view technology differently from their Western counterparts. Investigating the influence of societal and organizational culture on readiness perceptions could shed light on the contradictory relationship

between willingness to adopt and actual adoption behaviours. According to (Wijayanto, 2024), financial literacy and the variables of the Technology Acceptance Model significantly affect the interest in using digital payment, which is again evidence of the claim that readiness is insignificant for the adoption of digital payment system. Finally, (Riswandi & Permadi, 2022) argue that the perception of ease of use and usefulness of e-commerce technology and MSME owners' mindset should be considered in order to understand the adoption of digital payments.

Thus, contradictions between perceived readiness and actual adoption underscore research gaps. Scholars should utilise longitudinal and field-based studies to unravel complex links among readiness, cultural factors, and digital payment implementation over time. This can refine understanding while exposing practical model limitations.

H2: There is a significant relationship between perceived technological readiness and adoption of digital payments.

2.5 The Relationship Between Perceived Support and Digital Payment Adoption

Perceived support from both merchants and the government is a varied determinant influencing the intention to use digital payment systems, particularly in the post-COVID era. The depth of this influence is highlighted by various dimensions within the realms of merchant and government support:

2.5.1 Merchant Support

Consumers, according to (Rath & Kumar, 2021), highly value merchants who prioritize the security and confidentiality of personal information in digital transactions. The effectiveness of a merchant's control in safeguarding sensitive data not only builds trust but also fosters customer loyalty (Naved *et al.*, 2022). In the context of e-commerce and digital payments, consumers actively seek a sense of security and value propositions from merchants to ensure their sensitive information is handled with utmost care (Jain *et al.*, 2021).

According to (Jain *et al.*, 2021), consumers actively seek merchants that implement consumer-centric privacy measures in digital transactions. This includes transparent data handling practices, clear privacy policies, and mechanisms for consumers to control and monitor the usage of their personal information. Merchants adopting such measures are likely to gain a competitive edge by fostering a more profound sense of trust and confidence among consumers.

Dwivedi *et al.* (2021) highlight the role of social media in shaping consumer perceptions of merchant trustworthiness. Merchants actively engaged on social media platforms, utilizing them for customer interactions, and showcasing transparent business practices tend to garner higher levels of trust. This dimension emphasizes the evolving landscape where merchants' digital presence plays a pivotal role in influencing consumer trust and, consequently, the intention to use digital payment systems.

Additionally, studies by (Belfrage *et al.*, 2022) emphasize that when consumers perceive control over personal information, they are more likely to exhibit brand loyalty. The perceived sense of control becomes a crucial factor influencing consumer trust, satisfaction, and repeated engagement with merchants in digital transactions.

Consumers highly value merchants who prioritize the security and confidentiality of personal information in digital transactions (Rath & Kumar, 2021). Studies by (Naved *et al.*, 2022; Jain *et al.*, 2021) emphasize that transparent data handling practices and consumer-centric privacy measures implemented by merchants contribute to building trust and confidence among consumers. Additionally, (Dwivedi *et al.*, 2021) highlight the role of social media in shaping consumer perceptions of merchant trustworthiness, indicating the importance of merchants' digital presence in influencing consumer trust and intention to use digital payment systems. Moreover, (Belfrage *et al.*, 2022) suggest that consumer perceptions of control over personal information positively influence brand loyalty, further highlighting the significance of merchants' privacy measures.

However, (Raut *et al.*, 2021) highlight a knowledge gap regarding the barriers faced by SMEs in digital payments, suggesting a need for more research in this area. This gap indicates a lack of comprehensive understanding of the challenges and support needed for SMEs to adopt digital payment systems effectively. Moreover, (Mishra, 2024) found that the lack of awareness and knowledge of QR code payments by consumers and merchants was a significant inhibitor of digital payment adoption. Additionally, a study used a merchant survey of small Indian merchants in Jaipur. The research also considered the other motivations that prevent merchants from adopting digital transactions by incorporating demand-side factors and taxes in a merchant survey (Allen *et al.*, 2022).

2.5.2 Government Support

Government regulations and initiatives play a pivotal role in shaping consumer perceptions regarding data privacy and trust (Rath & Kumar, 2021). Compliance with such regulations not only ensures the protection of individual personal data in commercial transactions but also signifies a commitment to privacy, bolstering consumer confidence.

The implementation of regulations like the Personal Data Protection Act 2010 (PDPA) in Malaysia underscores the importance of safeguarding sensitive information. Organizations that align with and adhere to these regulations convey a sense of privacy and security to consumers, reinforcing trust in digital payment systems.

However, Kumar *et al.* (2018) suggest a research gap in understanding the effectiveness of government initiatives, particularly in the context of SMEs in Malaysia. Despite efforts such as merchant training and government subsidies aimed at boosting digital payment adoption among SMEs, there remains a lack of research focusing on SMEs' perspectives on these initiatives.

A study by (Li & Li, 2019) emphasizes the significance of cross-border regulatory alignment in shaping consumers' trust in digital transactions. When governments collaborate on regulatory frameworks, ensuring consistency and alignment across

borders, consumers perceive a higher level of security. This harmonization of regulations contributes to a more robust global digital payment ecosystem, instilling confidence among consumers to engage in cross-border digital transactions.

Government support extends beyond regulations and encompasses public awareness programs. Hanaysha (2017) discusses the impact of government-led awareness initiatives on consumer trust. Governments that actively educate the public about digital payment security measures and promote awareness campaigns contribute to building a more informed and confident consumer base. These initiatives play a vital role in shaping perceptions of government support and commitment to a secure digital payment environment.

Moreover, government initiatives and policies, as highlighted by (Hanaysha, 2017), can significantly shape the dynamics of customer-business relationships. For example, the PDPA in Malaysia, introduced on November 15, 2013, explicitly emphasizes the protection of personal data in commercial transactions, contributing to consumers' trust in digital payment systems.

According to (Kumar *et al.*, 2018), merchant training paired with government subsidies for SMEs on digital payment adoption has been conducted with the understanding that it could boost the adoption rate of digital payments by SMEs in India. However, there is still a research gap in the Malaysian context, and most of the studies were carried out on end users at the consumer level instead of SMEs from the business owner's point of view.

Thus, these additional insights highlight the variation within the dimensions of merchant and government support. Consumer-centric privacy measures and social media influence for merchants, as well as cross-border regulatory alignment and public awareness programs for governments, further contribute to the understanding of the various nature of perceived support in driving digital payment adoption.

H3: There is a significant relationship between perceived support from merchants or the Government and digital payments adoption.

Figure 1, The conceptual framework leverages the Technology-Organization-Environment theory by Tornatzky *et al.* (1990) to model how SMEs' perceived technological readiness, consumer digital payment trends, and external support systems enable the adoption of digital payments post-COVID-19. The variables can be measured quantitatively through a survey instrument and statistically analysed to test the hypotheses. A deductive approach is taken by starting with existing theories around technology acceptance and innovation diffusion to derive hypotheses about factors influencing SMEs' digital payment adoption.

2.6 Proposed Conceptual Framework

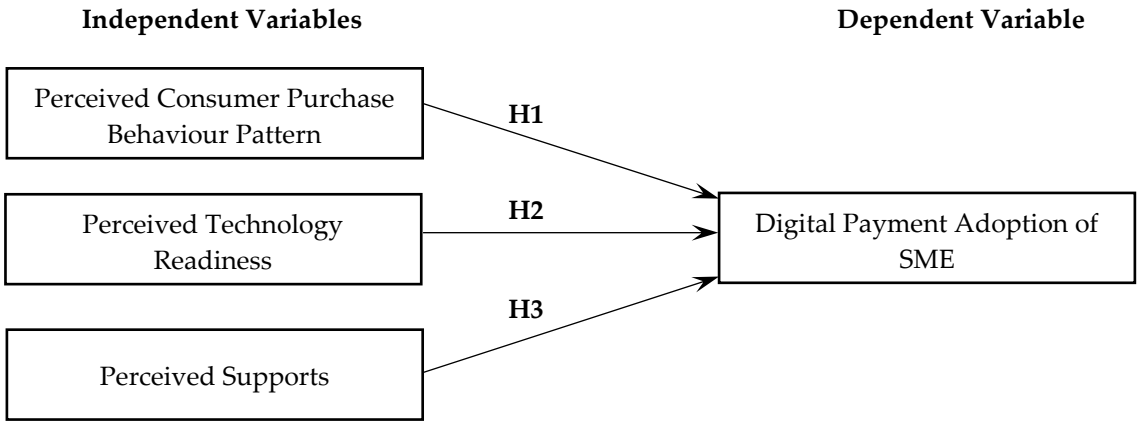


Figure 1: Proposed Conceptual Framework

3. Methodology

The research methodology of this study is oriented to exploring the barriers to digital payment adoption among SMEs in Malaysia post-COVID-19. Overall, the methodology of this study is deductive because it validates the pre-existing theories and approaches derived from prior research. Moreover, the quantitative research methods will be utilized to collect and analyse the relevant data, as they provide better objectivity and rigor for addressing the research questions.

3.1 Population, Sampling and Measurements

This study is about SME owners in Klang Valley, Malaysia, and the entire population consists of roughly 383,000 SMEs. While it is one-third of the country's SMEs, the chosen population corresponds to the research objectives since the goal is to identify the specific problems and perspectives of Klang Valley's SMEs. The sampling technique used is purposive sampling, considered to be a nonprobability method, where researchers choose to involve participants depending on their characteristics in this study, it secures that SMEs will represent the population influenced by the digital payment adoption barriers. This method aligns with the goals of the study, assuring that the selected participants have characteristics relevant to the study and exercise a targeted sampling. Data is collected through a Google Doc survey, in which 384 SMEs fill out the survey. The use of the online survey platform is efficient in collecting data and increase the diversity of the participants. The survey instrument is of the Likert Scale type since it is required to collect the respondents' opinions in this paper, thus ensuring a structured assessment of the respondent's attitudes toward the adoption. In this case, the scale allows the participants to share their opinions in more than two options where they can express their agreement or disagreement with the statements, helping the researchers understand the issues in detail. It is important that the study will enrol participants via

the existing portfolio of Maybank's SME and that the final sample is accurate and suitable for the study to ensure the correct results.

3.2 Reliability Test

Table 3.1 Reliability Test shows Cronbach's alpha values for Perceived Consumer Purchase Behaviour (PCB), Perceived Technology Readiness (PTECH), Perceived Supports (PSUPP) and Digital Payment Adoption (DPA).

Table 3.1 Reliability Test (N = 211)

Variables	Cronbach's Alpha	No. of Items
Perceived Consumer Behaviour	0.751	8
Perceived Technological Readiness	0.760	8
Perceived Support from The Merchants or Government	0.702	5
Digital Payment Adoption	0.701	6

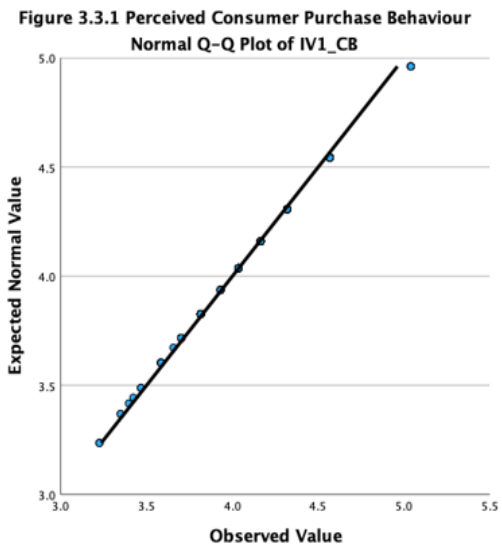
Based on Table 3.1 Reliability Test, the value of Cronbach Alpha for PCB is 0.751 with 8 items, the value for PTECH is 0.760 with 8 items, PSUPP is 0.702 with 5 items, and DPA is 0.701 with 6 items. Since Cronbach's Alpha value is between 0.6 and 0.8, all 4 variables, in the construct are reliable.

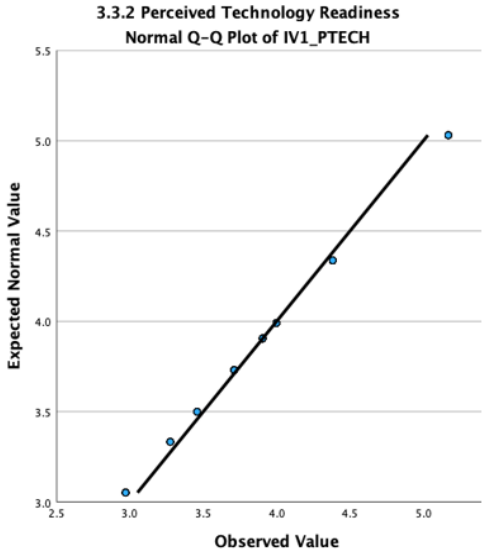
3.3 Normality Test and Q-Q Plot

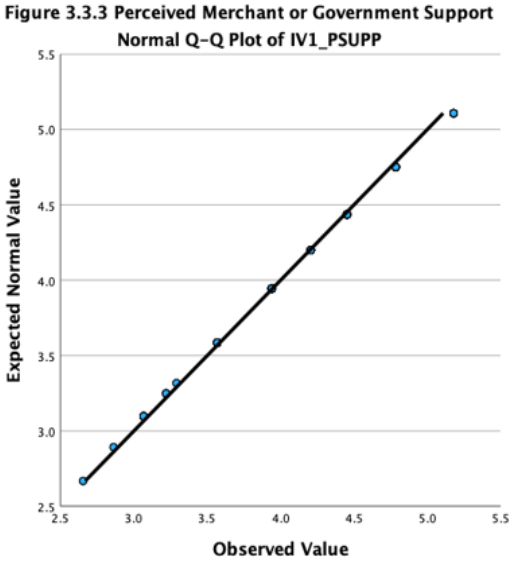
In this study, the Q-Q Plot served as the evidence for normality tests to determine if there were extreme outliers. For normally distributed data, observations should lie approximately on the reference line. If the data is not normal, the points form a curve that scatters away from a straight line (Allen, 2018).

Based on the overall findings, as shown in Figures 3.3.1 to 3.3.4 below, it was found that all variables tested indicated normal distribution.

Additionally, the skewness and kurtosis values in Table 3.2 indicate that the values have a threshold of ±2 therefore, this is consistent with the findings of (Chinna & Yuen, 2015; Gravetter & Wallnau, 2014), who suggest that skewness and kurtosis values within ±2 are indicative of normality.







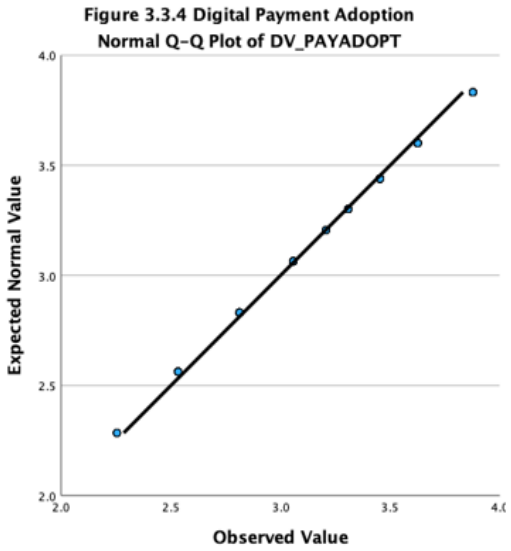


Table 3.2 Skewness and Kurtosis

Factors	Skewness	Kurtosis
Perceived Consumer Purchase Behaviour	-1.491	1.793
Perceived Technology Readiness	1.670	1.378
Perceived Merchant & Government Support	-1.322	1.463
Digital Payment Adoption	0.477	0.885

4. Findings and Interpretation

In this section, the respondents' demographic profiles, descriptive statistics, correlation analysis, and regression analysis are presented.

4.1 Demographic Profile of Respondents

Based on Table 4.1 Demographic Profile of Respondents, more than one in three respondents are engaged in the Food & Beverage industry, comprising 37.4% or 79 of the entire sample. Regarding the number of employees, the majority group of SMEs consists of those companies boasting 6 to 20 employees, 64.5% or 136 in the sample. Concerning the availability of digital payment, the majority of the case companies have implemented digital payment systems in their daily routines, 57.8% or 122. At the same time, the range of outcomes shows that in most of the cases, SMEs in Malaysia began to practice digital payments during the outbreak of the COVID-19 pandemic, 128 or 60.7%.

Table 4.1: Demographic of the respondents (N=211)

Variables	Description	Frequency	Percentage (%)
Industries	Retail/Wholesale	61	28.9%
	Professional Services	48	22.8%
	Food & Beverage	79	37.4%
	Manufacturing	23	10.9%
Number of Employees	1 – 5	15	7.12%
	6 – 20	136	64.5%
	21 - 50	49	23.2%
	51 -100	11	5.21%
Digital Payment Availability	Yes	122	57.8%
	No	89	42.2%
Adoption of Digital Payment	Before Covid-19 (25 Jan 2020)	27	12.8%
	During Covid-19 (Jan 2020 - Jul 2022)	44	20.9%
	Post Covid-19 (After Jul 2022)	128	60.7%
	Not Applicable	12	5.69%

4.2 Mean and Standard Deviation

Table 4.2: Descriptive Statistics (N=211)

Factors	Mean	Std. Deviation	Min	Max
Perceived Consumer Purchase Behaviour	4.132	0.387	1	5
Perceived Technology Readiness	3.988	0.609	1	5
Perceived Merchant or Government Support	3.993	0.571	1	5
Digital Payment Adoption	3.152	0.421	1	5

Table 4.2 Descriptive Statistics shows that perceived customer purchase behaviour has the highest mean value of (4.132 ± 0.387), which indicates that SMEs have a positive perception of customer inclination towards digital payments. A low value of standard deviation indicates general consistency in responses within this category. The perceived technology readiness has a mean value of (3.988 ± 0.609), which is also positive toward this category with a greater value of standard deviation, which indicates variations in perceptions over the technology readiness. The perceived support from merchants or the government gives a mean value of (3.993 ± 0.571), which relates to favourable views with mid-variations in responses. The lowest mean is seen in digital payment adoption at

(3.152±0.421), which shows that this adoption is moderate among SMEs in this category. The deviations in the variables show that the perceptions vary in levels at which the SMEs are adopting digital payments.

4.3 Pearson's Correlation Coefficient Analysis

Table 4.3: Pearson's Correlation Matric (N=211)

Variables	CBP	TR	MGS	DPA
Consumer Purchase Behaviour (CPB)	1			
Technology Readiness (TR)	0.000	1		
Merchant or Government Support (MGS)	0.102	0.327**	1	
Digital Payment Adoption (DPA)	0.032	0.378**	0.065	1

**Correlation is significant at the 0.01 level (2-tailed).

Table 4.3 Pearson's correlation matrix, which elaborates how different factors affect the adoption of digital payments by SMEs is presented. It indicated that consumer purchase behaviour does not correlate with technology readiness, merchant or government support, and digital payment adoption. The correlation coefficient of the first variable with the mentioned factors is 0.000, 0.102, and 0.032, respectively. Based on Table 4.3 above, it is possible to note that technology readiness is significantly positively correlated with merchant or government support and digital payment adoption. The correlation coefficient is 0.327 and 0.378, respectively and are significant at 0.01 levels. Finally, it is possible to mention that merchant or government support was slightly positively correlated with digital payment adoption. In this case, the correlation coefficient is 0.065. The association, however, is insignificant. The results suggest that technology readiness correlates significantly with support from merchants or authorities and digital payment adoption, enhancing these associations.

4.4 Multiple Regression Analysis

Table 4.4: Model Summary

R	R Square	Adjusted R Square	Std. Error Est.
0.385[a]	0.149	0.136	0.392
Predictors: Perceived Consumer Purchase Behaviour, Technological Readiness, and Merchant or Government Support Dependent Variable: Digital Payment Adoption			

Table 4.4 Model Summary shows the results of a regression analysis that was used to analyse the effect of 3 predictors, namely perceived consumer purchase behaviour, technological readiness, and merchant or government support on digital payment adoption by the SMEs. It can be seen that the predictor variables had a correlation coefficient of 0.385. This shows that the three predictors had a moderate positive relationship with the dependent variable. The R Square of 0.149 shows that

approximately 14.9% of the variation observed in digital payment adoption can be explained by the three predictors. The standard error of estimate of 0.392 shows the average distance that the observed values fell from the regression line that was determined. This value indicates that some of the data was not captured by the estimate. The linear relationship portrayed by the model overall had a moderate positive relationship and explained only a modest proportion of the observed variation in the use of digital payment among SMEs.

Table 4.5 ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	5.544	3	1.848	12.042	<0.001b
	Residual	31.769	207	0.153		
	Total	37.314	210			

a. Dependent Variable: Digital Payment Adoption
b. Predictors: Perceived Consumer Purchase Behaviour, Technological Readiness, and Merchant and Government Support

The information in the ANOVA table 4.5 helps to determine an analysis of variance for the given regression model that focuses on examining factors affecting the process of digital payment adoption by SMEs. In this case, the value of (Sum of Squares = 5.544; Degrees of Freedom = 3) in which the (Mean Square = 1.848). When it comes to residuals, the information includes (Sum of Squares = 31.769; Degrees of Freedom = 207) and the (Mean Square = 0.153). As such, the resulting value of the (F-statistic = 12.042; $p < 0.001$). Thus, statistically, it is possible to state that the regression model is significant and the relationship between the predictors, including perceived consumer purchase behaviour, technological readiness, and merchant or government support, has a connection with the adoption of digital payments by SMEs. Since the ($p < 0001$), it can be stated that the results are highly significant and the model fits the data effectively.

Table 4.6 Coefficient

Model 1	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	2.075	0.357		5.816	< 0.001
Perceived Consumer Purchase Behaviour	0.042	0.070	0.039	0.604	0.547
Technological Readiness	0.278	0.047	0.401	5.912	< 0.001
Merchant and Government Support	-0.502	0.050	-0.070	-1.029	0.305

a. Dependent variable: Digital Payment Adoption

Table 4.6 Regression Coefficient was used for analysing the usage of digital payments among SMEs. The constant (intercept) of the model is 2.075, and its (Standard Error = 0.357). The result was statically significant ($t = 5.816$, $p < 0.001$), which means that the

predictor other than the adoption of the technology was also being affected. The predictive value of the dependent variable decreases when all the other predictors are held constant. The (Unstandardized Coefficient for perceived consumer purchase behaviour = 0.042; Standard Error = 0.070). The (Beta = 0.039). However, the result is not statically significant (t = 0.604; p = 0.547. Technological readiness has a statistically significant positive effect on the dependent variable. The (Unstandardized Coefficient = 0.278; Standard Error = 0.047. The (Beta = 0.401). The (t= 5.912; p < 0.001), shows a significant relationship. The (Unstandardized Coefficient of Merchant and Government = -0.502). The (Standard Error = 0.050). The (Beta = -0.070. The result is statically insignificant (t = -1.029; p = 0.305). Thus, only technological readiness has a statistically significant relationship with digital payment adoption by SMEs in the Klang Valley.

Based on Table 4.6 Coefficients, the linear regression equation is as follows:

DPA = 2.075 + 0.278 (TR)

Where:
DPA = Digital Payment Adoption
TR = Technology Readiness

4.5 Summary of Hypothesis

Table 4.7: Summary of Hypothesis

Summary of Hypothesis Results (N = 211)	**P-value**	**Result**
H1: There is a significant relationship between perceived consumer purchase behaviour and digital payment adoption.	0.547	Not Supported by data
H2: There is a significant relationship between perceived technological readiness and digital payments adoption.	< 0.001	Supported by data
H3: There is a significant relationship between perceived support from merchants or the Government and digital payments adoption.	0.305	Not Supported by data

5. Discussion

This section discusses the findings of the study. The results are analysed using the IBM Statistical Package for Social Science, version 29, to investigate the relationship between the independent variables (perceived consumer purchase behaviour, perceived technological readiness, and perceived support from merchants or government) and the dependent variable (digital payment adoption).

Firstly, this study attempted to determine if there is a significant relationship between perceived consumer purchase behaviour and digital payment adoption. Specifically, it aimed to test the hypothesis (H1): There is a significant relationship between perceived consumer purchase behaviour and digital payment adoption among

SMEs in Klang Valley, Malaysia. The result showed an insignificant relationship between perceived consumer purchase behaviour and digital payment adoption among SMEs in Klang Valley, Malaysia ($p > 0.001$). This implies that the data do not support H1 and do not have a significant determinant of digital payment adoption intentions toward SMEs in this study.

The result of this study negates the previous findings of (Ramli *et al.*, 2024), who claim that consumer preference and shopping habits will dictate SMEs' decision to offer digital payment options where consumer preference experiences higher customer satisfaction and increased sales, which will motivate and drive SMEs to align their payment offering to accommodate the consumer purchase behaviour. Furthermore, this study further invalidates the previous finding of (Omrani *et al.*, 2024), who suggest that consumer demand for convenience and security in payment methods will motivate and drive SMEs' to adopt digital payment solutions.

However, another school of thought (Chen & Lin, 2019) claims that SMEs still need to overcome significant barriers of the high implantation cost of digital payment offerings and technological complexity, despite consumer preference or purchase behaviour is essential. The later study aligned with the findings of this study.

Secondly, this study endeavoured to answer if there is a statistically significant relationship between perceived technological readiness and the adoption of digital payments by SMEs in Klang Valley, Malaysia and tested hypothesis H2: There is a statistically significant relationship between perceived technological readiness digital payments adoption by SMEs in Klang Valley, Malaysia.

The results have shown that there is a significant relationship between perceived technological readiness and the adoption of digital payments by SMEs in Klang Valley, Malaysia ($p = 0.001$). The findings of this study align with (Hongwei & Hui, 2021), who emphasize the importance of technology readiness models for smoothing the digital adoption processes. Similarly, (Carvajal-Álvarez & Valencia-Pérez, 2019) highlight the influence of digital infrastructure and workforce adaptability on readiness perceptions. They found that SMEs with these features are more likely to embrace technological advancements, including digital payments.

However, this study invalidates the finding by (Adams, 2019), who found no significant association between perceived technological readiness and actual adoption rates among Indian SMEs, highlighting the potential discrepancy between stated openness and actual implementation. Additionally, (Rachmawati *et al.*, 2020) propose e-readiness models to enhance adoption processes, but their practical effectiveness remains unclear due to the lack of field testing. Moreover, (Nasir *et al.*, 2022) suggest that cultural factors rather than technological readiness can influence how SMEs view technology and adopt digital payment methods.

Lastly, this study strived to answer if there is a significant relationship between perceived support from merchants or the Government and digital payment adoption by SMEs in Klang Valley, Malaysia and tested Hypothesis H3: There is a significant relationship between perceived support from merchants or the Government and digital

payment adoption. The results, however, revealed an insignificant relationship ($p > 0.001$), suggesting that SMEs' perceptions of support did not directly influence their adoption decisions in this specific context.

Previous findings of (Naved *et al.*, 2022), state that merchants that support and control over customers' personal data and safeguarding will be able to build trust, foster customers, and drive SMEs to adopt digital payment. But, (Naved *et al.*, 2022) findings have been negated in this study. Furthermore, a study by (Jain *et al.*, 2021) has also been contradicted by this study, which mentions that merchants adopting various measures are likely to gain a competitive edge by fostering a more profound sense of trust and confidence among consumers.

Aside from that, support from the Government as a gatekeeper and mediator to regulate consumer sensitive information, convey a sense of privacy and security to consumers and reinforce trust in digital payment does not play a significant role in driving SMEs to adopt digital payment, according to this study. Additionally, (Hanaysha, 2017) study is in line with this study as (Hanaysha, 2017) mentions that the extent to which government programs translate into increased digital payment adoption remains unclear.

RO3: To study if there is a significant relationship between perceived support from merchants or the Government and digital payments adoption.

6. Conclusion

This study examines the determinants of Malaysian SMEs' adoption of digital payments after the COVID-19 pandemic by focusing on perceived consumer behaviour, technology readiness, and external support. The research provides insights into what drives cashless payments and the use of financial technologies. Such knowledge empowers financial institutions to design user-friendly systems, increase inclusivity in finance, open up new revenue streams, and improve customer relationships. Based on the insights into small business owners' preferences, companies can refine their strategies and marketing activities. The participation of SMEs means that the voices of these firms are heard, and more solutions are created and tailored to their situation. From these research outcomes, policymakers may also understand what infrastructure or investment in certain technologies may be required.

The first objective of this study was to examine if there is a relationship between consumer purchase behaviour and digital payment adoption. Previous scholars (Ramli *et al.*, 2024; Omrani *et al.*, 2024; Kanapathipillai *et al.*, 2023; Prasad *et al.*, 2019) found that SMEs that aligned their payment offerings with consumer preferences, convenience, and security in payment methods motivates SMEs to adopt digital payment solutions. But, their findings are invalidated by this study. This study is more consistent with the opinions expressed by (Wang & Li, 2020; Chen & Lin, 2019). In other words, it can be suggested that factors such as the high costs for the implementation of a relevant system

and the broad concept of the convenience of traditional payment methods may affect an SME's willingness to adopt a digital payment system more significantly compared to consumer-driven barriers. To a certain extent, the identified trend implies that adopting payment systems should primarily be determined by effectiveness and cost-efficiency rather than consumers' purchase behaviour.

This study, therefore, challenges previous research that proposed consumer purchase behaviour as a primary factor for SMEs using digital payment methods. SME's interest in digital payment innovation is determined by both an aversion to the high costs, system failures, and customer inconvenience that were previously the main factors for innovation in this regard. This change in approach is consistent with the technological and organizational contexts of the TOE model and implies that SMEs should concentrate innovation priorities on readiness for innovation rather than expecting customer preferences. Therefore, this study has bridged the gap in the literature and achieved the first research objective.

The second objective of this study was to scrutinise if there is a significant relationship between perceived technological readiness and digital payments adoption. This study is parallel to the findings of previous scholars (Balakrishnan, 2023; Sani *et al.*, 2021; Najib & Fahma, 2020; Giampietri & Trestini, 2020; Wiese & Humbani, 2019; Sinha *et al.*, 2019; Rachmawati *et al.*, 2020; Musa & Njeru, 2023; Carvajal-Álvarez and Valencia-Pérez, 2019). Additionally, (Hongwei & Hui, 2021) stated that SMEs need to have the necessary infrastructure and capabilities to adopt digital payment solutions effectively. This includes upgrading technology systems, training employees, and ensuring compatibility with digital payment platforms. On the other hand, this study invalidates the findings of (Wijayanto, 2024; Riswandi & Permadi, 2022; Nasir *et al.*, 2022; Adams, 2019), who have discovered that technological readiness is insignificant for the adoption of digital payment systems and argue that the perception of ease of use and usefulness of e-commerce technology and MSME owners' mindset should be considered in order to understand the adoption digital payments.

These findings are important because understanding the challenges and opportunities associated with technological readiness will inform the type of strategies that the government and relevant stakeholders should adopt to transition SMEs to a cash-lite payment system. There is evidence to support the fact that SMEs' perceptions of technological readiness are closely related to their adoption of digital payments. However, there appears to be a disconnect between qualities of perceived technology readiness and the natures of the tools inducted, implying that longitudinal studies are required to determine the time scholars and stakeholders should use to ensure their tools correlate over time, based on readiness views (Rafiq *et al.*, 2019).

This study shows the direct implication of the importance given to the technological context in the TOE framework. and highlight the significance of technological infrastructure, hence highlighting a call for SMEs to invest in technology aspects as enablers of growth towards digital payment adoption. This alignment with the TOE framework further emphasizes that technological preparedness is a key driver in

making adoption decisions. Therefore, this study has narrowed the gap in the literature and achieved the second research objective.

The third research objective was to study if there is a significant relationship between perceived support from merchants or the Government and digital payments adoption. The various nature of perceived support from merchants and government is highlighted, emphasizing the importance of factors such as consumer-centric privacy measures, cross-border regulatory alignment, and government-led awareness initiatives. One of the critical factors influencing SMEs' adoption of digital payments is perceived support from merchants and the government. According to (Rath & Kumar, 2021), merchants play a crucial role in facilitating digital payment adoption by ensuring secure transactions and providing customer-centric privacy measures. Similarly, their study indicated that government support through regulatory frameworks, public awareness campaigns, and policy initiatives is instrumental in creating an enabling environment for digital payment adoption among SMEs. But this study negates the findings of (Rath & Kumar, 2021). On the other hand, this study is in line with (Mishra, 2024), who reveals that lack of awareness and understanding of QR code payments among consumers and merchants, along with other factors like demand side and taxation, hinders the adoption of digital payments.

By examining the perceived level of support from both merchants and the government, this study aims to understand how these factors drive SMEs' intention to use digital payment systems, particularly in the context of post-COVID conditions in the Klang Valley. However, (Maran *et al.*, 2021) indicated that there is a notable gap in research focused on understanding barriers faced by SMEs in digital payments, particularly within specific contexts like Malaysia, as the country's digital payment is still in the developing stage.

The significance of this study lies in the fact that internal factors, such as technological readiness, are more important. The internal-focused stimulus for adoption is also consistent with the organizational and technological contexts of the TOE framework as both in-company readiness resource availability are found to be the main reasons for digital payment adoption rather than any support from the merchants or the government. Therefore, SMEs should bear in mind the importance of an internally developed capability and not rely on external expertise when considering the adoption of digital payment. Therefore, this study has bridged the gap in the literature and achieved the third research objective.

Thus, it can be seen that this comprehensive study aimed to discuss the relationship between consumer behaviour, technological readiness, merchant support, and government policy in adopting digital payment of SMEs. By emphasizing these issues, stakeholders can make joint efforts to contribute to innovation, financial inclusion, and economic development, thereby helping SMEs better fulfill the coming digital age.

7. Limitations and Further Research

This research, like any other research, also suffers from a number of limitations. First, the investigation focuses on certain variables and measures them at a certain moment. Thus, it seems to ignore the potential impact of external factors such as fluctuations in economic trends, government rules and regulations, and technological progress. Second, the discussed work also lacks the assessment of long-term payment use and the measurement of continued behaviour, which can potentially be different from the initial decision. Considering the listed limitations, future research must consider these aspects and incorporate them into the study design. In this connection, it is reasonable to recommend that future research to use a longitudinal design. It will help researchers to investigate SMEs' preferences and behaviour in this area for a certain period of time. Additionally, it appears crucial to enlarge the sample size and study SMEs from different sectors. The recommended approach can help to create a more credible basis to develop recommendations and solutions for policymakers, consultants, and people running SMEs.

Acknowledgements
The authors would like to express their sincere gratitude to the respondents for their cooperation in allowing them to conduct this study and for taking the time to answer the questionnaire.

Conflict of Interest Statement
The authors declared that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest. The authors are not employed by, nor do they work for, any company or on behalf of any organization or group or any other entity that has financial or non-financial interests in the materials, services, or technologies mentioned in this manuscript.

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