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Understanding the Resistance Towards Apple Pay among Malaysians

Krishna Moorthy[1*], Yong Qing Low[1], Chun T'ing Loh[2]

*Corresponding author: krishna.manicka@xmu.edu.my
[1]Xiamen University Malaysia, Selangor, Malaysia
[2]Universiti Tunku Abdul Rahman, Perak, Malaysia

Abstract

This study investigates the resistance towards Apple Pay among Malaysians. The research is supported by the Innovation Resistance Model (IRT), which offers a comprehensive framework to understand and analyze the factors that impede the acceptance and usage of technological innovations. The study utilizes a quantitative approach, employing a questionnaire survey to collect data from a sample of Malaysian consumers. Statistical Package for Social Sciences (SPSS) is utilized for data analysis. The findings shed light on the specific barriers that Malaysians encounter when considering the adoption of Apple Pay, including the usage barrier, value barrier, risk barrier, tradition barrier, and image barrier. The results provide insights into the underlying reasons behind resistance towards Apple Pay and contribute to the existing body of knowledge on mobile payment adoption. The study's implications offer valuable recommendations for businesses, policymakers, and other stakeholders seeking to promote the wider acceptance and adoption of Apple Pay in the Malaysian context. By addressing these barriers, it is possible to foster trust, enhance user experience, and facilitate the integration of Apple Pay into the everyday lives of Malaysians, thereby transforming the landscape of mobile payments in the country.

Keywords: Barriers, Apple Pay, Mobile Payment, Innovation Resistance Theory (IRT), Malaysia.

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1.0 Introduction

The emergence of e-commerce and mobile commerce has improved processes and systems for efficient transactions (Ciupac-Ulici et al., 2022). Electronic payment methods such as mobile payment systems have become popular in Malaysia. Malaysia has gradually encouraged the adoption of mobile payments, with the e-Tunai Rakyat program providing a digital benefit to certified Malaysians (Omsan, 2023). The COVID-19 pandemic has further boosted the development of mobile payments in Malaysia. Apple Pay was launched in August 2022, but only 4% of Malaysian users use it. This study examines barriers to adopting Apple Pay in Malaysia using the Innovation Resistance Theory (IRT). The quantitative research method uses Google Forms data and SPSS analysis. The results will help managers and policymakers develop effective strategies to capture consumer intentions and experiences with Apple Pay in a volatile marketplace. This policy will encourage greater adoption of Apple Pay in Malaysia and promote digital platforms and web-based applications.

1.1 Background of Study

The rapid growth of the network economy and mobile payment industry has led to the introduction of mobile payment tools like Apple Pay in Malaysia. This research aims to identify and analyze barriers preventing widespread adoption of Apple Pay, offering valuable insights for mobile payment service providers. By addressing these obstacles, stakeholders can develop effective strategies to encourage greater acceptance and usage, promoting the growth and development of the mobile payment industry in Malaysia.

1.2 Apple Pay

Apple Pay allows users to store and use credit and debit cards in Apple Wallet by tapping on a near field communications (NFC) reader, in apps or on the web. This feature is available on all Apple devices, including iPhone, iPad, Apple Watch, and Mac. In December 2020, Apple partnered with third-party companies like Stripe and PayPal to

make this feature available. Privacy is the top priority to protect against fraud. Apple Pay aims to render wallets obsolete, eliminating the need for people to search for credit or debit cards. It can function in any location that allows NFC-based contactless payments, thanks to its use of existing NFC technology (Clover, 2023).

1.3 Security

People are increasingly concerned about security in payments and transactions, particularly in e-commerce functions like network security. Internet businesses, particularly small ones, are vulnerable to payment fraud due to inadequate protection. Customers trust and purchase from online shops implicitly, making them vulnerable to cybercrime. The importance of security has been highlighted in the studies by Amoroso and Watanabe (2012) and Bagla and Sancheti (2018), which demonstrated a positive impact on intention to use when there are more security features. Hence, consumers should exercise caution when selecting payment methods that emphasize security. Apple Pay offers a secure and convenient payment method for customers using their iPhone, iPad, or Apple Watch, ensuring integrated security in both hardware and software. This approach provides a more convenient and secure alternative to swiping a credit or debit card.

1.4 Near Field Communication (NFC)

NFC, or Near Field Communication, is an evolution of radio-frequency identification (RFID) technology. Although it is very similar to RFID, it offers more sophisticated features and improved security. NFC technology allows devices like phones and smartwatches to exchange small bits of data with other devices and read NFC-equipped cards over relatively short distances. The most widespread use of NFC is for mobile payments (Hollington & Bizzaco, 2024). NFC can generate electrical current within passive components or communicate data, making it suitable for passive devices without power. After activating Apple Pay on an iPhone, the phone is touched on the contactless terminal to establish a connection via NFC. The owner may be asked to scan their

fingerprint or Face ID to authorize the transaction, and payments will be processed in the same manner.

1.5 Problem Statement

As of June 2023, the UK (37%) and the US (34%) have the most respondents using Apple Pay for online payments. In third place for using Apple Pay for online payments is Australia (24%). In China and Japan, the Apple Pay users are 22% each (Statista.com, 2023). In Vietnam, the findings of the study by Sang (2024) suggest that the pragmatic orientation of Generation Z towards the functionality and ease of use of Apple Pay has a significant impact on their adoption of this payment system in Vietnam.

Apple Pay has been available in Malaysia since 2022, but its adoption rate among Malaysians remains low at only 4% (Mehta, 2022; Malarvizhi et al., 2022). This low adoption rate raises concerns about the factors that hinder the widespread adoption of Apple Pay in Malaysia. Currently, there is limited research on the barriers to the adoption of Apple Pay among Malaysians. Therefore, this study aims to fill this gap by examining the barriers affecting the adoption of Apple Pay among Malaysians. By addressing these barriers, stakeholders can create a conducive environment for widespread adoption, contributing to the growth and development of the mobile payment industry, and promoting digital platforms and web-based applications to align with the cashless society vision of Malaysia.

1.6 Research Scope

As Apple Pay has just been launched in Malaysia in August 2022, this research aims to delve into its adoption barriers among Malaysians, through the lens of the Innovation Resistance Theory (IRT). The IRT comprises six constructs, namely, Usage Barrier (UB), Value Barrier (VB), Risk Barrier (RB), Tradition Barrier (TB), Image Barrier (IB), and Resistance towards Apple Pay.

1.7 Research Questions

RQ1: What is the relationship between Usage Barrier (UB) and the resistance towards Apple Pay among Malaysians?

RQ2: What is the relationship between Value Barrier (VB) and the resistance towards Apple Pay among Malaysians?

RQ3: What is the relationship between Risk Barrier (RB) and the resistance towards Apple Pay among Malaysians?

RQ4: What is the relationship between Tradition Barrier (TB) and the resistance towards Apple Pay among Malaysians?

RQ5: What is the relationship between Image Barrier (IB) and the resistance towards Apple Pay among Malaysians?

1.8 Research Objectives

Mobile wallets are an emerging trend in mobile payments (Kriegel, 2021). While research on other mobile payment tools (i.e., TouchnGo, MAE) already exists, little research has been done on Apple Pay until now, especially in Malaysia. The study's main objective is to examine the barriers leading to the resistance towards Apple Pay among Malaysians.

The specific objectives include:

RO1: To investigate the relationship between usage barrier and the resistance towards Apple Pay.

RO2: To examine the relationship between value barrier and the resistance towards Apple Pay.

RO3: To determine the relationship between risk barrier and the resistance towards Apple Pay.

RO4: To identify the relationship between tradition barrier and the resistance towards Apple Pay.

RO5: To discover the relationship between image barrier and the resistance towards Apple Pay.

2.0 Literature Review

2.1 Innovation Resistance Theory

The Innovation Resistance Theory (IRT) is utilized in this study to analyze consumers' resistance to technology adoption that jeopardizes trust and existing situations (Talwar et al., 2021). As shown in Figure 1, IRT identifies two main barriers leading to innovation resistance, namely, functional barriers like UB, VB, and RB; and psychological barriers such as TB and IB (Eriksson et al., 2021; Ram & Sheth, 1989). Functional barriers arise when consumers undergo significant changes in new technology adoption, while psychological barriers are created when consumers' beliefs clash. This theory highlights the importance of understanding and addressing consumer resistance to new technologies to ensure successful adoption.

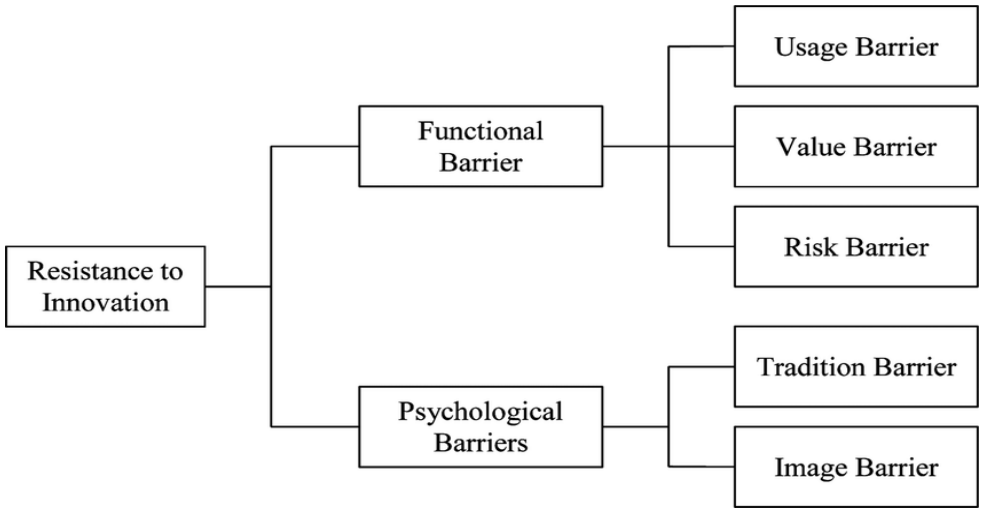

Figure 1: Innovation Resistance Theory (IRT) (Ram & Sheth, 1989)

IRT has been used extensively in various fields of research, including electronic commerce (Lian & Yen, 2014), political electronic communication (Hong & Chang, 2013), and digital devices recycling platforms (Tang & Chen, 2021). The findings of the study by Verma et al. (2023) demonstrate that apart from the value barrier, all the other barriers have negative and significant impacts on consumers' feelings and emotions in food delivery applications. However, the study by Kaur et al. (2020) concluded that the tradition and image barriers did not share any association with the user intention. In this context, this research explores barriers to Apple Pay adoption among Malaysians, focusing on electronic commerce. Consumers may resist adopting smart items due to perceived novelty and unfamiliarity. Understanding and researching resistance to innovation is crucial, as it has a high failure rate in the corporate sector. As previous studies primarily used technology acceptance theories without considering innovation resistance, this study aims to fill in the research gap by studying innovation resistance using Ram and Sheth's framework.

2.2 Resistance to Apple Pay

Resistance to innovation is the opposition or negative response users display when faced with changes in technology (Khan & Kim, 2009). Understanding this concept is crucial for a country's economic development. Researchers are currently studying factors influencing consumer behavior regarding resistance to innovation. This study aims to improve our understanding of consumers' perceptions and attitudes towards innovation (Cornescu & Adam, 2013). Resistance towards Apple Pay is the act of opposing its implementation. The study by Cheng et al. (2018) found that usage, value, risk, and tradition barriers were significantly and positively associated with resistance toward e-wallet adoption in Malaysia.

2.3 Usage Barrier

This research examines the usability of Apple Pay and users' adaptation to overcome usage barriers when technological products or services do not align with users' values,

experiences, and conditions, impacting their perception of ease of use. New technology deviates from habits, requiring longer user acceptance (Talwar et al., 2020). Usage barriers hinder users' adoption of modern technologies, impacting attitudes toward e-wallets and causing resistance (Trivedi, 2016). Research by Moorthy et al. (2017) confirms that usage barriers significantly influence the adoption of innovations, and Cheng et al. (2018) found a significant and positive relationship between usage barriers and consumers' resistance to adopting e-wallet payment systems. The study by Trivedi (2016) concluded that the Usage Barrier significantly and adversely affects the attitude toward using e-wallets. Also, the Usage Barrier is a foremost variable that is negatively correlated to the adoption of PayPal mobile payment among gen-X consumers in Malaysia (Low, 2016). Thus, the following hypothesis has been formulated:

H1: There is a positive relationship between Usage Barrier and resistance towards Apple Pay.

2.4 Value Barrier

The value barrier compares innovation's performance to price with alternatives (Talwar et al., 2020). Traditional payment methods are preferred by consumers due to perceived effort (Dotzauer & Haiss, 2017). Talwar et al. (2020) study revealed that value barriers positively impact user resistance to technology adoption. Aransyah et al. (2020)'s research showed that value barriers positively impact consumer resistance to e-wallet adoption. E-wallet users often lack awareness of their benefits, thus, service providers should enhance functionality, stipulate detailed information, and increase user confidence in adopting e-wallets (Cheng et al., 2018). If Apple Pay does not offer as much value as other alternatives, consumers are more likely to resist the adoption. The research findings by Kumar and Chawla (2023) indicate that value barriers adversely affect the intention to adopt mobile payment services. Therefore, a second hypothesis has been proposed as below:

H2: There is a positive relationship between Value Barrier and resistance towards Apple Pay.

2.5 Risk Barrier

Risk barriers are consumers' perceptions of uncertainty which hinder innovation adoption (Soh et al., 2020; Talwar et al., 2021). Risk barriers to innovation can be physical, economical, functional, or social. Physical risk is associated with potential physical harm; economic risk involves high costs; functional risk relates to low performance; and social risk concerns negative perceptions (Kleijnen et al., 2009). Security and privacy concerns pose significant risks to financial data (Talwar et al., 2020; Musyaffi et al., 2021) and hinder digital payment adoption (Ng & Wakenshaw, 2017). Risk barriers are positively correlated with resistance, which has a negative impact on mobile commerce adoption among Generation X in Malaysia (Moorthy et al., 2017). In this study, the respondents were Generation X, in the age group of 44 to 59, and were born between the years 1965 and 1980. Prior studies have found that risk barriers are significantly associated with the adoption of mobile payment systems. Lian and Yen (2014) determined that the Risk Barrier negatively affects older adults' intention toward online shopping in Taiwan. Thus, the following hypothesis is developed:

H3: There is a positive relationship between Risk Barrier and resistance towards Apple Pay.

2.6 Tradition Barrier

Tradition barriers (TB) hinder the adoption of innovative payment solutions due to cultural norms and social customs (Soh et al., 2020). TB hinders technological innovation by challenging consumers to adapt to cultural change (Talwar et al., 2020). In this study, TB refers to barriers that require consumers to adjust their routines to embrace Apple Pay. Low (2016) found a negative correlation between TB and PayPal mobile payment adoption, suggesting Generation X prefers physical payment methods. TB hinders technological advancements in specific markets. Thus, addressing these barriers is crucial for organizations promoting mobile payment solutions. If the adoption of Apple Pay requires an alteration of current culture or daily habits, consumers are more inclined to develop resistance towards Apple Pay. Tradition Barrier also significantly leads to

resistance towards e-wallets (Cheng et al., 2018). Consequently, the fourth hypothesis has been put forward as below:

H4: There is a positive relationship between Traditional Barrier and resistance towards Apple Pay.

2.7 Image Barrier

Image barrier refers to resistance individuals face when evaluating the complexity and convenience of innovations (Chen et al., 2022). This barrier arises when specific technologies are perceived as unsafe, resulting in an unfavorable impression (Kaur et al., 2020). Users' negative perceptions of innovation identity include brand, origin, and potential adverse effects (Laukkanen et al., 2007). In this research, an Image Barrier (IB) arises when users negatively perceive Apple Pay's identity. Image barriers arise from consumers' stereotypical perceptions of innovations, causing unfavorable perceptions that contradict preferences (Soh et al., 2020). IB correlates positively with Malaysians' reluctance to adopt PayPal mobile payment (Low, 2016). Kaur et al. (2020) found that Image Barriers account for 59% of users' resistance towards mobile payments, impacting technology decisions. Lian et al. (2012) revealed that the Image Barrier negatively influences consumers' intention to use an online service. Therefore, the fifth hypothesis is proposed:

H5: There is a positive relationship between IB and resistance towards Apple Pay.

2.8 Research Model

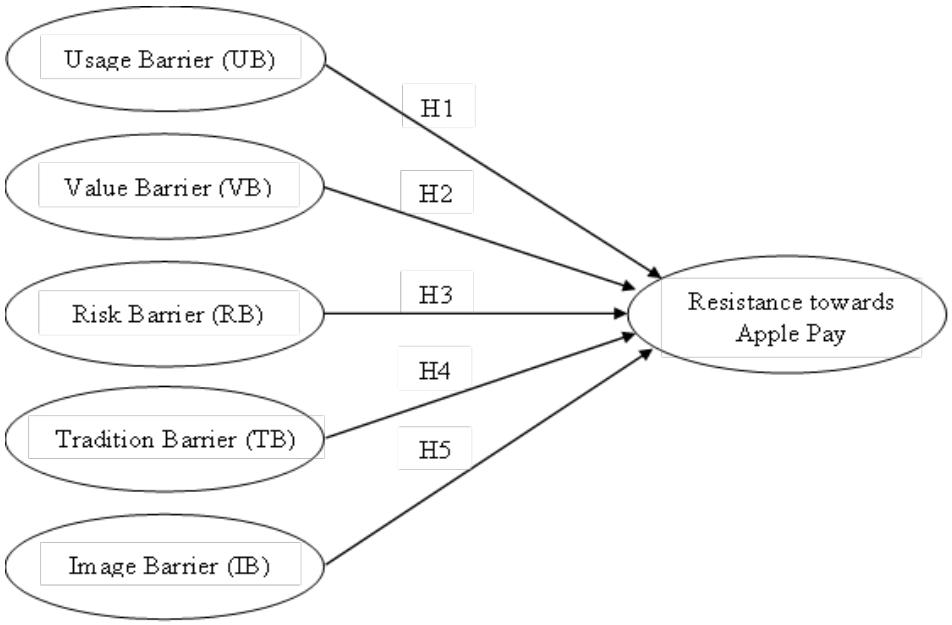

Figure 2: Research Model

3.0 Research Methodology

3.1 Research Design

A research design is a comprehensive plan that connects conceptual research questions to empirical research, providing precise instructions on techniques and methods (Creswell, 2014). This study employs a quantitative research technique, using questionnaires delivered to target respondents. The cross-sectional design focuses on Apple Pay adoption hurdles in Malaysia, using Likert-scale questionnaires delivered through internet channels and social media sites (Low, 2016). Cross-sectional studies are favorable because they are rapid and cost-effective, needing fewer resources than studies with longer follow-up periods (Mann, 2003). Data collected will be evaluated using correlation and regression analysis with SPSS software to test the study hypotheses.

3.2 Population and Data Collection Method

In this study, the target population refers to Apple users in Malaysia who are not using Apple Pay. Among mobile phone users in Malaysia, 32.7% of them are iPhone users (about 9.48 million users), but only 4% of them are using Apple Pay (StatCounter, 2023). A Google Form survey with two sections was used to collect data. The first section asked questions to gather respondents' basic information, such as gender, age, education level, and whether they are Apple Pay users. The second section consists of questions divided according to the six components of the Innovation Resistance Theory (IRT), namely, Usage Barriers, Value Barriers, Risk Barriers, Tradition Barriers, and Image Barriers. The 26 items were measured using a five-point Likert scale.

3.3 Sampling Technique

This study analyzes the barriers leading to Apple Pay resistance among Malaysian iPhone users. To collect data, researchers used convenience sampling, a non-probability sampling technique that selects participants who are easily accessible and available (Mweshi & Sakyi, 2020). This approach is practical and efficient, allowing for data collection in a short period (Pickering & Blaszczynski, 2021). Multiple sources and methods were used to collect the data to avoid possible bias. Also, a normality test was conducted to ensure the data collected was normal.

3.4 Sample Size

According to Hinkin (1995), an item-to-response ratio should range between 1:4 and 1:10. In this study, there are 26 items to be measured in the questionnaire, and so a sample size ranging from 104 to 260 would be considered sufficient and useful for data analysis.

3.5 Data Analysis Method

The survey data obtained for this study has undergone comprehensive analysis using the Statistical Package for the Social Sciences (SPSS) software. Researchers can effectively

explore and interpret the collected data by employing SPSS, a widely recognized and robust statistical tool.

3.6 Variables and Measurement Items

There are five independent variables, namely, Usage barrier, Value barrier, Risk barrier, Tradition barrier, and Image barrier and one dependent variable, which is Resistance towards Apple Pay. The questions for the variables were adapted from past research, namely, Laukkanen et al. (2009), Elbadrawy and Aziz (2011), Peng et al. (2011), and Lian and Yen (2014).

5-point Likert scales from 1 (strongly disagree) to 5 (strongly agree) were developed to measure each item to allow the individual to express how much he or she agrees or disagrees with a specific statement. The benefit of Likert scales is that they do not ask the respondent to give a simple yes or no response, but instead allow for degrees of opinion (McLeod, 2019). The Likert scale questions were validated through the Reliability test for their reliability and consistency.

4.0 Findings

4.1 Pilot Test

A pilot study is the initial research phase, conducted on a smaller scale to refine the main study's design (Arnold et al., 2009). It evaluates the accuracy of the study questions and assesses the integrity of the questionnaire (Thabane et al., 2010). A reliability test has been performed on a set of 30 questionnaires, ensuring internal consistency and reliable results. The respondents for the pilot test were similar to those for the actual survey regarding age, gender, and education.

4.2 Descriptive Analysis

4.2.1 Demographic Profile of Respondents

The research successfully gathered a substantial amount of data by collecting a total of 253 responses through the distribution of survey questionnaires. Table 1 below illustrates the background information of the 253 respondents.

Table 1: Sociodemographic Characteristics of Participants

Demographic Profile		Frequency	Percentage (%)
Gender	Male	83	32.8
	Female	170	67.2
Age	18 - 20	39	15.4
	21 - 30	108	42.7
	31 - 40	54	21.3
	41 - 50	34	13.4
	51 and above	18	7.1
Highest Educational Level	Secondary	36	14.2
	Pre-U/Foundation	31	12.3
	Diploma	59	23.3
	Bachelor/Master	122	48.2
	PhD	3	1.2
	Others:	2	0.8
iPhone User	Yes	221	87.4
	No	32	12.6

The study's demographic profile shows that most respondents are female, accounting for 67.2%, with males comprising 32.8%. The largest age group is 21-30, with 42.7% of respondents. The study includes a diverse range of age groups, including those aged 51 and above. Most of the respondents hold a bachelor's or master's degree at 48.2%. while diploma holders account for 23.3%. Most respondents are iPhone users, with 12.6% not using an iPhone.

4.3 Reliability Test of Pilot Test

The results of the reliability tests of the pilot test with 30 respondents and the full data performed are shown in Tables 2 and 3 below. All the variables exhibited a Cronbach's Alpha value surpassing the minimum threshold of 0.7, indicating excellent reliability and internal consistency (Cronbach & Shavelson, 2004).

Table 2: Reliability Test of Pilot Test

Variables	Number of Items	Cronbach's Alpha	Information
Usage Barrier	4	0.975	Reliable
Value Barrier	4	0.929	Reliable
Risk Barrier	5	0.975	Reliable
Tradition Barrier	4	0.720	Reliable
Image Barrier	4	0.950	Reliable
Adoption of Apple Pay	5	0.986	Reliable

Table 3: Reliability Test of Full Data

Variables	Number of Items	Cronbach's Alpha	Reliability
Usage Barrier	4	0.991	Reliable
Value Barrier	4	0.706	Reliable
Risk Barrier	5	0.865	Reliable
Tradition Barrier	4	0.715	Reliable
Image Barrier	4	0.959	Reliable
Resistance Towards Apple Pay	5	0.959	Reliable

4.4 Descriptive Statistic

Table 4: Descriptive Statistics

Variables	Minimum	Maximum	Mean	Standard Deviation
Usage Barrier (UB)	1.00	5.00	3.5475	1.55194
Value Barrier (VB)	1.00	5.00	3.8235	0.98047
Risk Barrier (RB)	1.00	5.00	3.4552	1.32872
Tradition Barrier (TB)	1.50	5.00	4.1629	0.86046
Image Barrier (IB)	1.00	5.00	3.2862	1.57568
Resistance Towards Apple Pay (RTAP)	1.00	5.00	3.0000	1.55657

The study's descriptive statistics shown in Table 4 above reveal a range of UB, VB, RB, TB, IB, and resistance towards Apple Pay. The mean of TB was the highest at 4.1629, while UB, VB, RB, and IB have the mean of 3.5475, 3.8235, 3.4552, and 3.2862 respectively. Finally, the RTAP variable has a mean of 3.0000. For all the variables, the minimum was 1 and the maximum was 5 except for the TB variable, with the data ranges from 1.50 to 5.00.

4.5 Normality Test

Table 5: Normality Test

Variables	Skewness	Kurtosis	Normality
Usage Barrier (UB)	-.710	-1.108	Normal
Value Barrier (VB)	-1.011	.442	Normal
Risk Barrier (RB)	-.560	-.810	Normal
Tradition Barrier (TB)	-1.065	.657	Normal
Image Barrier (IB)	-.291	-1.490	Normal
Resistance Towards Apple Pay (RTAP)	.024	-1.545	Normal

A normality test was conducted to assess the distribution of variables. The results in Table 5 above suggest that the sample data of all variables exhibit a normal distribution, as all the skewness and kurtosis values fell within the suggested values of ± 3 and ± 10 (Kline, 2005).

4.6 Inferential Analysis

4.6.1 Pearson Correlation Coefficient Analysis

Table 6: Descriptive Statistics and Correlations for Study Variables

	UB	VB	RB	TB	IB	RTAP
UB	1					
VB	.455**	1				
RB	-.072	.344**	1			
TB	.104	.395**	.366**	1		
IB	.450**	.396**	.429**	.052	1	
A	.584**	.325**	.198**	.005	.836**	1

From Table 6 above, it can be seen that there is no multicollinearity issue since all the correlation coefficients between the variables are less than 0.90.

4.6.2 Multiple Linear Regression

Table 7: MLR Model Summary

R[a]	.759
R-squared	0.576
Adjusted R-squared	0.571
F-Value	104.00
P-value	.000[b]

a. Dependent variable: RTAP
b. Predictors: Constant, UB, VB, RB, TB, IB

It can be seen from Table 7 above that there is a strong correlation between the independent variables and the dependent variable since the value of the Correlation coefficient (R) falls between 0.7 and 0.8 (Schober et al., 2018). The value of R^2 of 0.576 explained that 57.6% of the variability of RTAP can be explained by the independent variables UB, VB, RB, TB, and IB. Also, the huge F value with a p-value less than 0.5 indicates that the model is significant and fit.

Table 8: Multiple Linear Regression

	Unstandardised Coefficients		Standardized Coefficient Beta	t	Sig.	VIF	Hypothesis Supported/Not supported
	B	Std. Error					
Constant	5.267	.423		1.219	.224	0	
Usage Barrier (UB)	.271	.145	.251	5.747	.000	4.25637	H1 Supported
Value Barrier (VB)	-.081	.098	-.070	-1.636	.103	4.69165	H2 Not supported
Risk Barrier (RB)	-.107	.115	-.102	-2.309	.022	7.63801	H3 Supported
Tradition Barrier (TB)	.005	.103	.003	.065	.948	6.72701	H4 Not supported
Image Barrier (IB)	.802	.123	.794	17.829	.000	5.09885	H5 Supported

a. Dependent Variable: Resistance towards Apple Pay (RTAP)

From Table 8, it can be seen that the p-values of UB, RB, and IB are less than 0.05. However, the p-values of VB and TB are more than 0.05, implying no significant effect on the dependent variable. Hair et al. (2009) recommended that a large variance inflation factor (VIF) value of 10 or above indicates high collinearity. Table 8 shows that the maximum VIF is 7.63801, suggesting that there is no multicollinearity problem in this study. The beta coefficients are negative or positive and have a *t*-value and significance of the *t*-value associated with each. The beta coefficient is the degree of standard deviation change in the outcome variable for each standard deviation change in the predictor variable.

These findings suggest that the Usage Barrier, Risk Barrier, and Image Barrier are important predictors in explaining the variation in the dependent variable. However, the Value Barrier and Tradition Barrier do not contribute significantly to the prediction of the dependent variable. Therefore, the Multiple Linear Regression (MLR) equation is formed as below:

Resistance towards Apple Pay among Malaysians: 5.267 + 0.271UB -0.081VB– 0.107RB + 0.005TB+.802IB.

5.0 DISCUSSION

Based on the MLR analysis, it has been determined that H1, H3, and H5 are supported, but H2 and H4 are not. Table 9 shows an overview of the hypothesis testing outcomes.

Table 9: Summary of Hypothesis Testing

No.	Hypothesis	Result	Significant Level
H1	There is a positive relationship between UB and RTAP.	Supported	<0.000
H2	There is a positive relationship between VB and RTAP.	Not Supported	0.103
H3	There is a positive relationship between RB and RTAP.	Supported	0.022
H4	There is a positive relationship between TB and RTAP.	Not Supported	0.948
H5	There is a positive relationship between IB and RTAP	Supported	<0.000

For hypothesis 1 (H1), "There is a positive relationship between Usage Barrier (UB) and Resistance towards Apple Pay (RTAP)", the findings show a significant positive relationship between UB and RTAP (Beta = .251, t = 5.747, $p < .01$). Users who find using Apple Pay to be more challenging due to lack of knowledge, unfamiliar with technology, or complexity are more likely to resist its implementation. Research on m-commerce and e-wallet usage also shows that UB has a negative impact on user acceptance of innovation (Moorthy et al., 2017). Mobile payment users are dissuaded from adopting Apple Pay due to a lack of understanding and the perceived complexity of the process. Clear guidance and ease of use are crucial to overcome these obstacles and encourage customers to adopt new payment systems.

For hypothesis 2 (H2), "There is a positive relationship between Value Barrier (VB) and RTAP", the findings show that (Beta = -.070, t = -1.636, $p > .05$), indicating VB does not significantly affect RTAP in Malaysia. This contradicts the initial expectation of a positive relationship between VB and RTAP. The perceived value of Apple Pay among Malaysians may be high, leading to minimal resistance. Previous research by Slade et al. (2014) suggests that a positive perception of the benefits and convenience of mobile payment systems can mitigate resistance. However, Eriksson et

al. (2021); and Chung and Liang (2020) have found that security concerns and perceived complexity are more likely to result in consumers' resistance towards mobile payment services. Additionally, cultural and economic factors within the Malaysian market may have influenced the non-supportive outcome, as existing payment infrastructure and widespread smartphone usage may have established a favorable environment for mobile payment adoption. Future research should explore these factors more thoroughly to understand RTAP in the Malaysian market comprehensively.

For hypothesis 3 (H3), "There is a positive relationship between Risk Barriers (RB) and RTAP", the study supports the positive relationship between perceived RB and RTAP among Malaysians ($p = 0.022$). It suggests that individuals who perceive higher risks associated with Apple Pay are more likely to exhibit resistance. This suggests that concerns related to security, privacy, fraud, or unauthorized transactions may hinder individuals from adopting Apple Pay as a payment method. Previous studies by Noreen et al. (2021) have also found that security and privacy concerns, financial loss or identity theft, and higher risks associated with mobile payment technologies also influence resistance.

For hypothesis 4 (H4), "There is a positive relationship between Tradition Barriers (TB) and RTAP"' the results show that there is no significant relationship between TB and RTAP among Malaysians (H4: Not Supported, $p = 0.948$). This contradicts previous literature suggesting a negative association with intentions. A study by Yu and Chantatub (2016) on the specific influence of TB on mobile payment adoption showed no significant relationship between TB and resistance. Similarly, the research results of Kaur et al. (2020) show that TB does not share any significant association with use intentions and intentions to recommend (ITR) Mobile payment services (MPSs). The study's findings may be attributed to the increasing prevalence and acceptance of digital payment methods, the specific context of Apple Pay as a mobile payment system, and cultural factors and individual preferences within the Malaysian context.

For hypothesis 5 (H5), "There is a positive relationship between Image Barriers (IB) and RTAP, this study found a significant positive relationship between IB and resistance towards RTAP ($p < 0.05$), supporting the hypothesis that individuals' concerns

about Apple Pay's reputation and perceived social acceptance contribute to resistance. IB, such as being perceived as technologically challenged or behind the times, may lead individuals to resist Apple Pay and opt for traditional payment methods. This finding aligns with previous research by Moorthy et al. (2017) and Laukkanen (2016) on mobile payment services, mobile commerce, internet and mobile banking, and PayPal.

6.0 Contributions and Limitations

6.1 Contribution to Theory

This study makes significant contributions to theory and society by exploring the factors influencing the adoption of Apple Pay. Firstly, it adds another study to the existing literature on technology adoption by examining the impact of various barriers, including usage, value, risk, tradition, and image barriers, on individuals' resistance to Apple Pay. By identifying these barriers and their effects, this study expands the understanding of the complex decision-making process involved in adopting new payment technologies. Secondly, this study contributes to the societal understanding of digital payment adoption. By examining the specific context of Apple Pay about barriers and resistance, it provides insights into the socio-cultural factors that shape consumer behaviour. This knowledge is crucial for policymakers, businesses, and researchers in designing strategies and interventions that facilitate the widespread adoption of digital payment systems.

6.2 Contribution to Society and Government

The findings of this study have significant implications for government agencies and policymakers in their efforts to promote digital transformation and financial inclusion. By understanding the barriers to Apple Pay adoption, governments can develop tailored strategies to overcome these hurdles and facilitate the transition towards digital payment systems. The study emphasizes the need for comprehensive policies that address the specific barriers identified, such as improving user education, enhancing the perceived

value and benefits of digital payments, mitigating security concerns, respecting cultural traditions, and enhancing the image and reputation of digital payment platforms. Governments can work in collaboration with financial institutions, businesses, and other stakeholders to create an enabling environment that supports the adoption and usage of digital payment technologies. Furthermore, the study underscores the importance of bridging the digital divide and ensuring equal access to digital payment solutions. Governments can prioritize initiatives that enhance digital literacy, improve infrastructure, and promote financial inclusion to ensure that all segments of society can benefit from the advantages of digital payments. Furthermore, this study offers practical implications for society. It highlights the importance of addressing barriers such as usage difficulties, perceived value, risk concerns, adherence to tradition, and image perceptions to enhance the acceptance and usage of digital payment methods. Policymakers can leverage these findings to develop targeted initiatives, educational campaigns, and regulatory frameworks that address these barriers and foster a cashless society.

Overall, this study's contribution to theory and society lies in advancing the understanding of barriers to Apple Pay adoption and providing actionable insights for governments to foster the adoption of digital payment technologies and promote inclusive financial ecosystems.

6.3 Limitations

Firstly, the focus on Apple Pay restricts data collection to users who utilize Apple devices but do not use Apple Pay. This limitation narrows the scope of the study and may not provide a comprehensive understanding of barriers to the adoption of Apple Pay among all Malaysians. Secondly, the reliance on a questionnaire as the primary data collection method introduces the possibility of inappropriate or biased responses, potentially affecting the accuracy and reliability of the data. Moreover, the study is constrained by time limitations, as it was conducted over a short period. Consequently, the findings only reflect the current perceptions of Malaysians towards Apple Pay, while future changes in attitudes and perceptions may render the study outdated. Lastly, the lack of regional differentiation in data collection is a further limitation. The study does not account for

potential variations in perspectives and barriers across different regions of Malaysia, thereby limiting the ability to generalize the findings to the entire Malaysian population.

7.0 Recommendations for Future Research

Future research should focus on understanding barriers to Apple Pay adoption among Malaysians. A larger-scale study with a diverse sample can provide a comprehensive picture of barriers across different demographics and socioeconomic backgrounds. A mixed methods approach, combining qualitative and quantitative data, and longitudinal studies can track changes in perception and adoption. Examining regional variations within Malaysia can uncover specific challenges and barriers. Exploring cultural factors, trust, and security concerns in the adoption process can provide insights into potential strategies for addressing specific barriers. These recommendations will contribute to a more comprehensive understanding of barriers and facilitate targeted interventions to promote wider adoption of mobile payment systems in Malaysia.

8.0 Conclusion

This research explores the barriers to Apple Pay adoption among Malaysians, revealing usage, risk, and image barriers as significant factors. Security concerns, lack of awareness, and perceived inconvenience due to limited merchant acceptance contribute to resistance. Educational initiatives and alternative payment methods, such as cash, mobile wallets, and traditional cards, are also identified as major obstacles. Addressing these barriers and increasing awareness about Apple Pay's advantages is crucial for promoting its widespread adoption in Malaysia. Expanding the merchant network that accepts Apple Pay can make it more accessible and convenient for users. This study aims to find out the relationship between various barriers and resistance toward Apple Pay. The study results show that the objective has been achieved and also provided some recommendations to the Government and society.

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