UNIVERSITI TEKNOLOGI MARA

FACTORS INFLUENCING CUSTOMERS' USAGE OF E-PAYMENT IN KLANG VALLEY

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FACTORS INFLUENCING CUSTOMERS' USAGE OF E-PAYMENT IN KLANG VALLEY

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Thesis submitted in fulfilment
of the requirements for the degree of
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I declare that the work in this Master of Science was carried out in accordance with the regulations of Universiti Teknologi MARA. It is original and is the result of my own work, unless otherwise indicated or acknowledged as referenced work. This thesis has not been submitted to any other academic institution or non-academic institution for any degree or qualification.

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ABSTRACT

The rapid growth of digital technology has accelerated the adoption of electronic payment (e-payment) systems, particularly in urban areas such as the Klang Valley, Malaysia. Despite widespread availability, variations in usage behavior suggest that multiple factors influence consumers' willingness to adopt e-payment services. This study was conducted to examine the factors influencing customers' usage of e-payment in the Klang Valley, focusing on convenience, security, and speed, with social influence examined as a mediating variable. A quantitative research design was employed using a cross-sectional survey approach. Data were collected from 208 e-payment users residing in the Klang Valley through a structured questionnaire. The data were analyzed using the Statistical Package for the Social Sciences (SPSS), incorporating descriptive analysis, reliability testing, Pearson correlation, multiple regression, and mediation analysis. The findings revealed that convenience and speed have a significant positive relationship with customers' usage of e-payment. In contrast, security was found to have no direct significant relationship with e-payment usage. However, social influence significantly mediated the relationships between convenience and e-payment usage, as well as between security and e-payment usage, indicating that peer influence and social endorsement play a critical role in shaping consumer behavior. These results suggest that while technical factors remain important, social dynamics significantly enhance adoption decisions. This study contributes to the existing literature by extending the Technology Acceptance Model (TAM) and the Unified Theory of Acceptance and Use of Technology (UTAUT) through the inclusion of social influence as a mediating variable in the Malaysian e-payment context. The findings provide practical implications for policymakers, financial institutions, and fintech service providers by highlighting the importance of enhancing user convenience, improving transaction efficiency, and leveraging social influence to promote e-payment adoption.

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LIST OF ABBREVIATION

Abbreviations

CV	Convenience
EPM	E-Payment Method
MCMC	Malaysian Communications and Multimedia Commission
SC	Security
SI	Social Influence
SP	Speed
TAM	Technology Acceptance Model
UTAUT	Unified Theory of Acceptance and Use of Technology

CHAPTER 1
INTRODUCTION

1.1 Introduction

This chapter has provided an outline of the whole research process, such as the background of the study, problem statement, research objectives, research questions, and research hypotheses. This chapter also discusses the scope of research, limitations of research, significance of research, the definition of terms, and the organization of the chapter.

1.2 Background of the study

One of the fastest-growing payment trends in Malaysia is electronic payment (e-payment). Although cash remains a commonly preferred payment option, there has been a gradual shift toward cashless transactions as digital payment technologies continue to evolve. E-payment refers to transactions conducted electronically without the use of physical cash or paper-based instruments, enabling payments through digital platforms such as mobile applications and online banking systems (Kumar et al., 2021). In Malaysia, e-payment systems are promoted as efficient, convenient, and cost-effective mechanisms for transferring funds, offering benefits such as reduced transaction costs, faster processing times, and enhanced accessibility for consumers (Bank Negara Malaysia, 2023).

Despite these advantages, concerns related to consumer privacy and data security remain critical challenges in the adoption of e-payment systems. The exchange of personal and financial information through digital platforms has increased users' vulnerability to data breaches and misuse of information, which may discourage continuous usage. Nevertheless, evidence suggests that Malaysians, including older age groups, have increasingly adopted cashless payment solutions, particularly following the COVID-19 pandemic. Movement Control Order (MCO) restrictions accelerated digital adoption, prompting consumers to shift from cash-based transactions to digital payment methods (BusinessToday, 2022). Malaysia has also surpassed several regional

counterparts in terms of cashless payment acceptance, reflecting strong institutional support and consumer readiness (Ganbold, 2022).

According to the Internet Users Survey conducted by the Malaysian Communications and Multimedia Commission, smartphone penetration in Malaysia exceeded 80 percent across all age groups, with the highest adoption observed among individuals below the age of 35 (MCMC, 2023). Smartphone ownership is consistently high across income levels as well, indicating improved affordability and accessibility. The widespread use of mobile devices has become a key driver of digital payment adoption, as smartphones enable users to conveniently access e-wallets, mobile banking applications, and other digital payment services (Foloosi, 2023).

Social factors further influence consumers' adoption of e-payment systems. Social influence refers to the extent to which individuals perceive that important other believe they should use a particular technology (Singh & Srivastava, 2020). Consistent with the theory of reasoned action, individuals are more likely to engage in a behavior when they perceive that people significant to them are also engaging in similar behaviors (Ajzen & Fishbein, 1975; Venkatesh et al., 2022).

1.3 Problem Statement

The rapid advancement of digital technology has led to the widespread availability of electronic payment (e-payment) systems worldwide. Governments, financial institutions, and fintech companies have actively promoted cashless transactions due to their potential to improve efficiency, reduce transaction costs, and support digital economic growth (World Bank, 2021). In Malaysia, initiatives such as DuitNow QR and various e-wallet incentive programmes have been introduced to encourage the adoption of e-payment systems, particularly in urban regions such as the Klang Valley (Bank Negara Malaysia, 2023). Despite these efforts, the level of e-payment usage among consumers remains inconsistent, suggesting that availability and infrastructure alone do not guarantee widespread adoption.

Previous studies have identified several factors influencing e-payment adoption, including convenience, security, and transaction speed. Empirical evidence generally supports the positive role of convenience and speed in influencing adoption behavior (Tan et al., 2020; Suki et al., 2020). However, findings related to security remain inconclusive, with some studies reporting a significant relationship while others find no

meaningful effect on usage intention (Lim & Ooi, 2020; Rahman et al., 2021). These inconsistencies suggest that the determinants of e-payment usage may be context-specific and influenced by demographic, technological, and social factors.

Furthermore, existing literature has largely focused on examining direct relationships between these factors and e-payment usage, with limited attention given to the mediating role of social influence. Social influence refers to the extent to which individuals' behavior is shaped by peers, family members, and societal norms, and it has been shown to play an important role in technology adoption decisions (Venkatesh et al., 2012; Koo et al., 2020). In highly urbanized and digitally connected environments such as the Klang Valley, consumers are frequently exposed to peer recommendations, social endorsements, and online communities, which may strengthen or weaken the effects of convenience, security, and speed on e-payment usage. However, empirical evidence examining social influence as a mediating variable in the Malaysian e-payment context remains limited.

In addition, many prior studies have focused on specific payment tools, such as e-wallets or mobile banking, rather than examining e-payment usage holistically (Tan et al., 2022). This narrow focus limits the generalizability of findings and does not fully capture overall consumer payment behavior. Moreover, limited research has specifically examined e-payment usage in the Klang Valley, despite its position as Malaysia's most urbanized and digitally advanced region with high internet penetration and fintech exposure (MCMC, 2022).

Given these gaps, there is a need for a comprehensive study that examines the relationships between convenience, security, and transaction speed and customers' usage of e-payment, while also investigating the mediating role of social influence within the Klang Valley context. Addressing these gaps will contribute to a deeper understanding of consumer e-payment behavior and provide valuable insights for policymakers, financial institutions, and fintech providers seeking to promote a sustainable and inclusive cashless ecosystem.

1.4 Research Objective

The specific objectives of this research are:

i. To examine the relationship between convenience and the customers' usage of e-payment in Klang Valley.

ii. To examine the relationship between security and the customers' usage of e-payment in Klang Valley.

iii. To examine the relationship between speed and the customers' usage of e-payment in Klang Valley.

iv. To examine whether the social influence mediates the relationships between convenience and the customers' usage of e-payment in Klang Valley.

v. To examine whether the social influence mediates the relationships between security and the customers' usage of e-payment in Klang Valley.

1.5 Research Questions

The 'initial phase' refers to the research question, which is the first active step in the research process after you have an understanding of what you want to explore.

i. Does convenience have a significant relationship towards the customers' usage of e-payment in Klang Valley?

ii. Does security have a significant relationship with the customers' usage of e-payment in Klang Valley?

iii. Does speed have a significant relationship with the customers' usage of e-payment in Klang Valley?

iv. Does social influence mediate the relationship between the convenience and the customers' usage of e-payment in Klang Valley?

v. Does social influence mediate the relationship between the security and the customers' usage of e-payment in Klang Valley?

1.6 Scope of Research

This study focuses on customers residing in the Klang Valley, Malaysia, and examines the factors influencing their usage of electronic payment (e-payment) systems. The Klang Valley was selected as the geographical scope of this research due to its status as Malaysia's most urbanized, economically active, and digitally advanced region.

The Klang Valley encompasses major urban centers such as Kuala Lumpur, Petaling Jaya, Shah Alam, and Subang Jaya, which collectively record the highest levels of internet penetration, smartphone ownership, and fintech adoption in the country. According to the Malaysian Communications and Multimedia Commission (MCMC, 2022), urban regions within the Klang Valley consistently demonstrate higher levels of digital connectivity and online financial activity compared to other parts of Malaysia. This makes the region a highly relevant context for examining consumer behavior related to e-payment usage.

In addition, Bank Negara Malaysia (2023) reported that the Klang Valley accounts for a substantial proportion of digital payment transactions, supported by the widespread adoption of initiatives such as DuitNow QR, mobile wallets, and contactless payment systems. The concentration of financial institutions, merchants, and fintech service providers within the Klang Valley further accelerates the adoption and daily use of e-payment services.

Previous studies have also highlighted that consumers in highly urbanized regions are more likely to adopt digital payment technologies due to greater exposure to digital infrastructure, promotional campaigns, and peer usage (Tan et al., 2020; Lim & Ooi, 2020). The presence of diverse demographic groups, including working professionals, students, and digitally literate consumers, makes the Klang Valley an appropriate setting for investigating variations in e-payment usage behavior.

Therefore, limiting the scope of this study to the Klang Valley allows for a focused examination of e-payment adoption in a highly digitalized environment, where the use of electronic payment systems is both prevalent and evolving rapidly. While the findings may not be directly generalizable to rural areas, they provide valuable insights into urban consumer behavior, which can inform policymakers, financial institutions, and fintech providers in designing strategies to further promote e-payment adoption in Malaysia.

1.7 Significant of Research

Despite their increasing popularity, electronic wallets are not commonly used in Malaysia. As a result, this study is critical for Malaysian entrepreneurs interested in developing an e-payment service. This report provides them with thorough information regarding electronic wallets, which can assist them in analysing Malaysia's competitive position and future potential. This study also provides significant contributions at the theoretical, practical, and contextual levels by examining factors influencing customers' usage of e-payment systems in the Klang Valley, Malaysia.

1.7.1 Significant Contribution to the Entrepreneurs

This research can help entrepreneurs decide whether their companies should operate and offer e-payment services. Furthermore, the study's findings can help entrepreneurs think about offering e-payment services and understand the critical factors influencing the use of e-payment methods, such as convenience, security, speed, and social influence. As a result of these factors, entrepreneurs can use them to improve their e-payment systems and thus increase customer adoption.

1.7.2 Significant Contribution to the Financial Institution

This research will also help financial institutions and software development companies identify potential challenges that consumers may encounter while utilizing an e-payment. The findings of the study will help financial institutions and software development organizations discover and appreciate areas where they can improve in order to successfully launch electronic wallets in Malaysia in the near future.

1.7.3 Significant Contribution to the Future Researchers

Students and future scholars who want to undertake additional research on e-payment will find this study interesting. It will inform them about the use of electronic payments in Malaysia. Through this research, students will gain a grasp of what e-payment is and the factors that impact its acceptance in Malaysia. They will have a better understanding of the Malaysian e-payment sector as a result. As the public's interest in electronic wallets develops, so will the number of future scholars who are

interested in the topic and will do research on it. This study will assist them by providing them with baseline information on e-payment and the factors that influence its adoption.

1.7.4 Theoretical Contribution

From a theoretical perspective, this study contributes to the existing body of knowledge on technology acceptance and usage behavior by extending and contextualizing the Technology Acceptance Model (TAM) and the Unified Theory of Acceptance and Use of Technology (UTAUT) within the Malaysian e-payment environment. While TAM and UTAUT have been widely applied in prior studies, many existing works focus on direct relationships between technological factors and usage intention, with limited examination of mediating mechanisms that explain how these relationships operate.

This study advances theory by empirically validating social influence as a mediating variable between selected system-related factors (convenience and security) and e-payment usage. By doing so, the research demonstrates that technology adoption is not driven solely by functional or performance-related attributes but is also shaped by social and normative influences, particularly in digitally connected urban environments. This finding supports and extends UTAUT's emphasis on social influence by positioning it as an explanatory mechanism rather than merely a direct predictor.

Furthermore, the study contributes to TAM by reinforcing the importance of perceived ease-of-use-related constructs, operationalized through convenience and transaction speed, in explaining actual technology usage. The findings confirm that these constructs remain relevant in mature digital payment contexts, thereby strengthening the applicability of TAM beyond initial adoption stages. By integrating constructs from both TAM and UTAUT, this study offers a more comprehensive explanatory framework for understanding e-payment usage behavior.

In addition, this research contributes to the literature by providing context-specific empirical evidence from Malaysia, a developing digital economy where e-payment adoption is actively promoted by government initiatives. This contextual extension enhances the generalizability and robustness of TAM and UTAUT by demonstrating their relevance in a rapidly evolving Southeast Asian fintech landscape.

1.7.5 Practical Contribution

From a practical standpoint, the findings provide valuable insights for policymakers, financial institutions, and fintech service providers. The study highlights the importance of prioritizing convenience and transaction speed, while also leveraging social influence to encourage wider e-payment adoption. Understanding the mediating role of social influence enables service providers to design more effective marketing strategies, such as referral programs, influencer partnerships, and community-based campaigns. The findings also inform policymakers by identifying key behavioral drivers that can support Malaysia's transition toward a cashless society, particularly in urban regions such as the Klang Valley.

1.7.6 Contextual Contribution

By focusing on the Klang Valley, this study contributes context-specific insights into consumer e-payment behavior in Malaysia's most urbanized and digitally advanced region. The findings serve as a reference point for future studies examining digital payment adoption in similar urban settings, both within Malaysia and other developing economies.

1.8 Limitations of Research

The study's limitations are those characteristics of design or methodology that impacted or influenced the application or interpretation of the findings. The research has limitations. However, it is critical that you limit the discussion to constraints relevant to the study problem under consideration. This study's weaknesses should be noted.

1.8.1 Lack of Reliable Sources and Data

A lack of data or inaccurate data would most likely necessitate limiting the breadth of the study or the size of the survey, or it may be a serious impediment to identifying a pattern and substantive relationship. It is hard for us to find more resources and data during this pandemic, and the researchers are in an open distance learning session right now.

1.8.2 Limited Access

This research is dependent on getting access to individuals, institutions, records, or information, and if access is refused or restricted in any way, the reasons for this must be explained. Include a reason for how being refused access or having restricted access did not deter the researcher from carrying out the research.

1.8.3 Sample Size Limit

The number of units of analysis researchers use in the sample is determined by the type of research issue they are studying. It is important to note that if the sample size is too limited, finding meaningful associations in the data will be challenging. This research needs to involve more respondents from different age groups, but it is quite limited for us to get different levels of respondents since researchers have to focus more on Klang Valley.

1.9 Definition of Term

Operational definitions refer to clear and precise explanations of key terms and variables used in a study. These definitions specify how each concept is interpreted and measured within the context of the research, thereby enabling readers to understand the scope and application of the constructs being examined.

1.9.1 Convenience

Convenience refers to the extent to which consumers perceive that using e-payment systems requires minimal effort and provides ease of access when completing transactions. In this study, convenience reflects the ability of users to perform payments quickly and effortlessly using mobile devices or internet-based platforms without the need to carry physical cash or visit financial institutions (Chawla & Joshi, 2020).

1.9.2 Security

Security refers to the degree to which consumers believe that e-payment systems are safe and capable of protecting personal and financial information from unauthorized access, fraud, and data breaches. In this study, security encompasses users' perceptions of transaction safety, data confidentiality, and the reliability of protective mechanisms, such as authentication and encryption (Hassan et al., 2020; Nguyen et al., 2022).

1.9.3 Speed

Speed refers to the perceived efficiency and quickness of transaction processing when using e-payment systems. In this study, speed represents users' perceptions of how rapidly payments can be completed and funds transferred in comparison to traditional payment methods, thereby enhancing overall transaction efficiency (Madigan, 2022).

1.9.4 Social Influence

Social influence refers to the extent to which individuals perceive that important other, such as family members, friends, colleagues, or society—encourage or expect them to use e-payment systems. In this study, social influence reflects the perceived social pressure and normative beliefs that shape consumers' intentions and behaviors toward adopting and using e-payment services (Singh & Srivastava, 2020; Venkatesh et al., 2022).

1.9.5 E-payment

E-payment refers to any form of financial transaction that is initiated, processed, and completed electronically without the use of physical cash or paper-based instruments. In this study, e-payment includes digital payment methods such as mobile wallets, online banking transfers, and contactless payments conducted via electronic platforms (Kumar et al., 2021).

1.10 Organization of Chapter

This investigation is divided into five chapters. The first chapter includes an introduction, a research backdrop, a problem description, research objectives, research questions, the scope of the research, the significance of the research, and an organization breakdown. A survey of the literature will be included in Chapter 2. The literature review will include an introduction, a theoretical underpinning, empirical research, the proposed theoretical framework, hypothesis formulation, and a chapter summary. In Chapter 3, the researcher will discuss the research design, unit of analysis, population and sampling method, sample size, data collection methods, questionnaire design, and measurement, which will include the use of all types of variables, including independent variables, dependent variables, and descriptive data analysis techniques. In Chapter 4, the researcher discusses respondent characteristics, factor analysis, and instrument reliability testing. The researcher next tests the hypothesis and closes with a description of the findings. Chapter 5 highlights the significant conclusions or discoveries and explores the implications and limitations of the research. The researcher will then give recommendations for future research in this chapter.

CHAPTER 2
LITERATURE REVIEW

2.1 Introduction

A literature review is an evaluative report of material contained in the literature applicable to the chosen field of research. The analysis should explain, outline, analyze, and clarify the literature in depth. It should provide a theoretical foundation for the research and assist in determining the purpose of these studies. Insignificant works should be ignored, and those that are peripheral should be examined objectively.

2.2 Theoretical Foundation

This study is grounded in two well-established technology adoption theories: the Technology Acceptance Model (TAM) and the Unified Theory of Acceptance and Use of Technology (UTAUT). Both theories have been extensively applied to explain individuals' acceptance and usage of information systems and digital technologies, including electronic payment systems. These theories provide a robust theoretical basis for understanding how users form behavioral intentions and subsequently adopt new technologies.

2.2.1 Technology Acceptance Model (TAM)

The Technology Acceptance Model (TAM) was originally developed by Davis (1989) to explain users' acceptance of information systems. Rooted in the Theory of Reasoned Action (Ajzen & Fishbein, 1975), TAM posits that two core beliefs—perceived usefulness (PU) and perceived ease of use (PEOU)—significantly influence users' attitudes, behavioral intentions, and actual system usage. Perceived usefulness refers to the degree to which an individual believes that using a particular system will enhance performance, while perceived ease of use reflects the extent to which the system is perceived as effortless to use (Davis, 1989).

Over time, TAM has been extended and adapted by numerous researchers to better reflect evolving technological contexts. While the original model focuses on PU

and PEOU, subsequent studies have decomposed these constructs into more context-specific factors to improve explanatory power, particularly in digital payment and fintech research. Factors such as convenience, security, transaction speed, and social influence have been shown to function as antecedents to perceived usefulness and perceived ease of use, thereby indirectly shaping users' behavioral intentions (Amin et al., 2015; Chawla & Joshi, 2020).

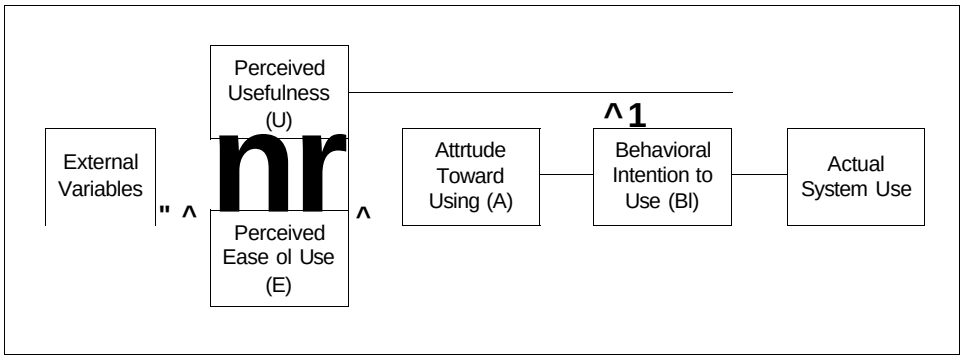

Figure 2.1: First Modified TAM
Source: (Davis, Bagozzi and Warshaw, 1989)

In the context of e-payment adoption, TAM provides a foundational framework for understanding how users evaluate the benefits and usability of digital payment systems. Although this study does not directly test PU and PEOU, the selected independent variables—convenience, security, and speed—represent functional and experiential attributes that align conceptually with TAM's core constructs. Therefore, TAM remains a relevant theoretical foundation for analyzing consumers' acceptance of e-payment systems.

2.2.2 Unified Theory of Acceptance and Use of Technology (UTAUT)

The Unified Theory of Acceptance and Use of Technology (UTAUT) was developed by Venkatesh et al. (2003) to integrate and extend prior technology adoption models, including the Technology Acceptance Model (TAM), the Theory of Reasoned Action (TRA), the Motivational Model, the Theory of Planned Behaviour (TPB), and Innovation Diffusion Theory (IDT). UTAUT proposes that performance expectancy, effort expectancy, social influence, and facilitating conditions are key determinants of behavioural intention and technology usage, with demographic variables such as age, gender, and experience acting as moderating factors.

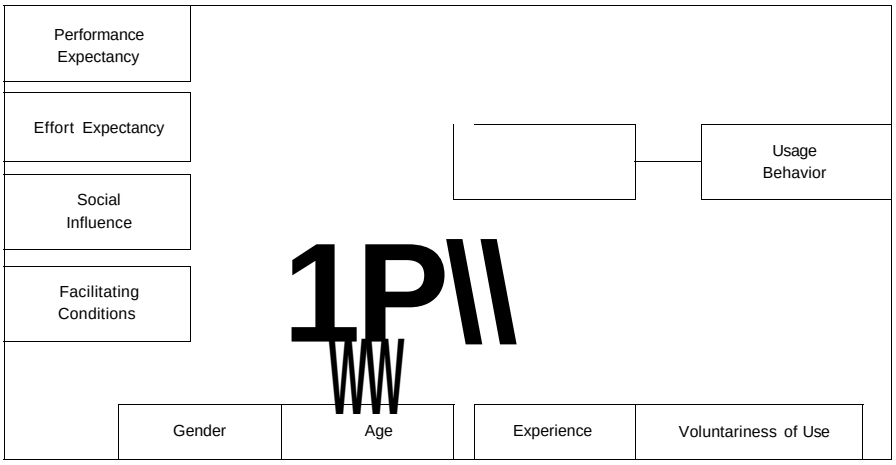

Figure 2.2: First Modified UTAUT
Source: Venkatesh et al., 2003

UTAUT has been widely applied and empirically validated in studies examining digital payment systems, mobile payments, and fintech adoption across various contexts. Recent studies demonstrate its suitability for explaining behavioral intention toward e-payment usage in both developed and developing economies (Ariffin et al., 2020; Phan et al., 2020; Yang et al., 2021; Abdullah et al., 2021). In Malaysia, UTAUT-based models have been used to explain consumers' acceptance of e-payment systems as the country transitions toward a cashless society (Abdullah et al., 2020).

In this study, UTAUT is particularly relevant due to its emphasis on social influence, which is explicitly examined as an independent variable. Additionally, constructs such as convenience, security, and speed can be conceptually mapped to performance expectancy and effort expectancy, supporting the model's applicability even when the original UTAUT variables are not directly measured. Prior research supports the practice of adapting UTAUT by decomposing its core constructs to better capture context-specific factors influencing digital payment adoption (Odoom & Kosiba, 2020; Venkatesh et al., 2022).

Despite its strengths, UTAUT has been criticized for its limited consideration of psychological and contextual variables that may influence users' adoption decisions (Williams et al., 2015). This limitation presents an opportunity for further refinement and contextualization. Accordingly, this study adopts TAM and UTAUT as guiding theoretical foundations while operationalizing context-relevant variables—convenience, security, speed, and social influence—to explain consumers' usage of e-payment systems.

2.3 Dependent Variable

In this study, the dependent variable represents the outcome of interest that is influenced by the independent variables examined. The dependent variable reflects consumers' behavioral response and is measured to determine the effect of factors such as convenience, security, transaction speed, and social influence on e-payment usage. Consistent with technology adoption research, the dependent variable in this study is e-payment usage, which captures consumers' acceptance and utilization of electronic payment systems.

2.3.1 E-Payment

E-payment refers to financial transactions that are initiated, processed, and completed electronically without the use of physical cash or paper-based instruments. E-payment systems enable users to transfer funds through digital platforms such as online banking, mobile payment applications, digital wallets, and contactless payment technologies, typically supported by banks, fintech companies, or telecommunication service providers (Kumar et al., 2021).

The rapid advancement of information and communication technologies, coupled with increased smartphone and internet penetration, has been a major driver of e-payment adoption globally. E-payment systems allow consumers to conduct transactions efficiently, securely, and conveniently without the need for face-to-face interaction, making them particularly valuable in sectors such as retail, transportation, and e-commerce (Bhatia, 2021). These systems enhance transaction efficiency by reducing processing time, minimizing operational costs, and improving the overall user experience.

In this study, e-payment usage is operationalized as consumers' frequency and willingness to use electronic payment methods for purchasing goods and services. Despite the advantages offered by e-payment systems, issues related to security, trust, and user confidence remain significant challenges that may influence adoption and continued usage (Nguyen et al., 2022). As such, understanding the determinants of e-payment usage is critical for promoting sustainable digital payment adoption.

2.3.2 E-Payment in Malaysia and Klang Valley

In Malaysia, e-payment adoption has grown steadily, supported by government initiatives, financial technology (fintech) innovation, and changes in consumer behaviour. According to Bank Negara Malaysia (2023), digital payment transactions reached approximately 9.2 billion in 2022, representing a substantial increase compared to previous years. National initiatives such as DuitNow QR interoperability, along with widespread smartphone adoption, have accelerated the country's transition toward a cashless society.

Klang Valley, as Malaysia's most urbanised and economically active region, records the highest level of e-payment usage. The region hosts a dense concentration of merchants and consumers who actively utilize mobile wallets, online banking services, and contactless payment methods. Empirical studies indicate that consumers in urban areas such as Kuala Lumpur and Petaling Jaya are more likely to adopt e-payment technologies due to better digital infrastructure, higher income levels, and greater exposure to fintech services (Tan et al., 2022).

Furthermore, the COVID-19 pandemic significantly accelerated digital payment adoption in Klang Valley, as consumers and retailers increasingly relied on contactless payment methods to reduce physical interaction. This rapid shift further reinforces Klang Valley as a suitable and relevant context for examining factors influencing e-payment usage (MDEC, 2021). Consequently, this study focuses on Klang Valley to provide meaningful insights into consumer e-payment behavior in Malaysia's most digitally mature region.

2.4 Independent Variable

Independent variables represent the key factors expected to influence consumers' usage of e-payment systems. In the context of digital payment adoption, these variables reflect users' perceptions, experiences, and evaluations of the technology. Guided by prior technology adoption literature, this study examines convenience, security, and transaction speed as independent variables that directly influence e-payment usage. In addition, social influence is examined as a mediating variable to explain how social factors shape users' behavioral responses toward e-payment systems.

2.4.1 Convenience

Convenience is widely recognized as one of the most influential factors in consumers' adoption of digital technologies, particularly in the context of e-payment systems. In general, convenience refers to the degree to which a payment method is perceived as easy to use, readily accessible, and compatible with users' daily activities. For e-payment users, convenience is reflected in the ability to complete transactions anytime and anywhere without the need to carry physical cash, queue at payment counters, or visit banking institutions (Chawla & Joshi, 2020).

From a consumer perspective, convenience reduces both physical and cognitive effort. User-friendly interfaces, simple registration processes, and seamless transaction flows allow consumers to integrate e-payment systems into their routines with minimal disruption. As a result, payment methods that offer greater convenience are more likely to be perceived as practical and beneficial, thereby increasing users' willingness to adopt and continue using them (Hariguna et al., 2020; Jones & Walker, 2021).

However, prior studies suggest that the role of convenience may vary depending on users' experience level. While convenience strongly influences initial adoption, its impact may weaken over time as users become familiar with the technology and begin to prioritize other factors such as security and trust (Tran Le Na & Hien, 2021). Some studies also indicate that convenience alone is insufficient to sustain long-term usage, particularly among experienced users who view convenience as a basic expectation rather than a differentiating factor (Garrouch, 2021).

In this study, convenience is conceptualized as consumers' perceptions of ease of use, accessibility, flexibility, and effort reduction when using e-payment systems. Understanding the role of convenience is essential, as it reflects how well digital payment technologies align with users' lifestyle needs and expectations.

2.4.2 Security

Security is a fundamental concern in the adoption of e-payment systems, as digital transactions involve the exchange of sensitive personal and financial information. Security refers to the extent to which users believe that an e-payment system can protect their data from unauthorized access, fraud, and misuse. In the context of e-payments, security encompasses transaction safety, data confidentiality,

authentication procedures, and system reliability (Hassan et al., 2020; Nguyen et al., 2022).

Despite the convenience offered by e-payment systems, many consumers remain cautious due to perceived security risks. Fear of data breaches, identity theft, and financial loss can discourage users from fully embracing digital payment technologies. Consequently, perceived security plays a critical role in shaping users' trust and confidence in e-payment platforms (Al-Ajam & Nor, 2021). When users perceive a system as secure, they are more likely to engage in transactions without anxiety, which enhances both adoption and continued use.

To address these concerns, e-payment providers have introduced advanced security measures such as encryption, two-factor authentication, biometric verification, and real-time fraud detection systems. These safeguards not only protect users but also signal reliability and professionalism, thereby strengthening consumers' trust in the platform (Bhatia, 2021; Chellapalli & Srinivas Kumar, 2020). However, empirical findings regarding the impact of security on adoption are mixed. Some studies suggest that security has a weaker influence among younger users, who tend to be more technologically savvy and less risk-averse (Phan et al., 2020).

In this study, security is operationalized as consumers' perceptions of transaction safety, protection of personal data, and overall trustworthiness of e-payment systems. Examining security perceptions is crucial for understanding the barriers and enablers of e-payment usage, particularly in emerging digital economies.

2.4.3 Speed

Speed refers to the perceived quickness with which payments are processed and confirmed using e-payment systems. Compared to traditional payment methods such as cash or checks, e-payments enable near-instantaneous transactions, reducing waiting time and improving efficiency for both consumers and merchants (Madigan, 2022).

In modern digital lifestyles, consumers increasingly value speed and efficiency, especially in fast-paced urban environments. Faster transaction processing enhances user satisfaction by eliminating delays associated with manual payment procedures, queuing, or bank processing times. As a result, transaction speed has emerged as a significant determinant of consumers' preference for digital payment systems (Khan et al., 2020).

Technological advancements such as Near-Field Communication (NFC), QR code payments, and real-time payment infrastructure have further improved transaction speed, allowing users to complete payments within seconds. These features are particularly attractive in settings such as retail outlets, public transportation, and food services, where efficiency is critical (Jones & Walker, 2021). Empirical evidence suggests that consumers are more likely to adopt e-payment platforms that offer fast and seamless transaction experiences.

In Malaysia, recent studies indicate that younger consumers, especially university students and urban residents, place a strong emphasis on speed when choosing mobile payment platforms (Abdul Rashid et al., 2023). In this study, transaction speed is conceptualized as users' perceptions of payment processing efficiency and time savings when using e-payment systems.

2.4.4 Social Influence as a Mediator

Social influence refers to the extent to which an individual perceives those important others, such as family members, peers, or colleagues, believe he or she should use a particular technology. In the context of e-payment adoption, social influence has been recognized as an important behavioral mechanism that shapes users' perceptions, attitudes, and usage decisions, particularly in socially connected and urban environments.

- Social Influence as a Mediator between Convenience and E-Payment Usage

Convenience reflects the degree to which e-payment systems are perceived as easy to use, accessible, and compatible with users' daily activities. While convenience has been shown to directly influence e-payment usage, its effect may also be strengthened through social influence. When individuals observe peers frequently using convenient e-payment systems, such behavior reinforces positive perceptions and normalizes usage within social groups.

Previous studies have demonstrated that consumers are more likely to adopt digital payment systems when convenience is reinforced by peer endorsement and social acceptance (Tan et al., 2022; Koo et al., 2020). In highly urbanized regions such as the Klang Valley, where digital interactions and peer networks are prominent, social influence may amplify the effect of convenience on actual usage behavior. Therefore,

social influence is conceptually positioned as a mediating variable that explains how perceived convenience translates into e-payment usage.

- Social Influence as a Mediator between Security and E-Payment Usage

Security concerns, including fears related to fraud, data privacy, and unauthorized access, remain important considerations in e-payment adoption. However, perceptions of security are often shaped not only by system features but also by social cues and shared experiences. When individuals observe others using e-payment systems without experiencing security issues, their confidence in the system increases.

Empirical evidence suggests that social influence can reduce perceived risk and uncertainty by providing reassurance through peer behavior and social validation (Lim & Ooi, 2020; Rahman et al., 2021). As a result, social influence may mediate the relationship between perceived security and e-payment usage by alleviating concerns and reinforcing trust. This mediating role is particularly relevant in digital payment environments where trust is socially constructed rather than solely based on technical knowledge.

2.5 Theoretical Framework

The theoretical framework of this study is developed based on established technology acceptance theories, namely the Technology Acceptance Model (TAM) and the Unified Theory of Acceptance and Use of Technology (UTAUT), together with insights from prior empirical studies discussed in Chapter 2. These theories provide a robust foundation for explaining consumers' acceptance and usage of electronic payment (e-payment) systems.

The Technology Acceptance Model (TAM), originally proposed by Davis (1989), posits that individuals' acceptance of a technology is primarily determined by perceived usefulness and perceived ease of use, which influence attitudes and behavioral intention toward usage. TAM has been widely applied in studies related to information systems and digital technologies due to its simplicity and strong explanatory power. Importantly, TAM also allows for the inclusion of external variables that indirectly influence technology adoption through users' perceptions and beliefs. This flexibility makes TAM particularly suitable for examining context-specific factors relevant to e-payment usage.

Despite its widespread application, TAM has been criticized for its limited ability to fully capture the complexity of technology adoption behavior. Previous studies have highlighted that the original TAM constructs alone may be insufficient to explain users' attitudes and behavioral intentions in rapidly evolving digital environments (Straub, 2009; Bagozzi, 2007). Consequently, researchers have extended TAM by incorporating additional variables such as convenience, security, and transaction speed to enhance its explanatory capability, particularly in fintech and e-payment contexts.

To address these limitations, this study also draws upon the Unified Theory of Acceptance and Use of Technology (UTAUT), developed by Venkatesh et al. (2003). UTAUT integrates multiple technology adoption theories and emphasizes the role of performance expectancy, effort expectancy, social influence, and facilitating conditions in shaping behavioral intention and technology usage. Unlike TAM, UTAUT explicitly recognizes the role of social influence in technology adoption, making it highly relevant for understanding consumer behavior in socially connected and digitally driven environments.

In line with prior research, this study adopts TAM and UTAUT as guiding theoretical foundations rather than testing their original constructs directly. Instead, selected variables are adapted and operationalized to reflect the specific context of e-payment usage in Klang Valley. Drawing on empirical evidence, convenience, security, and transaction speed are conceptualized as independent variables representing functional and experiential attributes of e-payment systems that influence users' adoption and usage behavior (Chawla & Joshi, 2020; Madigan, 2022; Bhatia, 2021). These variables are conceptually aligned with perceived usefulness and perceived ease of use in TAM, as well as performance expectancy and effort expectancy in UTAUT.

In addition, social influence is incorporated into the framework as a mediating variable. Prior studies report mixed findings regarding the direct effect of social influence on e-payment adoption. While some research demonstrates a significant direct relationship, others suggest that social influence operates indirectly by shaping users' perceptions, confidence, and willingness to adopt new technologies (Yang et al., 2012; Lu, 2014). Given these inconsistencies, this study positions social influence as a mediator that explains how convenience, security, and transaction speed affect consumers' e-payment usage.

The theoretical framework proposes that when e-payment systems are perceived as convenient, secure, and fast, positive social influence from peers, family members, and society can strengthen consumers' acceptance and continued usage of these systems. Conversely, weak or negative social influence may reduce the impact of these functional attributes on adoption behavior. This mediating perspective enables a deeper understanding of the mechanisms through which individual perceptions and social dynamics interact to shape e-payment usage.

Overall, the proposed theoretical framework integrates key elements of TAM and UTAUT while tailoring them to the context of e-payment adoption in Klang Valley. By focusing on convenience, security, transaction speed, and social influence, the framework provides a focused, yet comprehensive, explanation of the factors influencing consumers' usage of e-payment systems. The framework also supports the empirical testing of direct and mediating relationships, thereby strengthening the study's theoretical contribution and practical relevance.

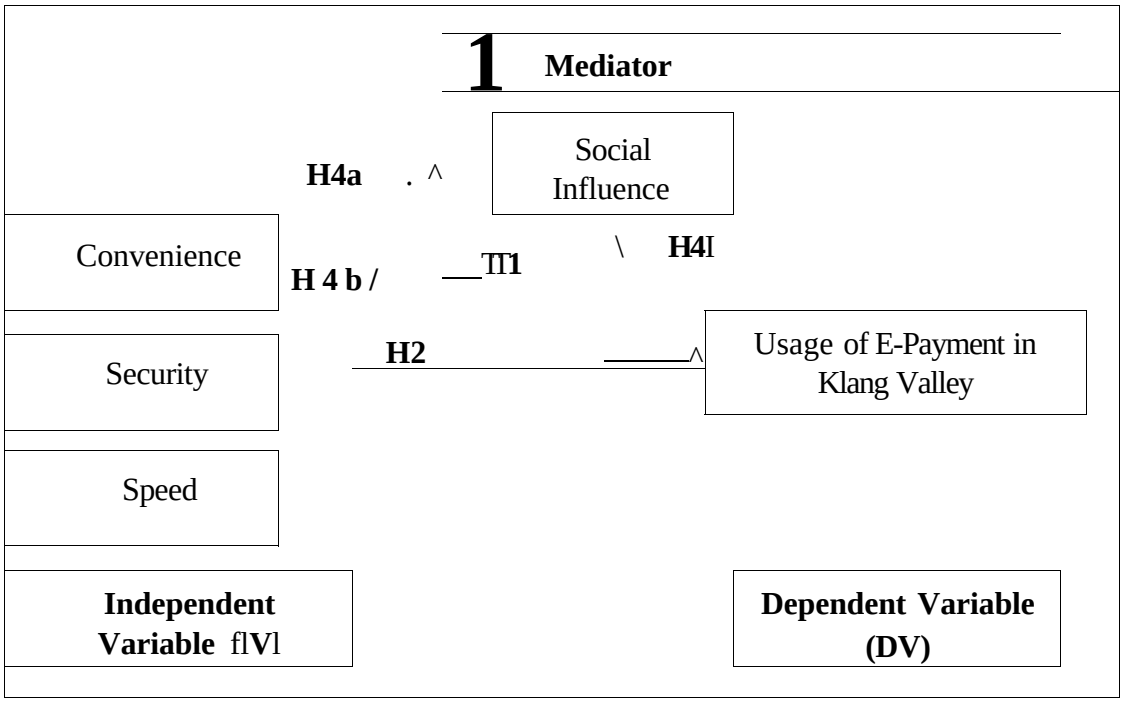

Figure 2.3: Theoretical Framework

The framework aims to explain the factors influencing customers' usage of e-payment systems in the Klang Valley by integrating technological attributes and social mechanisms that shape adoption behavior. In this framework, convenience, security, and transaction speed are positioned as independent variables. These constructs

represent key system-related attributes that influence users' perceptions of usability, efficiency, and trust in e-payment systems. Consistent with TAM, convenience and speed reflect perceived ease of use and perceived usefulness, which have been shown to directly influence technology usage. Security is included as an essential factor in digital payment contexts, where concerns about fraud and data privacy can affect users' willingness to adopt electronic payment systems.

Social influence is positioned as a mediating variable in the framework. Drawing from UTAUT, social influence captures the extent to which individuals' usage decisions are shaped by peer behavior, social norms, and external endorsement. Rather than functioning solely as a direct predictor, social influence is conceptualized as a mechanism that explains how system-related attributes translate into actual usage behavior. This mediating role reflects the reality of e-payment adoption in socially connected urban environments, where individuals often rely on social cues to validate their technology-related decisions.

The usage of e-payment is positioned as the dependent variable, representing actual consumer behavior rather than intention. This approach aligns with recent technology adoption studies that emphasize actual usage as a more accurate indicator of technology acceptance in mature digital environments.

The relationships specified in the framework are directly derived from prior empirical findings and theoretical assumptions discussed in Chapter 2. Each hypothesized path reflects a logical extension of TAM and UTAUT, ensuring conceptual consistency between the literature review, hypothesis development, and empirical analysis. By integrating system attributes with social influence mechanisms, the proposed framework provides a comprehensive and context-specific explanation of e-payment usage behavior in the Klang Valley.

2.6 Justification for the Use and Adaptation of TAM and UTAUT

The theoretical foundation of this study is grounded in the Technology Acceptance Model (TAM) and the Unified Theory of Acceptance and Use of Technology (UTAUT), both of which have been widely applied to explain user acceptance and usage of information systems and digital technologies. These models were selected for their strong explanatory power and relevance to technology adoption behavior in financial and payment systems.

TAM focuses primarily on users' perceptions of perceived usefulness and perceived ease of use as key determinants of technology acceptance. In the context of e-payment systems, these perceptions are closely reflected through convenience and transaction speed, which capture how efficiently and effortlessly users can complete payment transactions. Prior studies have demonstrated that convenience and speed serve as operational extensions of TAM's perceived ease of use and usefulness constructs, particularly in digital payment environments (Tan et al., 2020; Suki et al., 2020). Therefore, this study adapts TAM by operationalizing these core perceptions through context-specific constructs that better represent modern e-payment usage.

UTAUT was incorporated to complement TAM by accounting for social and contextual influences on technology usage. UTAUT explicitly recognizes social influence as a key determinant of behavioral intention, particularly in environments where technology adoption is shaped by peer usage, social norms, and external endorsement. Given the highly connected and urbanized nature of the Klang Valley, social influence was considered particularly relevant in explaining e-payment usage behavior. However, rather than positioning social influence solely as a direct predictor, this study extends UTAUT by conceptualizing social influence as a mediating variable, explaining how system-related factors translate into actual usage behavior.

The decision to adapt and integrate selected constructs from TAM and UTAUT was made to achieve theoretical clarity and model parsimony. Not all original constructs from both models were included, as the study focuses specifically on factors most relevant to actual e-payment usage, rather than behavioral intention alone. Constructs such as facilitating conditions and effort expectancy were excluded to avoid redundancy and conceptual overlap, as their effects are partially captured through convenience and transaction speed in the context of e-payment systems.

Furthermore, security was included as a system-related construct due to its established relevance in digital financial transactions. Although security is not explicitly positioned as a core construct in TAM or UTAUT, extensive empirical research has shown that perceived security plays an important role in shaping user trust and adoption behavior in e-payment contexts (Lim & Ooi, 2020; Rahman et al., 2021). Including security allows the framework to better reflect the realities of digital payment adoption, particularly in developing fintech ecosystems.

Overall, by integrating and adapting constructs from TAM and UTAUT, this study proposes a contextualized theoretical framework that captures both technological

attributes and social mechanisms influencing e-payment usage. This approach extends existing theory by demonstrating how classical technology acceptance models remain relevant when tailored to contemporary digital payment environments, thereby strengthening their explanatory value in emerging economies such as Malaysia.

2.7 Justification of Research Study

This study focuses on examining the factors influencing customers' usage of e-payment systems in the Klang Valley, Malaysia. While previous studies have largely concentrated on e-wallet adoption or general cashless payment acceptance, this research extends beyond a single payment instrument by examining e-payment usage as a broader behavioral outcome. Cashless payments do not fully replace physical money; rather, they coexist with and complement traditional payment methods. Different e-payment tools vary in terms of functionality, perceived benefits, and usage contexts, which may influence consumer behavior in distinct ways. Therefore, a focused investigation into e-payment usage, rather than adoption of a specific platform, is both timely and necessary.

The primary objective of this study is to examine the relationships between convenience, security, and transaction speed and customers' usage of e-payment systems in the Klang Valley. In addition, this study seeks to examine the mediating role of social influence in these relationships. Specifically, it investigates whether social influence mediates the relationships between convenience, security, transaction speed, and e-payment usage. By incorporating mediation analysis, this study moves beyond direct-effect models and provides a more nuanced understanding of how functional attributes and social dynamics interact to shape consumer behavior.

The justification for this research is further strengthened by the complexity of cashless transaction ecosystems. Prior literature highlights that the transition toward cashless payments is shaped by multiple interrelated factors, including technological advancement, social transformation, regulatory frameworks, and the involvement of key stakeholders such as banks, governments, merchants, fintech firms, and consumers (Arvidsson, 2019; Batiz-Lazo et al., 2016). These interacting forces create a dynamic environment in which consumer preferences and usage patterns continue to evolve. However, many prior studies have examined these factors in isolation, without adequately exploring their combined or interactive effects.

Furthermore, existing literature reveals a gap in understanding the relative influence of specific factors such as convenience, security, and speed on e-payment usage, particularly within urban and digitally mature regions. While studies acknowledge these factors as important, limited attention has been given to how social influence may strengthen or weaken their impact on actual usage behavior (Arvidsson, 2019). This gap is particularly evident in the Malaysian context, where rapid digitalization and strong government support for cashless initiatives coexist with persistent consumer concerns regarding security and trust.

The inclusion of security and consumer trust as key considerations further justifies the present study. Prior research consistently identifies security perceptions as a critical determinant of e-payment acceptance and usage, particularly in environments where concerns about data breaches and cybercrime are salient (Ariffin et al., 2020; Phan et al., 2020; Abdullah et al., 2020; Al-Saedi et al., 2020). Understanding how security perceptions influence usage behavior is essential for designing effective strategies to promote sustained e-payment adoption. Moreover, transaction speed has emerged as an increasingly important factor in fast-paced urban settings, where consumers value efficiency and time savings in daily transactions.

Additionally, earlier studies emphasize that successful digital payment adoption depends not only on individual perceptions but also on broader environmental conditions, including legal frameworks, institutional support, and infrastructure readiness (Guru et al., 2001). These contextual factors are particularly relevant in Klang Valley, which serves as Malaysia's most urbanized and digitally advanced region. As such, Klang Valley provides an appropriate and meaningful setting for examining e-payment usage behavior.

Overall, this study is justified by its theoretical contribution, contextual relevance, and methodological advancement. By integrating functional factors (convenience, security, and speed) with social influence as a mediating mechanism, this research contributes to a deeper understanding of e-payment usage behavior. The findings are expected to offer valuable insights for policymakers, financial institutions, and fintech service providers seeking to enhance e-payment adoption and usage in Malaysia and similar emerging digital economies.

2.8 Hypothesis Development

Based on the theoretical framework and literature reviewed in the previous sections, this study proposes a set of hypotheses to examine the relationships between convenience, security, transaction speed, social influence, and customers' usage of e-payment systems in the Klang Valley. The hypotheses are developed to test both direct effects and the mediating effect of social influence, consistent with the adapted TAM-UTAUT framework.

2.8.1 Convenience

Convenience has long been recognized as a key determinant of technology adoption, particularly in digital payment systems. In the context of e-payments, convenience refers to the extent to which a payment system is perceived as easy to use, accessible, and compatible with users' daily activities. E-payment systems that minimize transaction effort and reduce the need for physical cash are more likely to be adopted and used consistently.

Prior studies demonstrate that convenience significantly influences consumers' adoption and usage of digital payment platforms. Empirical evidence from Malaysia shows that users prefer payment applications that offer intuitive interfaces, seamless integration with other services, and simplified transaction procedures (Tan et al., 2020; Norazah & Sulaiman, 2021). More recent findings further confirm that convenience remains a critical driver of e-payment usage in urban environments, where users expect fast, flexible, and user-friendly payment solutions (Tan & Ooi, 2022). Accordingly, the following hypotheses are proposed:

HO: There is no significant relationship between convenience and customers' usage of e-payment in Klang Valley.

HI: There is a significant positive relationship between convenience and customers' usage of e-payment in Klang Valley.

2.8.2 Security

Security is a fundamental concern in digital financial transactions, as e-payment systems involve the exchange of sensitive personal and financial information. Security

perceptions influence users' trust and confidence in a payment system, which in turn affects their willingness to use it. Consumers are more likely to adopt and continue using e-payment systems when they believe that their transactions are protected against fraud, data breaches, and unauthorized access.

Previous studies consistently report a positive relationship between perceived security and e-payment usage. Research indicates that improved security features enhance users' trust and reduce perceived risk, thereby encouraging adoption (Al-Ajam & Nor, 2021; Bhatia, 2021). In the Malaysian context, security concerns remain a significant barrier to wider e-payment usage, particularly among users who are cautious about online financial transactions (Abdullah et al., 2020). Thus, the following hypotheses are proposed:

HO: There is no significant relationship between security and customers' usage of e-payment in Klang Valley.

H2: There is a significant positive relationship between security and customers' usage of e-payment in Klang Valley.

2.8.3 Speed

Speed refers to the perceived efficiency and quickness with which payments are processed using e-payment systems. Faster transaction processing reduces waiting time and enhances user satisfaction, making e-payments more attractive than traditional payment methods, such as cash or checks.

Empirical studies indicate that transaction speed significantly influences consumers' preference for digital payment systems, particularly in urban and high-volume transaction environments. Research conducted in Malaysia shows that users associate fast transaction processing with system reliability, satisfaction, and continued usage (Loo & Wong, 2021). Abdul Rashid et al. (2023) further found that younger consumers strongly prioritize transaction speed when selecting mobile payment platforms. Based on these findings, the following hypotheses are proposed:

HO: There is no significant relationship between speed and customers' usage of e-payment in Klang Valley.

H3: There is a significant positive relationship between speed and customers' usage of e-payment in Klang Valley.

2.8.4 Social Influence

Social influence refers to the extent to which individuals perceive that important others, such as family members, friends, or peers, believe they should use a particular technology. Rooted in the concept of subjective norms, social influence reflects how social pressure and peer behavior shape individual adoption decisions.

Prior research suggests that social influence plays a significant role during the early stages of technology adoption, particularly when users are uncertain about a new system. Studies have found that individuals are more likely to use e-payment systems when they observe widespread usage and positive endorsement within their social networks (Venkatesh et al., 2003; Singh & Srivastava, 2020). Accordingly, the following hypotheses are proposed:

HO: There is no significant relationship between social influence and customers' usage of e-payment in Klang Valley.

H4: There is a significant relationship between social influence and customers' usage of e-payment in Klang Valley.

2.8.5 Social Influence as mediator

Beyond its direct effect, social influence may also function as a mediating mechanism through which other factors affect e-payment usage. Prior studies suggest that social influence can amplify or weaken the impact of functional attributes such as convenience and security on adoption behavior. For example, when users observe their peers using e-payment systems confidently, their concerns regarding complexity or security may be reduced, increasing their likelihood of usage (Yang et al., 2012; Oliveira et al., 2016).

Empirical evidence from Malaysia supports this mediating role. Koo et al. (2020) found that social influence significantly shapes mobile payment usage among young consumers, particularly by reinforcing perceptions of ease and safety. Similarly, Tan et al. (2018) reported that strong social endorsement enhances users' acceptance of digital payment technologies. Based on this reasoning, the following mediation hypotheses are proposed:

H4a: Social influence mediates the relationship between convenience and customers' usage of e-payment in Klang Valley.

H4b: Social influence mediates the relationship between security and customers' usage of e-payment in Klang Valley.

2.9 Summary

To provide direction for this research topic, this chapter reviewed journals and articles from previous empirical studies. Furthermore, the relevant theoretical framework was thoroughly addressed in order to build a new conceptual framework and hypotheses for examining the link between the important determinants. In Chapter 3, the researcher will go over the research methods used in this study in further detail.

CHAPTER 3
RESEARCH METHODOLOGY

3.1 Introduction

This chapter begins with a discussion of the research methodology and then moves on to the study's approach. To provide a guideline for methodological choice, it is primarily dependent on an understanding of the research problem. Furthermore, this chapter discusses data collection, analysis, and reporting procedures. It describes research methods, dependent and independent variables, sampling design, data collection, analysis, and presentation planning formats.

3.2 Research Design

Research design refers to the overall strategy that outlines the procedures for collecting, analyzing, interpreting, and reporting data in a research study (Creswell & Plano Clark, 2007). It serves as a blueprint that links the research objectives and hypotheses with appropriate empirical methods. In line with the objectives of this study, a quantitative research design was adopted to examine the factors influencing customers' usage of e-payment systems in the Klang Valley.

A quantitative approach is appropriate for this study as it enables the collection of numerical data that can be statistically analyzed to identify relationships between variables. This approach allows for the examination of patterns, trends, and associations across a relatively large number of respondents, thereby enhancing the generalizability of the findings. The study focuses on measuring respondents' perceptions of convenience, security, transaction speed, social influence, and their usage of e-payment systems using structured survey instruments.

This study employs a cross-sectional survey design, whereby data are collected from respondents at a single point in time. Cross-sectional designs are commonly used in behavioral and technology adoption research to assess current attitudes, beliefs, and practices across different individuals (Saunders et al., 2019). The design is particularly suitable for this study as it allows for efficient data collection within a limited time

frame and enables the analysis of existing e-payment usage behavior among consumers in the Klang Valley.

Overall, the selected research design supports the study's objectives of identifying key determinants of e-payment usage and testing both the direct and mediating relationships proposed in the theoretical framework.

3.3 Unit of Analysis

The unit of analysis refers to the primary entity being examined in a study and is directly aligned with the research objectives and questions (Bailey & Pearson, 1983). In this study, the research focuses on understanding individual-level perceptions and behaviors related to e-payment usage.

Accordingly, the unit of analysis is individual consumers residing in the Klang Valley who use e-payment systems. The study examines how individual perceptions of convenience, security, transaction speed, and social influence affect their usage of e-payment methods. Selecting individuals as the unit of analysis is appropriate because decisions related to e-payment usage are made at the individual level rather than at organizational or institutional levels.

3.4 Sampling Method

This study employed a non-probability convenience sampling method to select respondents who actively use e-payment systems in the Klang Valley. The choice of convenience sampling was guided by the nature of the research objectives, the characteristics of the target population, and practical considerations related to access and feasibility.

Convenience sampling is widely used in technology adoption and consumer behaviour research, particularly when the study focuses on specific user groups with relevant experience, such as active users of digital payment systems. In the context of this study, the research aimed to examine behavioural factors influencing actual usage of e-payment systems, which necessitated recruiting respondents who were already familiar with and regularly engaged in e-payment transactions. Convenience sampling enabled the researcher to efficiently reach such respondents within the Klang Valley, where e-payment usage is highly prevalent.

Furthermore, obtaining a complete sampling frame of all e-payment users in the Klang Valley is not feasible because such data is not publicly accessible and is typically controlled by financial institutions and fintech providers. Under these circumstances, convenience sampling is considered an appropriate and practical approach for exploratory and explanatory studies involving digital technology usage (Etikan et al., 2016).

While convenience sampling may limit the generalizability of findings to the broader population, this study mitigated potential bias by including respondents from diverse demographic backgrounds, such as varying age groups, occupations, and income levels. Additionally, the sample size exceeded the minimum requirement determined through statistical power analysis, enhancing the robustness and reliability of the findings.

Therefore, the use of convenience sampling in this study is methodologically justified, as it aligns with the research objectives, ensures access to relevant respondents, and is consistent with prior empirical studies on e-payment adoption in urban contexts.

3.5 Population

The population for this study comprises Malaysian citizens aged 18 years and above residing in the Klang Valley who use e-payment systems. The Klang Valley was selected as the study population due to its position as Malaysia's most urbanised, economically developed, and digitally connected region.

Klang Valley encompasses major urban centers such as Kuala Lumpur, Petaling Jaya, Shah Alam, Subang Jaya, and surrounding areas. The region records the highest concentration of businesses, financial institutions, and digital infrastructure in Malaysia, making it the country's primary hub for financial technology and e-payment adoption. According to Bank Negara Malaysia (2023), Klang Valley leads the nation in digital payment transactions, supported by widespread smartphone ownership, internet penetration, and the availability of interoperable payment systems such as DuitNow QR.

Recent demographic estimates indicate that Greater Kuala Lumpur (Klang Valley) has a population exceeding 8 million residents, representing a significant proportion of Malaysia's urban population (United Nations, 2023). The region is

characterized by a diverse demographic composition and a large working-age population, which is particularly relevant for studies examining technology usage and consumer payment behavior. Urban residents in Klang Valley are more likely to engage in e-commerce, mobile banking, and digital wallet usage compared to those in less urbanized regions.

Furthermore, this study focuses on individuals aged 18 years and above, as this group represents legally independent adults who are eligible to open bank accounts, register for e-wallets, and conduct financial transactions autonomously. Individuals within this age group typically possess smartphones and have regular exposure to digital platforms, making them appropriate respondents for examining perceptions of convenience, security, transaction speed, and social influence in relation to e-payment usage.

Overall, selecting the Klang Valley adult population ensures that the study captures relevant and meaningful insights into e-payment usage behavior within Malaysia's most digitally mature and economically active region. This population is therefore appropriate for achieving the objectives of the study and testing the proposed hypotheses.

3.6 Sample Size

Sample size refers to the number of respondents selected from a population to represent the characteristics of that population in a study. An appropriate sample size is essential to ensure sufficient statistical power, reliability of results, and meaningful hypothesis testing.

This study targets adult Malaysian consumers (aged 18 and above) residing in the Klang Valley who use e-payment systems. Given the large and geographically dispersed population of e-payment users in the Klang Valley, a precise sampling frame was not available. As such, the determination of the sample size was guided by both statistical estimation methods and recommended thresholds for multivariate analysis.

Sample size refers to the number of respondents selected to represent the population and is important to ensure statistical accuracy and sufficient power for hypothesis testing. In this study, the sample size was determined using G*Power analysis, which is widely recommended for studies involving multiple regression and hypothesis testing (Hair et al., 2017; Faul et al., 2009).

The number of predictors used in the G*Power analysis was determined based on the number of independent variables entered into the multiple regression model predicting e-payment usage. In this study, four predictors were included in the regression model, namely convenience, security, transaction speed, and social influence. Therefore, the "number of predictors" parameter in G*Power was set to four, consistent with the study's analytical model (Faul et al., 2009; Hair et al., 2017)

The minimum sample size was calculated using G*Power 3.1 based on the requirements for multiple regression analysis. The analysis was conducted using the following parameters: six predictors, a medium effect size ($f^2 = 0.15$), a significance level (a) of 0.05, and a statistical power level of 0.80, which is the commonly accepted threshold in social science research (Gefen et al., 2011). The G*Power output indicated that a minimum of 85 respondents were required to achieve adequate statistical power for this study.

For the actual data collection, the study obtained 228 valid responses, which were used for the final analysis. Respondents who did not meet the screening requirements (e.g., non-e-payment users, non-smartphone users, or non-Klang Valley residents) were excluded during the screening stage and were not included in the final dataset. Since the final sample of 228 respondents exceeds the minimum requirement suggested by G*Power, the sample size was considered sufficient to support reliable statistical analysis and meaningful interpretation of the study findings.

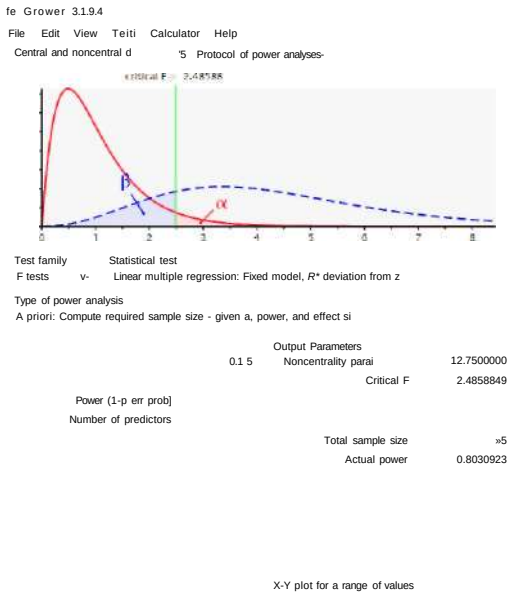

Figure 3.1: G-Power Analysis

3.7 Data Collection Method

Data for this study were collected using both primary and secondary sources. Primary data was obtained through a structured questionnaire administered to respondents residing in the Klang Valley who use e-payment systems. The use of primary data allows the researcher to gather first-hand information directly related to the study's objectives and hypotheses.

The questionnaire was distributed electronically to potential respondents to facilitate wider reach and efficient data collection. Online distribution is particularly suitable for this study, as the target respondents are users of digital payment systems and are therefore likely to be familiar with online platforms. Respondents were informed of the purpose of the study and assured of confidentiality, and their participation was voluntary.

Secondary data was used to support the development of the research framework and questionnaire items. This data was obtained from academic journals, books, industry reports, and reputable online sources related to e-payment systems, technology adoption, and consumer behavior. Secondary data provided theoretical grounding and empirical support for the study variables, ensuring that the questionnaire items were aligned with established literature.

3.8 Questionnaire Design

Questionnaire design is a critical step in ensuring that accurate and reliable data was collected to address the research objectives. In this study, a structured questionnaire consisting of closed-ended questions was used. Closed-ended questions were selected as they allow respondents to provide clear and consistent answers, facilitate quantitative analysis, and reduce ambiguity in responses.

The questionnaire was designed to be concise and easy to understand, enabling respondents to complete it efficiently while providing meaningful information. All measurement items were adapted from validated instruments used in previous studies, with minor modifications to suit the context of e-payment usage in the Klang Valley. The questionnaire was divided into six sections, outlined below:

- Section A: Demographic information of respondents (e.g., age, gender, education level, occupation, and income).
- Section B: Convenience (CV)
- Section C: Security (SC)
- Section D: Transaction Speed (SP)
- Section E: Social Influence (SI)
- Section F: Usage of E-Payment (ePM)

Each independent variable—convenience, security, and transaction speed—was measured using five items. The mediating variable, social influence, was measured using four items, while the dependent variable, usage of e-payment, was measured using five items. These items were designed to capture respondents' perceptions and experiences related to e-payment systems.

All items in Sections B to F were measured using a five-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree). The Likert scale was chosen for its widespread use in behavioral and technology adoption research and its suitability for measuring attitudes and perceptions.

The questionnaire was initially developed in English and subsequently translated into Bahasa Malaysia using a back-translation method to ensure linguistic and conceptual equivalence. Two bilingual experts independently translated the questionnaire from English to Bahasa Malaysia and then back to English. Any discrepancies identified during the process were discussed and resolved to maintain content validity and clarity. This approach helps ensure that respondents accurately interpret the questionnaire items, regardless of language preference.

Overall, the questionnaire design supports the study's quantitative approach and ensures consistency with the proposed theoretical framework and hypotheses.

3.8.1 **Section** A

Section A contains three initial screening questions designed to determine the eligibility of respondents for the study titled "Factors Influencing Customers' Usage of E-Payment in the Klang Valley Area." These questions focus on general criteria such as smartphone ownership, Klang Valley residency, and prior experience with e-payment

systems. Respondents must answer all questions by selecting the appropriate option; only those who respond "Yes" to all three questions may proceed with the rest of the questionnaire.

SECTION A: SCREENING QUESTION

BAHAGIANA: SOALANSARINGAN

1. Do you own a smartphone?
   Adakah anda mempunyai telefon pintar?

   - Yes/7a
   - ^olTidak

2. Are you a Klang Valley Resident?
   Adakah andapenduduk Lembah Klang?

   - Yes/7a
   - ^olTidak

3. Have you use e-payment system before?
   Pernahkah anda menggunakan sistempembayaran elektronik sebelum ini?

   - Yes/7a
   - ^olTidak

If "No" you may end the question here, thank you.

Jika "Tidak" anda boleh berhenti menjawab di sini. Terima kasih.

3.8.2 Section B

Section B contains five questions that gather general information related to the research topic, Factors Influencing Customers' Usage of E-Payment in the Klang Valley Area. The questions are designed to explore respondents' experiences and behavior with e-payment systems, including the types of systems they have used, the kinds of items they purchase, how frequently they use e-payment, and their perceptions regarding efficiency and ease of use. This section helps identify key factors that may influence the adoption and usage of e-payment systems among Klang Valley residents.

Respondents are required to answer all questions, some of which allow for multiple selections.

SECTION B: GENERAL INFORMATION

BAHAGIANB: MAKLUMA T AM

1. What type of e-payment systems have you used? (You may choose more than one)
   Apakah jenis sistem pembayaran elektronik yang pernah anda gunakan? (Anda boleh memilih lebih daripada satu)

   • Touch 'n Go e-Wallet
   D Grab Pay
   • Maybank QR Pay
   • Boost Pay
   D ShopeePay
   D Others (Please specify):_____

2. What item do you purchase using e-payment systems? (You may choose more than one)
   Apakah barangan yang anda belt menggunakan sistem pembayaran elektronik? (Anda boleh memilih lebih daripada satu)

   D Food and Beverages/ *Makanan dan Minuman*
   D Groceries/ *Barangan Runcit*
   D Fashion and Accessories/ *Fesyen dan Aksesori*
   D Health and Beauty/ *Kesihatan dan Kecantikan*
   D Home and Living/ *Peralatan Rumah*
   D Technology and Gadget/ *Teknologi dan Gajet*
   D Others (Please specify) / *Lain-lain (Sila nyatakan:*_____

3. How frequent you use e-payment systems in a day?
   Berapa kerap anda menggunakan sistem pembayaran elektronik dalam sehari?

   D 1 to 5 times/ *1 ke 5 kali*
   D 6 to 10 times/ *6 ke 10 kali*
   D More than 10 times/ *Lebih dari 10 kali*

4. Do you think the e-payment systems is more efficient than traditional payment channels?

   Adakah anda berpendapat bahawa sistem pembayaran elektronik lebih cekap berbanding saluran pembayaran tradisional?

   - Yes/ *Ya*
   - *No/ Tidak*

5. Do e-payment systems is easy to understand?

   Adakah sistem pembayaran elektronik mudah difahami?

   - Yes/ *Ya*
   - No/ *Tidak*

3.8.3 Section C

Section C includes five questions for surveying respondents on the relationships between factors influencing customers' usage of e-payment methods among Malaysian citizens in Klang Valley who have the **convenience** to use them. The questionnaire elements in Section C are related to the independent variables discussed by the researcher. This section is related to the scale used, which consists of five levels. Respondents were asked to select one of five levels: strongly disagree (1), disagree (2), neutral (3), agree (4), and strongly agree (5).

Table 3.1
Questionnaire Content for Convenience

CODE	ORIGINAL CONTENT	MODIFIED CONTENT	SOURCES
CV1	Are you an e-Wallet user?	It is easy for me to use an e-payment system.	Edeh, Friday & Aryani, Dwi & Subramaniam, Tanuja & Kee, Daisy & Samarth, Tejas & Nair, Rajesh &
CV2	Is e-Wallet your primary payment method?	E-payment system is my primary payment method because it is convenience to use.	

CODE	ORIGINAL CONTENT	MODIFIED CONTENT	SOURCES
CV3	Do you think the usage of e-Wallet is convenient?	My engagement with the e-payment system is straightforward and understandable.	Kannappan, Thirumagal & Tan, Yee & Teh, Yi. (2021). Impact of COVID-19 Pandemic on Consumer Behaviour towards the Intention to Use E-Wallet in Malaysia. International Journal of Accounting & Finance in Asia Pasific. 4. 42-59. 10.32535/ijafap. v4i3.1205.
CV4	Do you think that the usage of e-Wallet is more convenient than cash during this COVID-19 pandemic to reduce the contact among people?	E-payment system usage is more convenience than cash since it saves time.	
CV5	Which payment method do you prefer the most?	Using e-payment system ease me to purchase	

3.8.4 Section D

Section D includes five questions for surveying respondents on the relationships between factors that influence customers' usage of e-payment methods among Malaysian citizens, all of which are related to the issue of **security** systems. The questionnaire elements in Section D are related to the independent variable discussed by the researcher. The scale used in this section consists of five options. Respondents were asked to select one of five options: strongly disagree (1), disagree (2), neutral (3), agree (4), and strongly agree (5).

Table 3.2
Questionnaire Content for Security

CODE	ORIGINAL CONTENT	MODIFIED CONTENT	SOURCES
SC1	I perceive e-payment system as secure.	I believe an e-payment system is secure for me.	Jusoh, Z. M., & Jing, T. Y. (2019).
SC2	I perceive the information relating to user and e-payment transactions as secure.	I believe the information about transaction is secure.	Perceived security, subjective norm, self-efficacy, intention,

CODE	ORIGINAL CONTENT	MODIFIED CONTENT	SOURCES
SC3	I trust in the ability of an online bank to protect my privacy on e-payment system.	I believe that the e-payment system will protects my privacy in the system.	and actual usage towards e-payment among UPM students. Journal of Education and Social Sciences, 12(2), 8-22.
SC4	I believe inappropriate parties will not be able to view the information I provide during a transaction on e-payment system	I believe that immoral parties not be able to view my personal information during transaction on e-payment system.	
SC5	I am not worried about the security of e-payment system.	I feel confident making payment through e-payment system.	

3.8.5 Section E

Section E includes four questions for surveying respondents on the relationships between factors influencing Malaysian citizens' usage of e-payment methods that are related to **speed**. The questionnaire elements in Section E are related to the independent variable discussed by the researcher. The scale used in this section consists of five options. Respondents were asked to select one of five options: strongly disagree (1), disagree (2), neutral (3), agree (4), and strongly agree (5).

Table 3.3
Questionnaire Content for Speed

CODE	ORIGINAL CONTENT	MODIFIED CONTENT	SOURCES
SP1	I can save time and cost	E-payment can save my time while using it.	Abdul Rashid, K., Aziz, A., Abd Rahim, S., & Aziz, S. (2023). The Practice of E-wallet Cashless Payment Among Youth After Movement Control Order (MCO)
SP2	I do not need to stand in long queues to withdraw cash	Using e-payment system is faster than the traditional payment method.	
SP3	I can easily use cashless payment no matter where I am	I can use e-payment system at anytime and anywhere.	

CODE	ORIGINAL CONTENT	MODIFIED CONTENT	SOURCES
SP4	I can easily keep track of the transaction record in the existing system	I can save my time to track transaction record in e-payment system.	2022. Borneo International Journal EISSN 2636-9826, 6(1), 87-95.
SP5	I believe that using Mobile Payment will improve the speed of transaction.	I feel that using e-payment system will speed up transactions.	

3.8.6 Section F

Section F contains four questions for surveying respondents on the relationships between factors that influence customers' usage of e-payment methods among Malaysian citizens related to **social influence as a mediator.** This section uses a five-point scale. Respondents were asked to select one of five options: strongly disagree (1), disagree (2), neutral (3), agree (4), and strongly agree (5).

Table 3.4
Questionnaire Content for Social Influence as a Mediator

CODE	ORIGINAL CONTENT	MODIFIED CONTENT	SOURCES
SI1	Family and people who are important to me affect my intention to use the e-wallet.	My family influence me to use the e-payment system.	Teo, S. C., Law, P. L., & Koo, A. C. (2020). Factors Affecting Adoption of E-Wallets among Youths in Malaysia. Journal of Information System and Technology Management, 5 (19), 39- 50.
SI2	Friends and colleagues affect my intention to use the e-wallet	My friends influence me to use the e-payment system.	
SI3	The media and advertisement affect my intention to use the e-wallet.	The media influence me to use an e-payment system.	
SI4	People who influence my behaviour think that I should use the system.	People that have an influence on my behaviour believe I should use the e-payment system.	
SI5	People whose opinions that I value prefer that I use mobile Internet.	People whose opinions I respect influence me to use the e-payment system.	

3.8.7 Section G

Section G contains five questions surveying Malaysian citizens on their usage of e-payment methods. The questionnaire elements in Section G are related to the dependent variable—usage of e-payment among Malaysian citizens in the Klang Valley area—which the researcher discussed. The scale used in this section consists of five options. Respondents were asked to select one of four options: strongly disagree (1), disagree (2), neutral (3), agree (4), or strongly agree (5).

Table 3.5
Questionnaire Content for Usage of E-Payment

CODE	ORIGINAL CONTENT	MODIFIED CONTENT	SOURCES
ePMl	The procedures of e-wallet are simple to me.	E-payment system is easy to use.	Teo, S. C, Law, P. L. &Koo,A. C. (2020). Factors Affecting the Adoption of E-Wallets among Youths in Malaysia. Journal of Information System and Technology Management, 5 (19), 39-50.
ePM2	**I** intend to use the e-payment system more frequently in the future.	I plan to use e-payment more frequently in the future.	
ePM3	Using an e-wallet makes it easier for me to carry out my day-to-day tasks.	E-payment systems make my daily tasks easier.	
ePM4	Using e-wallet is the trend of the modern lifestyle.	Using e-payment system is the trend for the modern lifestyle.	
ePM5	**I** am currently using and will continue to use e-payment system.	I plan to continue to use e-payment system in the future.	

3.8.8 Section H

Section H contains six questions for surveying respondent information that are linked to respondents' personal information and demographics. Respondents need only select one answer to complete the questions, and each question requires an answer.

SECTION H: DEMOGRAPHIC PROFILE

1. Age group

- 18 to 29 years' old/ 18 ke 29 tahun
- 30 to 39 years' old/ 30 ke 39 tahun
- 40 to 49 years' old/ 40 ke 49 tahun
- 50 to 59 years' old/ 50 ke 59 tahun

D 60 years old and above/ 60 tahun ke atas

2. Gender

- Male
- Female

3. Ethnic

- Malay
- Chinese
- Indian
- Others (Please specify):_____

4. Current level of education?

D Secondary School

D Diploma

D Bachelor's Degree

- Masters
- PhD

D Others (Please specify):_____

5. Status

- Single
- Married

6. Religion

- Muslim
- Buddhist
- Hindu
- Christian
- Others (Please specify):_____

3.9 Pilot Study

A pilot study was conducted prior to the main data collection to assess the clarity, reliability, and suitability of the questionnaire. Pilot testing is an important preliminary step in survey-based research, as it helps identify potential problems related to question wording, structure, and respondent understanding before administering the instrument to a larger sample (Zikmund et al., 2010).

The primary objectives of the pilot study were to ensure that respondents clearly understood the questionnaire items, to evaluate the overall flow and length of the questionnaire, and to identify any ambiguous or confusing statements. Conducting a pilot study also helps reduce the risk of measurement error and enhances the quality and reliability of the data collected in the main study (Saunders et al., 2019).

In this study, the pilot test involved 24 respondents who met the same criteria as the target population: Malaysian citizens aged 18 years and above residing in the Klang Valley and using e-payment systems. The respondents selected for the pilot study were not included in the final data analysis to avoid bias.

Previous literature suggests that a pilot study sample size ranging from 20 to 30 participants is adequate for testing survey instruments and assessing feasibility. Birkett and Day (1994) recommend a minimum of 20 respondents for internal pilot studies, while Hertzog (2008) suggests that 20 to 25 participants are sufficient for examining preliminary reliability and feasibility. Johanson and Brooks (2010) further indicate that a sample size of approximately 30 respondents is reasonable for pilot studies in quantitative research.

Based on these guidelines, the use of 24 respondents in this pilot study is considered appropriate. Feedback obtained from the pilot study was used to refine the questionnaire, including improving item wording and ensuring clarity, prior to the full-

scale data collection. This process contributed to enhancing the reliability and validity of the research instrument.

3.10 Data Analysis

The act of cleansing, transforming, and modeling data in order to uncover usable information for business decisions is referred to as data analysis. The goal of data analysis is to extract useful information from data and make decisions based on that knowledge. Following data collection, the information is entered into the program for analysis and hypothesis testing. The Statistical Package for Social Science (SPSS) and Microsoft Excel were used to analyze the data.

3.10.1 Descriptive Analysis

Descriptive analysis provides an overview of the key features of the collected data, offering insights into the distribution of variables and helping to identify patterns, trends, and potential outliers. This analysis is particularly important in understanding how respondents' characteristics align with the research objectives and hypotheses.

For this study, descriptive statistics such as the mean, standard deviation, and frequency distributions were used to summarise the data. These measures provide an understanding of the central tendency (average), variability, and overall patterns of responses. Descriptive analysis will also be used to assess the distribution of responses across the various independent variables (convenience, security, speed, and social influence) and the dependent variable (e-payment usage), preparing the data for further inferential analysis. In Chapter 4, the results will be presented in tables for clarity and ease of interpretation.

3.10.2 Reliability Analysis

Reliability analysis ensures the consistency and dependability of the measurement instruments used in the study, specifically the survey questionnaire. In this context, reliability refers to the degree to which the questionnaire consistently measures the intended constructs, such as convenience, security, transaction speed, and social influence.

Cronbach's alpha was used to assess internal consistency, a commonly used measure for determining the reliability of multi-item scales. According to Sekaran and Bougie (2013), a Cronbach's alpha value of 0.70 or higher is considered acceptable for ensuring the reliability of a scale. A high Cronbach's alpha value indicates that the items within each construct are highly correlated, demonstrating that the questionnaire consistently measures each variable.

Table 3.6
Cronbach's Alpha Value

Cronbach's alpha	Internal consistency
a>0.9	Excellent
0.9 >a >0.8	Good
0.8 >a >0.7	Acceptable
0.7 >a >0.6	Questionable
0.6 >a >0.5	Poor
0.5 > a	Unacceptable

In this study, Cronbach's alpha will be calculated for each independent variable (convenience, security, speed, and social influence) and the dependent variable (e-payment usage) to ensure that the scales are internally consistent. A value of 0.70 or greater for each construct will confirm the data's reliability for subsequent analysis.

3.10.3 Pearson Correlation

When looking for a linear relationship between two variables, a Pearson's correlation is utilized. Pearson's correlation will show the direction, strength, and significance of the bivariate connection between all variables assessed at the interval or ratio level (Sekaran & Bougie, 2013). The Pearson Correlation Coefficient is commonly used to investigate the existence of a link between quantitative data and two variables. In simple terms, the Pearson Correlation Coefficient indicates the strength of the linear link between two continuous variables. The range is as follows:

$$-1 < 0 < +1$$

Below is the table that shows the rules of thumb for the correlation coefficient, as proposed by Davis (1997), to indicate the correlation between the variables measured in this study.

Table 3.7
Correlation Coefficient Value

Correlation Coefficient	Strength Description
±0.81 - ±1.00	Strongest
±0.61 - ±0.80	Strong
±0.41 - ±0.60	Moderate
±0.21 - ±0.40	Weak
±0.00 - ±0.20	Weak to No Relationship

A different correlation value indicates a different strength of correlation. A correlation is deemed very weak if the value is between 0.00 and 0.19 or between 0.00 and -0.19. Following that, a value of 0.20 to 0.39 (or -0.20 to -0.39) is deemed weak. Meanwhile, 0.40 to 0.59 or -0.40 to -0.59 is considered moderate. Then, 0.60 to 0.79 or -0.60 to -0.79 is regarded as strong, while 0.80 to 1.0 or -0.80 to -1.0 is considered very strong.

3.10.4 Multiple Regression

Multiple regression analysis is employed to examine the relationship between multiple independent variables and a single dependent variable, while controlling for other factors. In this study, multiple regression is used to assess the combined effect of convenience, security, speed, and social influence on e-payment usage. This method allows for the evaluation of the relative importance of each independent variable in predicting the dependent variable, while accounting for potential confounding variables.

Multiple regression is particularly useful in this study as it enables the researcher to explore complex relationships and understand how multiple factors contribute to users' decisions to adopt and use e-payment systems. The inclusion of social influence as a mediating variable will also be tested using mediation analysis to determine if social

influence strengthens or weakens the effect of convenience, security, and speed on e-payment usage.

By using multiple regression, the study provides a comprehensive understanding of the determinants of e-payment adoption and offers insights into how various factors interact to shape consumer behavior in the Klang Valley.

3.11 Summary

To summarize, the following chapter details the methodology used in this study. It specifically emphasizes the research design and data collection methods, as well as the demographic target group, sampling method, and sample size. The findings will be discussed in greater detail in Chapter 4.

CHAPTER 4
DATA ANALYSIS

4.1 Introduction

This chapter presents a statistical analysis of the research data, using the techniques outlined in the methodology section. The goal is to explore the relationships between convenience, security, and speed in customers' usage of e-payment in Klang Valley, with a particular focus on the mediating role of social influence. The chapter begins with an overview of the preliminary findings before diving into the detailed statistical tests. Finally, before moving on to inferential analysis, the data was carefully screened using SPSS software to ensure its accuracy and reliability.

4.2 Content Validity

Content validity refers to the extent to which a measurement tool, such as a questionnaire, fully represents all relevant aspects of the construct it is intended to measure. It ensures that the items included in the instrument adequately capture the breadth of the construct without excluding significant components (Haynes et al., 1995).

To establish content validity for this study, the research instrument (questionnaire) underwent a rigorous review process involving both organizational experts and academic lecturers. Organizational experts, who have practical experience in the e-payment and fintech industries, were consulted to ensure that the questionnaire items accurately reflected real-world applications and the key dimensions of e-payment adoption in the Klang Valley. Their insights ensured that the items measured relevant behaviors, attitudes, and perceptions related to convenience, security, speed, and social influence, all of which are central to this study.

In addition, academic lecturers who specialize in the theoretical foundations of technology acceptance models (such as TAM and UTAUT) reviewed the instrument to verify that the items were grounded in existing literature. They assessed the alignment of the questionnaire with well-established theoretical constructs and identified any

potential gaps in coverage. Both experts confirmed that the instrument appropriately addressed the key constructs and was aligned with the research objectives.

The consultation process was conducted with one organizational expert and one academic lecturer. After a thorough review of the questionnaire, both parties provided positive feedback, agreeing that the instrument was comprehensive, clear, and appropriate for measuring the intended constructs. Notably, no changes or adjustments were suggested, further confirming the content validity of the research instrument. This collaborative approach strengthened the instrument's relevance, accuracy, and alignment with the study's objectives, ensuring that the data collected would be reliable and valid.

4.3 Pilot Study

Before administering the questionnaire to the full sample, a pilot study was conducted to test the clarity, reliability, and validity of the research instrument. The pilot test involved distributing 24 questionnaires to a small sample of respondents residing in the Klang Valley, specifically on September 17, 2024. The primary purpose of the pilot study was to identify any issues with the questionnaire design, such as ambiguous questions or response biases, and to refine the instrument before full-scale data collection.

The feedback from the pilot respondents provided valuable insights, enabling the researchers to identify and correct potential errors in the questionnaire. This iterative process ensured that the questions were clear, relevant, and aligned with the study's objectives. Additionally, the feedback allowed for improvements in the overall structure and flow of the questionnaire, which helped enhance the reliability and validity of the instrument.

Although pilot studies typically use smaller sample sizes, research indicates that sample sizes of 10 to 30 respondents are sufficient to identify potential issues in the instrument's design (Viechtbauer et al., 2020). In this study, the sample size of 24 respondents is consistent with these recommendations and provides a solid basis for refining the questionnaire. Given the small scale of the pilot study, the findings were not intended to be generalizable but rather to ensure that the instrument was reliable and appropriate for the target population.

Subsequent to data collection, a reliability analysis was conducted using the Statistical Package for the Social Sciences (SPSS) to assess the internal consistency of the questionnaire. Cronbach's alpha, a widely used measure of reliability, was applied to determine the degree to which the items within each construct (convenience, security, transaction speed, social influence, and e-payment usage) were correlated. According to Malhotra (2021), a Cronbach's alpha value above 0.6 indicates acceptable reliability.

For this pilot study, the overall Cronbach's alpha for the questionnaire was calculated at 0.800, demonstrating good internal consistency and confirming that the instrument is reliable for subsequent data collection. This result indicates that the items within the constructs are well aligned and capable of measuring the intended variables consistently.

Table 4.1
Reliability Results for Pilot Test

Section	Cronbach's Alpha	No. of Items
Section C: Convenience	.800	**5**
Section D: Security	.938	**5**
Section E: Speed	.907	**5**
Section F: Social Influence	.840	**5**
Section G: Use Of E-Payment	**.881**	**5**
Reliability All Items	.952	**25**

4.4 Data Cleaning

Data cleaning is a critical process that ensures the accuracy and reliability of the data used in analysis. It involves identifying and correcting errors, inconsistencies, and missing values within the dataset. For this study, data cleaning was performed to eliminate invalid responses and ensure that only reliable, complete, and relevant data were used for hypothesis testing.

Upon completion of the data collection, 228 questionnaires were returned. However, 20 of these responses were excluded from the analysis due to non-compliance with the study's inclusion criteria. The respondents were disqualified because they either:

- Did not own a smartphone
- Did not use e-payment systems
- Were not residents of the Klang Valley

The exclusion of these responses was necessary to maintain the validity of the study and ensure that the data accurately reflected the target population: e-payment users residing in Klang Valley, aged 18 and above. The remaining 208 valid responses were retained for analysis, providing a representative sample for the study's research objectives.

The data cleaning process also included verifying the completeness of responses to ensure that all necessary data points were available for each construct. Incomplete or inconsistent responses were removed or corrected to preserve the integrity of the dataset and ensure that subsequent analyses were based on high-quality, reliable data.

4.5 Data Missing

Missing data refers to instances where responses or information are absent from a dataset. This can occur for various reasons, including participant attrition, incomplete responses, or errors during data collection. If not addressed appropriately, missing data can introduce bias, reduce statistical power, and compromise the validity of research findings (Tabachnik & Fidell, 1996). Therefore, researchers must carefully examine the extent of missing data and determine suitable handling methods.

In this study, the dataset was examined for missing data to ensure its completeness and usability for analysis. Adhering to established statistical practices, a missing data rate of less than 5% is generally considered to have a minimal impact on results, negating the need for further investigation into the missing data pattern (Tabachnik & Fidell, 2019). Upon review, no missing values were identified in the dataset. All responses were complete, and the data were deemed valid for analysis. This ensures that the findings are based on a comprehensive dataset, enhancing the reliability and accuracy of the results.

In the event of missing data, common techniques such as mean imputation, multiple imputation, or listwise deletion would have been considered. However, given the absence of missing values, these methods were not required for this study.

4.6 Screening Question Analysis

The screening results confirm that all 228 participants own a smartphone, live in Klang Valley, and have prior experience with e-payment systems. This focus on experienced digital payment users enables a deeper analysis of factors influencing e-wallet adoption, such as convenience, security, speed, and social influence. However, because all respondents are already familiar with e-payments, the study may not capture insights from first-time users or those hesitant to adopt digital payments, thus limiting the generalizability of the findings.

Table 4.2
Screening Questions Results

Variables		**Frequency**	**%**
Do you own a smartphone?	Yes	228	100.0
Are you a Klang Valley Resident?	Yes	228	100.0
Have you use e-payment system before?	Yes	228	100.0
Total Frequency			100.0

4.7 Demographic Analysis

Table 4.3 presents the demographic profile of the study's sample. All 228 participants own a smartphone, reside in the Klang Valley, and have prior experience using e-payment systems. The age distribution is largely youthful, with 74.6% between 18 and 39 years old, and a small fraction (0.9%) aged 60 and above.

The sample is predominantly female (64.5%), with males accounting for 35.5%. Most participants hold a bachelor's degree (46.9%), followed by a diploma (28.9%), a master's degree (12.7%), or a PhD (1.3%). 10.1% of respondents reported secondary school as their highest educational qualification. Over half of the respondents are married (58.8%), while 41.2% are single. The majority are Muslim (93.9%), with smaller representations of Christians (3.1%), Hindus (2.6%), and Buddhists (0.4%).

Table 4.3
Demographic Information

Variables		Frequency	%
Age group	18 to 29 years'old	87	38.2
	30 to 39 years' old	83	36.4
	40 to 49 years' old	43	18.9
	50 to 59 years' old	13	5.7
	60 years old and above	2	0.9
		228	100.0
Gender	Female	147	64.5
	Male	81	35.5
		228	100.0
Ethnic	Malay	211	92.5
	Chinese	8	3.5
	India	7	3.1
	Bidayuh	1	4.0
	Bumiputera Sarawak	1	4.0
		228	100.0
Level of Education	Secondary School	23	10.1
	Diploma	66	28.9
	Bachelor's Degree	107	46.9
	Masters	29	12.7
	PhD	3	1.3
		228	100.0
Marital status	Married	134	58.8
	Single	94	41.2
		228	100.0
Religion	Buddhist	1	.4
	Christian	7	3.1
	Hindu	6	2.6
	Muslim	214	93.9
Total		228	100.0

4.8 Descriptive Analysis

4.8.1 General Information

Table 4.4 presents a descriptive analysis of e-payment system usage among Klang Valley residents. Maybank QR Pay is the most used platform, accounting for 29.2% of transactions, followed by Touch 'n Go e-Wallet at 27.3%. ShopeePay and Grab Pay are also popular, with 19.8% and 16.8% usage, respectively, while Boost Pay and other platforms account for smaller portions at 4.1%> and 2.7%. This suggests that a few platforms dominate the region's e-payment market.

Most respondents (68.9%>) use e-payment systems 1 to 5 times per day, while 12.7%) report 6 to 10 daily uses, and 18.4% make more than 10 transactions daily. This indicates frequent and consistent e-payment usage, suggesting these systems are integrated into their daily routines. Furthermore, perceptions of e-payment systems reveal widespread acceptance and usability. A significant majority (97.8%>) consider e-payment systems more efficient than traditional methods, and 98.7% find them easy to use. These findings highlight the effectiveness of these systems in meeting user expectations for convenience and simplicity. Overall, the data portrays e-payment systems as well-integrated and widely accepted in Klang Valley, driven by their efficiency, ease of use, and versatility across various purchase categories.

Table 4.4
Descriptive Analysis of General Information in Klang Valley

Variables		**Frequency**	**%**
What item do you purchase using e-payment systems?	Touch 'n Go e-Wallet	180	27.3
	Grab Pay	**111**	16.8
	Maybank QR Pay	193	29.2
	Boost Pay	**27**	**4.1**
	ShopeePay	**131**	19.8
	Others	**18**	**2.7**
What item do you purchase using e-payment systems?	Food and beverages	211	21.5
	Groceries	175	17.8
	Fashion and accessories	165	16.8
	Health and beauty	162	16.5
	Home and living	135	13.8

Variables		Frequency	%
	Technology and gadget	126	12.8
	Others	7	0.7
How frequent you use e-payment systems in a day?	1 to 5 times	157	68.9
	6 to 10 times	29	12.7
	More than 10 times	42	18.4
Do you think the e-payment systems is more efficient than traditional payment channels?	No	5	2.2
	Yes	223	97.8
Do e-payment systems is easy to understand?	No	3	1.3
	Yes	225	98.7

4.8.2 Convenience

Table 4.5 presents a descriptive analysis highlighting the perceived convenience of e-payment systems among Klang Valley residents. The overall mean score of 4.57 (SD = 0.58) indicates strong agreement regarding the ease and efficiency of these systems.

The statement, "It is easy for me to use an e-payment system," received the highest mean score (M = 4.68, SD = 0.58), with 72.8% of respondents strongly agreeing and 22.4% agreeing. This suggests that the simplicity of e-payment systems is a significant factor in their widespread adoption. Similarly, the statement, "My engagement with the e-payment system is straightforward and understandable," scored highly (M = 4.59, SD = 0.61), indicating that most users find these systems intuitive and user-friendly.

The statement, "Using e-payment system easy for me to make purchases," also received a high mean score (M = 4.59, SD = 0.63), with 66.7% strongly agreeing and 26.3% agreeing. This highlights the role of e-payment systems in facilitating seamless transactions. The statement, "E-payment system usage is more convenient than cash since it saves time," scored slightly lower (M = 4.48, SD = 0.82), but still reflected strong agreement, with 64.0% strongly agreeing and 24.1% agreeing, emphasizing the time-saving advantage of these systems.

Lastly, the statement "E-payment system is my primary payment method because it is convenient to use" had a mean score of 4.50 (SD = 0.75), with 63.6%

strongly agreeing and 24.1% agreeing, highlighting the importance of convenience in choosing e-payment systems over traditional methods.

Overall, the findings show that respondents overwhelmingly consider e-payment systems convenient, user-friendly, and time-efficient, making them the preferred payment method in the Klang Valley. The high agreement across all statements indicates that these systems align well with user needs and expectations, solidifying their integration into daily life.

Table 4.5
Descriptive Analysis of Convenience of e-payment in Klang Valle

No.	Statement	1	2	3	4	5	*M*	SD
1.	It is easy for me to use an e-payment system.	0	1 (0.4)	10 (4.4)	51 (22.4)	166 (72.8)	4.68	0.58
2.	E-payment system is my primary payment method because it is convenience to use.	1 (0.4)	1 (0.4)	26 (11.4)	55 (24.1)	145 (63.6)	4.50	0.75
3.	My engagement with the e-payment system is straightforward and understandable.	0	1 (0.4)	11 (4.8)	68 (29.8)	148 (64.9)	4.59	0.61
4.	E-payment system usage is more convenience than cash since it saves time.	2 (0.9)	5 (2.2)	20 (8.8)	55 (24.1)	146 (64.0)	4.48	0.82
5.	Using e-payment system ease me to make purchase.	0	1 (0.4)	15 (6.6)	60 (26.3)	152 (66.7)	4.59	0.63
	Overall						**4.57**	**0.58**

Notes: Strongly Disagree (1), Disagree (2), Neutral (3), Agree (4), Strongly Agree (5)

4.8.3 Security

Table 4.6 presents a descriptive analysis of respondents' perceptions of e-payment system security in the Klang Valley. The overall mean score of 3.94 (SD = 0.82) suggests a moderate to high level of agreement regarding the security and reliability of these systems, though some concerns persist.

The statement "I feel confident making payments through the e-payment system" received the highest mean score (M = 4.13, SD = 0.79), with 36.0% strongly agreeing and 43.0% agreeing. This indicates that most users trust the process and feel secure during transactions. Similarly, "I believe an e-payment system is secure for me" scored a mean of 4.03 (SD = 0.86), with 32.0% strongly agreeing and 44.3% agreeing, further reinforcing the general sense of security.

Perceptions of secure transaction information were also relatively strong, with the statement "I believe the transaction information is secure" achieving a mean of 4.01 (SD = 0.88). However, the lower proportion of strong agreement (32.5%) suggests that some users remain neutral or less confident about information security.

Privacy concerns were more pronounced, as reflected in the statement "I believe that the e-payment system will protect my privacy in the system," which had a lower mean score of 3.85 (SD = 0.98). Additionally, "I believe that immoral parties will not be able to view my personal information during transactions on the e-payment system" scored the lowest mean (M = 3.69, SD = 1.07). These findings indicate greater user reservations about privacy protection and potential unauthorised access to personal data.

In summary, while respondents generally trust the security of e-payment systems and feel confident using them, concerns about privacy and data protection remain. These perceptions suggest an opportunity for e-payment providers to strengthen and better communicate their privacy safeguards to address user apprehensions and further enhance trust.

Table 4.6
Descriptive analysis of security of e-payment in Klang Valle

No.	**Statement**	**1**	**2**	**3**	**4**	**5**	***M***	**SD**
1.	I believe an e-payment system is secure for me.	2 (0.9)	8 (3.5)	44 (19.3)	101 (44.3)	73 (32.0)	4.03	0.86
2.	I believe the transaction information is secure.	3 (1.3)	6 (2.6)	51 (22.4)	94 (41.2)	74 (32.5)	4.01	0.88
3.	I believe that the e-payment system will protect my privacy in the system.	4 (1.8)	15 (6.6)	60 (26.3)	82 (36.0)	67 (29.4)	3.85	0.98

No.	Statement	1	2	3	4	5	*M*	SD
4.	I believe that immoral parties will not be able to view my personal information during transaction on e-payment system.	10 (4.4)	18 (7.9)	62 (27.2)	80 (35.1)	58 (25.4)	3.69	1.07
5.	I feel confident making payment through e-payment system.	1 (0.4)	2 (0.9)	45 (19.7)	98 (43.0)	82 (36.0)	4.13	0.79
	Overall						**3.94**	**0.82**

Notes: Strongly Disagree (1), Disagree (2), Neutral (3), Agree (4), Strongly Agree (5)

4.8.4 Speed

Table 4.7 presents a descriptive analysis of e-payment system speed in the Klang Valley, with an overall mean score of 4.47 (SD = 0.64), indicating strong agreement that these systems are efficient and time-saving.

The statement "I can save time tracking transaction records in the e-payment system" received the highest mean score (M = 4.57, SD = 0.62), with 63.6% strongly agreeing and 31.1% agreeing. This suggests that users highly value the convenience and speed of accessing transaction records through e-payment systems, a key advantage over traditional payment methods.

The perception that "E-payment saves time" also scored highly (M = 4.55, SD = 0.69), with 66.2% strongly agreeing and 23.2% agreeing. This reinforces the time-saving benefit as a primary reason for the widespread adoption of e-payment systems. Similarly, "Using e-payment systems speeds up transactions" scored a mean of 4.50 (SD = 0.69), with 60.5% strongly agreeing and 29.8% agreeing, further underscoring the efficiency of these systems in facilitating quick transactions.

The statement "Using an e-payment system is faster than traditional payment methods" also garnered strong agreement (M = 4.48, SD = 0.75), with 61.8% strongly agreeing and 26.3% agreeing, highlighting the competitive speed of e-payments. However, the statement "I can use e-payment systems anytime, anywhere" scored slightly lower (M = 4.25, SD = 0.92), with 51.8% strongly agreeing and 26.8% agreeing, suggesting that while users generally appreciate the accessibility of e-payment systems, usability may have occasional limitations. Overall, the findings reveal that speed is a significant factor in the positive perception of e-payment systems, with users

particularly appreciating their ability to save time during transactions and in record-keeping, making them highly appealing for those seeking convenience and efficiency in their daily financial activities.

Table 4.7
Descriptive analysis of speed of e-payment in Klang Valley

No.	Statement	1	2	3	4	5	*M*	SD
1.	E-payment can save my time while using it.	0	1 (0.4)	23 (10.1)	53 (23.2)	151 (66.2)	4.55	0.69
2.	Using e-payment system is faster than the traditional payment method.	0	4 (1.8)	23 (10.1)	60 (26.3)	141 (61.8)	4.48	0.75
3.	I can use e-payment system at anytime and anywhere.	2 (0.9)	8 (3.5)	39 (17.1)	61 (26.8)	118 (51.8)	4.25	0.92
4.	I can save my time to track transaction record in e-payment system.	0	2 (0.9)	10 (4.4)	71 (31.1)	145 (63.6)	4.57	0.62
5.	I feel that using e-payment system will speed up transactions.	0	2 (0.9)	20 (8.8)	68 (29.8)	138 (60.5)	4.50	0.69
	Overall						**4.47**	**0.64**

Notes: Strongly Disagree (1), Disagree (2), Neutral (3), Agree (4), Strongly Agree (5*)*

4.8.5 Social Influence

Table 4.8 presents a descriptive analysis of social influence on e-payment system adoption in the Klang Valley. The overall mean score of 3.76 (SD = 0.98) suggests a moderate impact, with variability among different social agents.The statement "The media influence me to use an e-payment system" received the highest mean score (M = 3.94, SD = 1.08), with 37.7% strongly agreeing and 33.3% agreeing. This indicates that media channels significantly shape perceptions and encourage adoption, likely through advertisements, news, or promotional campaigns. Similarly, friend influence is notable; the statement "My friends influence me to use the e-payment system" scored a mean of 3.91 (SD = 1.11), with 36.0% strongly agreeing and an equal proportion agreeing. This suggests that peer recommendations and usage trends strongly impact adoption.

The statement "People that have an influence on my behaviour believe I should use the e-payment system" garnered a mean score of 3.78 (SD = 1.12), with 32.5% strongly agreeing and 30.7% agreeing. This highlights the importance of influential individuals, such as mentors or authority figures, in encouraging e-payment technology adoption. The influence of respected opinions is also notable; the statement "People whose opinions I respect influence me to use the e-payment system" scored a mean of 3.73 (SD = 1.16). However, the broader variability in responses suggests influence is strong for some but negligible for others.

Family influence, reflected in the statement "My family influences me to use the e-payment system," received the lowest mean score (M = 3.45, SD = 1.26), indicating that family plays a comparatively smaller role in promoting e-payment usage. Overall, the findings emphasize that while media and friends are key drivers of social influence, respected opinions and influential individuals also contribute significantly. E-payment providers can leverage these insights by enhancing media outreach and encouraging social advocacy to boost adoption rates.

Table 4.8
Descriptive analysis of social influence of e-payment in Klang Valley

No.	Statement	1	2	3	4	5	*M*	SD
1.	My family influence me to use the e-payment system.	21 (9.2)	30 (13.2)	62 (27.2)	55 (24.1)	60 (26.3)	3.45	1.26
2.	My friends influence me to use the e-payment system.	10 (4.4)	18 (7.9)	36 (15.8)	82 (36.0)	82 (36.0)	3.91	1.11
3.	The media influence me to use an e-payment system.	6 (2.6)	21 (9.2)	39 (17.1)	76 (33.3)	86 (37.7)	3.94	1.08
4.	People that have an influence on my behaviour believe I should use the e-payment system.	10 (4.4)	20 (8.8)	54 (23.7)	70 (30.7)	74 (32.5)	3.78	1.12
5.	People whose opinions I respect influence me to use the e-payment system.	12 (5.3)	22 (9.6)	52 (22.8)	71 (31.1)	71 (31.1)	3.73	1.16
	Overall						**3.76**	**0.98**

Notes: Strongly Disagree (1), Disagree (2), Neutral (3), Agree (4), Strongly Agree (5)

4.8.6 Use of E-Payment

Table 4.9 presents a descriptive analysis of user perceptions regarding e-payment systems in the Klang Valley. The overall mean score of 4.55 (SD = 0.59) indicates a highly favorable perception, with most respondents agreeing or strongly agreeing with the statements.

The statement "E-payment systems make my daily tasks easier" received the highest mean score (M = 4.57, SD = 0.63). This reflects the system's practical utility, with 63.6% strongly agreeing and 29.8% agreeing. Users value the convenience of e-payments in streamlining daily activities such as shopping, bill payments, and transportation. Similarly, the statement "Using an e-payment system is the trend for the modern lifestyle" scored a mean of 4.57 (SD = 0.62), with 63.2% strongly agreeing and 31.6% agreeing. This highlights the alignment of e-payments with contemporary lifestyle trends, where technology integration is seen as essential.

The ease of use of e-payment systems is also evident in the statement "E-payment systems are easy to use," which scored a mean of 4.56 (SD = 0.65). The high agreement (64.0% strongly agreeing and 28.9% agreeing) indicates that user-friendly interfaces and straightforward processes significantly contribute to the adoption of e-payment systems. Future intentions to continue or increase usage are strong, as shown in the statements "I plan to continue using e-payment systems in the future" (M = 4.56, SD = 0.64) and "I plan to use e-payment systems more frequently in the future" (M = 4.50, SD = 0.69). These results suggest high satisfaction with current experiences and a positive outlook on continued adoption.

Overall, the findings underscore the widespread acceptance and integration of e-payment systems into users' daily lives. The perception of ease of use, convenience, and alignment with modern trends suggests that these systems have successfully met user expectations. To sustain this positive trajectory, e-payment providers should focus on maintaining simplicity and efficiency while promoting the modern image of their services.

Table 4.9
Descriptive analysis of use of e-payment in Klang Valley

No.	Statement	1	2	3	4	5	*M*	SD
1.	E-payment system is easy to use.	0	2 (0.9)	14 (6.1)	66 (28.9)	146 (64.0)	4.56	0.65
2.	I plan to use e-payment system more frequently in the future.	0	2 (0.9)	19 (8.3)	69 (30.3)	138 (60.5)	4.50	0.69
3.	E-payment systems carry out my daily tasks easier.	0	1 (0.4)	14 (6.1)	68 (29.8)	145 (63.6)	4.57	0.63
4.	Using e-payment system is the trend for the modern lifestyle.	0	2 (0.9)	10 (4.4)	72 (31.6)	144 (63.2)	4.57	0.62
5.	I plan to continue to use e-payment system in the future.	0	1 (0.4)	16 (7.0)	65 (28.5)	146 (64.0)	4.56	0.64
	Overall						**4.55**	**0.59**

Notes: Strongly Disagree (1), Disagree (2), Neutral (3), Agree (4), Strongly Agree (5)

4.9 Reliability Analysis

Table 4.10 presents the reliability analysis for the variables measured in this study: convenience, security, speed, social influence, and use of e-payment systems. The Cronbach's alpha (a) values for all variables exceed the commonly accepted threshold of 0.70, indicating high internal consistency and reliability for the measurement scales.

Use of e-payment demonstrates the highest reliability, with a Cronbach's alpha of a = 0.95. This suggests that the items measuring this construct consistently capture the intended concept, reflecting strong confidence in the scale's reliability. Security (a = 0.93) and speed (a = 0.91) also exhibit excellent reliability, indicating that the scales for these constructs are robust and effectively assess users' perceptions of e-payment system security and efficiency. The high reliability for security is particularly significant, as user trust is often critical in adopting technological systems. Similarly, speed, as a performance indicator, aligns well with user expectations for fast and seamless transactions.

Convenience and social influence both have a Cronbach's alpha of a = 0.90, indicating high reliability. These findings highlight the strong alignment of items within these constructs, capturing users' views on ease of use and the influence of external factors such as family, friends, and media on e-payment adoption.

Overall, the high reliability scores for all variables underscore the validity of the measurement tools used in this study. The consistency of these scales ensures that the findings accurately reflect users' perceptions of e-payment systems, supporting the robustness of the study's conclusions and providing a solid foundation for further analysis of the factors influencing e-payment adoption in the Klang Valley.

Table 4.10
Reliability Test

Variables	Total Item	Reliability (a)
Convenience	0.90	5
Security	0.93	5
Speed	0.91	5
Social influence	0.90	5
Use of e-payment	0.95	5

4.10 Normality Test

The results presented in Table 4.11 confirm that all variables—convenience, security, speed, social influence, and use of e-payment—exhibit normal distributions. This conclusion is supported by skewness and kurtosis values falling within the acceptable range of -2 to +2 (George & Mallery, 2003). This normality indicates that the data are well-suited for parametric analyses. Furthermore, comparison of the mean and the 5% trimmed mean reveals no deviations exceeding 1 unit, suggesting that the results are not significantly affected by extreme values. This reinforces the reliability of the mean as a measure of central tendency.

Regarding skewness, most variables demonstrate slight negative skewness, suggesting that respondents generally provided higher ratings. Convenience exhibits the most negative skewness (-1.27), indicating a strong inclination towards higher scores. Similarly, use of e-payment and speed also show substantial negative skewness (-1.18 and -1.08, respectively), reflecting positive perceptions of these attributes among users. Conversely, security and social influence exhibit relatively lower skewness (-0.46 and -0.59, respectively), suggesting a more balanced distribution of responses while still slightly favouring higher ratings.

The kurtosis values reveal varied characteristics of the data. For example, convenience and use of e-payment have kurtosis values near 1, suggesting moderately

peaked distributions, whereas security and social influence have values closer to 0, reflecting flatter distributions. These variations in kurtosis indicate subtle differences in response patterns across the variables, with some demonstrating more concentrated agreement and others more diverse opinions.

Concerning variability, social influence has the highest standard deviation (0.97), reflecting the greatest diversity in responses, which may indicate mixed perceptions regarding the role of social factors in influencing e-payment usage. Conversely, use of e-payment exhibits the lowest variability (standard deviation = 0.59), suggesting consistent positive responses, potentially indicating strong user acceptance and trust in e-payment systems.

In summary, the results demonstrate a favorable response trend, particularly for variables such as convenience, speed, and use of e-payment, where higher scores are prevalent. These findings not only affirm the suitability of the data for further parametric tests but also highlight positive perceptions of the key factors influencing e-payment adoption in the Klang Valley.

Table 4.11
Normality Test

Variables	Mean	5% Trimmed Mean	Variance	Standard Deviation	Skewness	Kurtosis
Convenience	4.57	4.63	0.34	0.85	-1.27	1.00
Security	3.94	3.98	0.67	0.82	-0.46	-0.07
Speed	4.47	4.53	0.41	0.64	-1.08	0.41
Social influence	3.76	3.82	0.95	0.97	-0.59	-0.12
Use of e-payment	4.55	4.61	0.35	0.59	-1.18	1.01

4.11 Pearson Correlation Analysis

Table 4.12 presents the Pearson correlation analysis assessing the relationships between convenience, security, and speed and customers' e-payment usage in Klang Valley. The table details the significance level (Sig.) and Pearson correlation coefficients, along with their interpretations. According to Pallant (2016), correlation coefficients between 0.10 and 0.29 are weak, those between 0.30 and 0.49 are moderate, and those between 0.50 and 1.0 are strong. The correlation coefficient ranges from -1

to +1, where 0 indicates no correlation, +1 signifies a perfect positive correlation, and -1 signifies a perfect negative correlation.

The Pearson correlation analysis highlights significant positive relationships between convenience, security, and speed and e-payment use among customers in Klang Valley. All correlations are statistically significant at the 0.01 level ($p = 0.00$), indicating that these factors influence the adoption and frequency of e-payment usage.

Among the variables, speed exhibits the strongest positive correlation with e-payment use ($r = 0.85$), suggesting customers highly value the efficiency and time-saving benefits of e-payment systems. This underscores the importance of swift transaction processing to enhance customer satisfaction and encourage frequent use. Convenience closely follows, with a strong positive correlation ($r = 0.83$), indicating that the ease of use and accessibility of e-payment systems significantly drive their adoption and reinforcing the need for user-friendly platforms.

While the correlation between security and e-payment usage is weaker in comparison ($r = 0.46$) and followed by social influence and e-payment is the weakest ($r = 0.43$), both remain statistically significant and positive. This suggests that while security and social influence are important considerations, their influence on usage is less pronounced than that of convenience and speed. Customers may prioritise ease and efficiency over security features, particularly if the e-payment system is perceived as secure enough for daily use.

Overall, these results suggest that service providers aiming to increase customer adoption and usage rates should prioritise enhancing the speed and convenience of e-payment systems. At the same time, ensuring adequate security measures remains essential to maintaining user trust, even though it may not be the primary driver of usage. These insights provide a clear direction for optimising e-payment systems to meet customer expectations in Klang Valley.

Table 4.12
Pearson Correlation Analysis

Correlations

		CONVENIENCE	SECURITY	SPEED	SOCIAL INFLUENCE	USE OF E-PAYMENT
CONVENIENCE	Pearson Correlation	1	.474**	.848**	.409**	.831**
	Sig. (2-tailed)		.000	.000	.000	.000
	N	228	228	228	228	228
	Pearson Correlation	.474**	1	.508**	.444**	.465**
	Sig. (2-tailed)	.000		.000	.000	.000
	N	228	228	228	228	228
SPEED	Pearson Correlation	.848**	.508**	1	.423**	.847**
	Sig. (2-tailed)	.000	.000		.000	.000
	N	228	228	228	228	228
INFLUENCE	Pearson Correlation	.409**	.444**	.423**	1	.427**
	Sig. (2-tailed)	.000	.000	.000		.000
	N	228	228	228	228	228
PAYMENT	Pearson Correlation	.831**	.465**	.847**	.427**	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	228	228	228	228	228

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

Variables	**Use of e-payment**
	Pearson Correlation
Convenience	0.83
Security	0.46
Speed	0.85
Social Influence	0.43

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

4.12 Multiple Regression Analysis

Table 4.13 presents the metrics used to evaluate multicollinearity, as outlined by Pallant (2007). Tolerance reflects the degree to which the variance of an independent variable is not explained by other independent variables (Pallant, 2007). In this investigation, tolerance values ranged from 0.27 to 0.75, exceeding the minimum threshold of 0.20. These findings suggest no significant multicollinearity, further supported by Variance Inflation Factor (VIF) values between 1.34 and 3.78, below the established threshold of 5. As suggested by Hair et al. (2011), multicollinearity is typically a concern when VIF exceeds 5 and tolerance drops below 0.20. Thus, the study's results indicate that multicollinearity is not a significant issue.

Table 4.13
Multicollinearity Analysis

	Collinearity Statistics	
	Tolerance	**VIF**
Convenience	0.28	3.61
Security	0.68	1.48
Speed	0.27	3.78
Social Influence	0.75	1.34

4.12.1 Model Summary

Table 4.14 presents a multiple regression analysis of the impact of convenience, security, speed, and social influence on customers' e-payment usage in Klang Valley. The results indicate that these factors collectively explain 76% of the variance in predicting e-payment usage ($R2 = 0.76$).

The remaining 24% of the variance represents unexplained variance or error variance, suggesting that factors beyond those included in the model also influence e-payment adoption in Klang Valley. Ajzen (1991) argues that behavioral decisions are shaped by multiple psychological and environmental factors, some of which a single model may not account for. Similarly, Venkatesh, Thong, and Xu (2012) emphasize the crucial role of factors like trust, habit, and facilitating conditions in technology adoption, which could explain the unexplained variance. Additionally, Alalwan et al. (2017) found that demographic differences, perceived risk, and government policies

significantly impact users' willingness to adopt digital payment systems. Furthermore, Hair et al. (2019) highlights that measurement errors and natural randomness in consumer behavior also contribute to the unexplained variance. Thus, while the model effectively explains 76% of the variance, the remaining 24% suggests the need to explore additional influencing factors to enhance the model's predictive power.

Table 4.14
Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.87	0.76	0.76	0.29

4.12.2 ANOVA

The ANOVA table summarizes the results of a multiple linear regression analysis predicting customers' e-payment usage in Klang Valley. The regression indicates that the model significantly accounts for the variability in the dependent variable. With an F-statistic of 181.88 and a p-value of 0.00, the model is statistically significant. Overall, the ANOVA results suggest that the regression model is highly significant in explaining the factors predicting customers' e-payment usage in Klang Valley.

Table 4.15
ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	60.23	4	15.06	181.88	0.00
	Residual	18.46	224	0.083		
	Total	78.69	228			

a. Dependent Variable: USE OF E-PAYMENT
b. Predictors: (Constant), SOCIAL INFLUENCE, CONVENIENCE, SECURITY, SPEED

4.12.3 Summary of Multiple Regression Analysis

Table 4.16 presents a multiple regression analysis examining the influence of convenience, security, and speed on customers' usage of e-payment systems in the Klang Valley. The findings indicate that the independent variables exhibit varying levels of significance in predicting e-payment usage.

Convenience has an unstandardized B value of 0.40, meaning that for each unit increase in convenience, e-payment system usage is expected to increase by 0.40, holding other factors constant. The standardized beta coefficient of 0.40 indicates a moderate effect, suggesting that convenience significantly influences customers' adoption of e-payment systems. The t-value of 6.34 ($p = 0.00$) further confirms the statistical significance of this effect, highlighting the importance of ensuring that e-payment systems are easy to use, accessible, and user-friendly to encourage higher adoption rates.

Security, on the other hand, has an unstandardized B value of 0.05, indicating a minimal effect on e-payment system usage; each unit increase in security contributes only 0.05 to e-payment usage when other factors are held constant. The standardized beta coefficient of 0.07 suggests a very weak effect, and the t-value of 0.18 ($p = 0.86$) indicates that this effect is not statistically significant. This implies that, in this context, customers may not perceive security as a decisive factor influencing their choice to use e-payment systems.

Speed shows an unstandardized B value of 0.45, meaning that for each unit increase in speed, e-payment usage is expected to increase by 0.45, holding other factors constant. The standardized beta coefficient of 0.50 indicates a strong effect, demonstrating that speed is the most influential factor in this analysis. The t-value of 7.73 ($p = 0.00$) strongly supports the statistical significance of this relationship, underscoring the critical role of fast transaction processing in encouraging the use of e-payment systems, as customers prioritize efficiency in their payment experiences.

Social influence also has an unstandardized B value of 0.04, indicating a minimal effect on the usage of e-payment systems; each unit increase in social influence contributes only 0.04 to e-payment usage when other factors are held constant. The standardized beta coefficient of 0.06 suggests a very weak effect, and the t-value of 1.55 ($p = 0.12$) indicates that this effect is not statistically significant. This implies that, in this context, customers may not perceive social influence as a decisive factor influencing their choice to use e-payment systems.

In conclusion, both convenience and speed significantly impact the usage of e-payment systems in the Klang Valley, with speed having the greater influence. However, security and social influence do not appear to significantly affect usage in this study. These results underscore the importance of enhancing user-friendly features and transaction efficiency to drive e-payment adoption, while further research may be

needed to explore why perceptions of security and social influence did not play a larger role.

Table 4.16
Summary of Multiple Regression Analysis

Variable	Unstandardized B	Standardized Beta	*t*	*p*
Convenience	0.40	0.40	6.34	0.00
Security	0.05	0.07	0.18	0.86
Speed	0.45	0.50	7.73	0.00
Social Influence	0.04	0.06	1.55	0.12

$p < .05$ (significant at the 0.01 level, 2-tailed)

4.13 Mediation Analysis

Table 4.17 examines the indirect effects of social influence as a mediator in the relationships between security and convenience with e-payment use in the Klang Valley. Both mediation models show statistically significant indirect effects, as indicated by their p-values ($p = 0.00$) and 95% confidence intervals (CIs) excluding zero.

In Model 1, mediation analysis reveals that social influence significantly mediates the relationship between security and e-payment usage ($b = 0.12$, $SE = 0.03$, 95% CI [0.06, 0.19]). This suggests that individuals who perceive e-payment systems as secure are more likely to be influenced by social factors, such as family, friends, or media, encouraging greater adoption and use. This underscores the importance of promoting social endorsements and positive perceptions of security features to enhance user confidence.

In Model 2, social influence also mediates the relationship between convenience and e-payment usage, although the indirect effect is smaller ($b = 0.04$, $SE = 0.02$, 95% CI [0.01, 0.08]) compared to Model 1. This indicates that while convenience directly drives e-payment usage, its impact is amplified by social influences. Users who find e-payment systems convenient are more likely to adopt them when their use is encouraged or normalized within their social circles.

Together, these results emphasize the critical role of social influence in enhancing the impact of both security and convenience on e-payment adoption. Service providers could leverage this by promoting e-payment systems through targeted social

campaigns, testimonials, and endorsements, thereby maximizing their appeal and usage among customers.

Table 4.17
Indirect Effect in Mediation Analysis

Model	**Indirect Effect**	**Effect *(b)***	**SE**	*p*	*95% **CI***
1	Path *a* x *b* (Social influence —>• usage of e-payment via security)	012	003	0.00	[0.06,0.19]
2	*Pathaxb* (Social influence —>• usage of e-payment via convenience)	0.04	0.02	0.00	[0.01,0.08]

4.14 Justification for the Exclusion of Speed as a Mediating Variable

While this study's mediation analysis enhances the understanding of e-payment usage, we acknowledge that the mediating role of social influence was not examined for all independent variables. Specifically, the mediating effect of social influence on the relationship between speed and e-payment usage was not tested.

This was a deliberate methodological decision based on the theoretical positioning of transaction speed within the research framework. Speed represents a system performance attribute that directly influences users' perceptions of efficiency and usability. Prior literature commonly models speed as a direct predictor of usage behavior rather than as a construct that operates through social or normative mechanisms. In contrast, social influence reflects a behavioral and psychological process that is theoretically more suitable as a mediator for perceptual and trust-related factors such as convenience and security.

Furthermore, testing mediation for transaction speed may introduce conceptual overlap between system attributes and behavioral mechanisms, potentially reducing the clarity and interpretability of the model. To maintain theoretical parsimony and consistency with established technology acceptance frameworks, mediation analysis was therefore limited to relationships where social influence is conceptually justified as a transmission mechanism.

Nevertheless, examining the mediating role of social influence between transaction speed and e-payment usage could provide additional insights. Future studies

are encouraged to explore this relationship for a more comprehensive assessment of the proposed framework.

Although transaction speed is an important determinant of e-payment usage, this study does not conceptualize speed as a mediating variable. Transaction speed represents a system performance attribute that directly affects efficiency and usability, rather than a behavioral or normative mechanism that transmits influence between variables.

Existing technology adoption literature commonly models transaction speed as a direct predictor of usage behavior rather than as a mediator (Suki et al., 2020; Tan et al., 2020). In contrast, social influence operates at the psychological and social level, making it theoretically appropriate as a mediating construct. Including transaction speed as a mediator could introduce conceptual overlap and reduce theoretical clarity. Therefore, to maintain model parsimony and alignment with established theory, transaction speed was examined only for its direct effect on e-payment usage.

4.15 Summary of Major Findings

This study's findings offer valuable insights into the drivers of e-payment usage in Klang Valley. A key takeaway is that convenience significantly influences customers' e-payment adoption. With a p-value of 0.00, the null hypothesis (H0) was rejected, confirming that convenience positively impacts customer usage. This suggests that users are more likely to embrace e-payment when they perceive it as easy to use, accessible, and hassle-free. The seamless experience of quick transactions without cash or cards makes e-payment an attractive option.

Similarly, speed was another major factor contributing to e-payment usage ($p = 0.00$), leading to the rejection of H0. This indicates that users prefer digital payment methods that allow for fast and efficient transactions. In today's fast-paced world, a payment system that processes transactions almost instantly is a strong motivator for e-payment usage. Providers should continue to enhance transaction speed and minimise technical issues that could slow down the process.

However, the study also revealed that security does not significantly influence e-payment usage ($p = 0.86$), resulting in the failure to reject H0. While security is important, it is not the primary driver of users' decisions. One possible explanation is that people may already trust the security measures implemented by e-payment

providers or assume that digital payment platforms are inherently secure. As a result, users may focus more on convenience and speed rather than security risks. While security should not be overlooked, improving user experience might have a stronger impact on customer usage rates than simply reinforcing security features.

The study also found that social influence does not significantly affect e-payment usage ($p = 0.12$), leading to the failure to reject H0. This means that recommendations from friends, family, or social networks do not strongly impact e-payment adoption. Unlike other consumer behaviours where social influence plays a key role, e-payment usage may be more of a personal choice driven by individual needs rather than peer pressure or social trends. However, marketing strategies that leverage influencer endorsements, referral programmes, and targeted promotions could still help raise awareness and encourage e-payment usage.

This study also reveals an interesting mediating role of social influence on the factors influencing customers' e-payment usage in Klang Valley. The results show that social influence significantly mediates the relationship between both convenience and security with e-payment usage, as the null hypotheses (H0) were rejected ($p = 0.00$ in both cases). This suggests that while convenience and security are important factors, social influence strengthens their impact on users' decision-making.

Regarding the relationship between convenience and e-payment usage, the results indicate that social influence shapes how users perceive the ease of using e-payment. Seeing friends, family, or peers conveniently using e-payment increases the likelihood of adoption. Even if an e-payment is easy to use, observing others using and recommending it can boost a person's confidence.

Similarly, regarding the relationship between security and e-payment usage, the findings suggest that while security alone did not show a direct impact on e-payment usage in previous analyses, social influence affects how security concerns are perceived. Users may feel reassured about the safety of e-payment when they see others using it without issues. Even if someone is hesitant due to security concerns, hearing positive experiences from trusted sources can encourage them to try it.

These findings highlight the importance of social influence in e-payment usage. While convenience and security are key, the encouragement and experiences of others can significantly influence new users. E-payment providers and businesses could benefit from strategies that leverage word-of-mouth marketing, user testimonials, and community-driven promotions to build trust and encourage wider adoption.

In conclusion, this study highlights that convenience and speed are the strongest factors influencing customers' e-payment usage, while security and social influence also play a role. To further increase usage rates, e-payment providers should prioritise enhancing user experience by making transactions as seamless and efficient as possible. At the same time, maintaining strong security measures and educating users can help build long-term trust. Future research could explore how different demographics perceive security risks and whether social influence becomes more relevant in specific user segments. By understanding these dynamics, businesses and policymakers can develop better strategies to promote digital payment adoption and create a more seamless cashless ecosystem.

Table 4.18
Discussion of Major Findings

NO.	IV	HYPOTHESIS	FINDINGS
1.	Convenience	HO: There is no significant relationship between convenience and customers' usage of e-payment in Klang Valley. HI: There is a significant positive relationship between convenience and customers' usage of e-payment in Klang Valley.	a-0.05 p-value = 0.00 Reject HO There is a significant relationship Supported
2.	Security	HO: There is no significant relationship between security and customers' usage of e-payment in Klang Valley. H2: There is a significant positive relationship between security and customers' usage of e-payment in Klang Valley.	a-0.05 p-value = 0.86 Reject H2 There is no significant relationship
3.	Speed	HO: There is no significant relationship between speed and customers' usage of e-payment in Klang Valley. H3: There is a significant positive relationship between speed and customers' usage of e-payment in Klang Valley.	a-0.05 p-value = 0.00 Reject HO There is a significant relationship Supported

NO.	IV	HYPOTHESIS	FINDINGS
	Social Influence	HO: There is no significant relationship between social influence and customers' usage of e-payment in Klang Valley. H4: There is a significant relationship between social influence and customers' usage of e-payment in Klang Valley.	a-**0.05** p-value = 0.12 Reject H4 There is no significant relationship Rejected
	Social Influence as the mediator between convenience and customers' usage of e-payment	HO: Social influence does not mediate the relationship between convenience and customers' usage of e-payment in Klang Valley. H4a: Social influence mediates the relationship between convenience and customers' usage of e-payment in Klang Valley.	p-value = 0.00 Reject HO There is a significant relationship Supported
	Social Influence as the mediator between security and customers' usage of e-payment	HO: Social influence does not mediate the relationship between security and customers' usage of e-payment in Klang Valley. H4b: Social influence mediates the relationship between security and customers' usage of e-payment in Klang Valley.	p-value = 0.00 Reject HO There is a significant relationship Supported

CHAPTER 5
DISCUSSION AND RECOMMENDATION

5.1 Introduction

This chapter presents a comprehensive analysis of the research findings, interpreting the statistical results in relation to the study's objectives and existing literature. The purpose is to evaluate the implications of key findings, emphasizing their significance in understanding E-payment. Furthermore, this chapter acknowledges the study's limitations, providing insights into potential challenges and constraints that may have influenced the results. Finally, based on the findings, practical recommendations are proposed for stakeholders, including businesses, policymakers, and future researchers, to optimize e-payment systems and enhance digital payment experiences.

5.2 Discussion

5.2.1 Research Objective 1

The research objective was to examine the relationship between convenience and customers' e-payment usage in Klang Valley. The findings indicate a statistically significant relationship, highlighting that convenience strongly correlates with e-payment usage among customers in Klang Valley. With a p-value of 0.00, well below the significance threshold of 0.05, the null hypothesis (Ho) can be confidently rejected, indicating that convenience is a major driver influencing consumers' decisions to adopt e-payment solutions.

The correlation between convenience and e-payment usage is strong at 0.83, meaning that the easier an e-payment system is to use, the more people will adopt it. Consumers appreciate platforms that are simple, widely accepted, and compatible with multiple devices. In Klang Valley, where digital transactions are becoming the norm, users want payment options that fit seamlessly into their daily lives, such as scanning a QR code, tapping a card, or making online purchases without unnecessary steps. This high correlation suggests that businesses and financial institutions should focus on

maximizing the user-friendliness and accessibility of e-payments to encourage adoption.

Convenience stands out as the most highly rated factor, with a mean score of 4.57. This suggests that users strongly believe e-payment systems simplify transactions by reducing the need for cash or physical store visits. In a fast-paced urban area like Klang Valley, where efficiency is key, users value the ability to make payments anytime, anywhere, with a few taps on their smartphones. This high rating indicates that businesses and financial institutions have successfully designed e-payment platforms that integrate into users' daily routines, making transactions more effortless.

Existing research supports the significant relationship between convenience and e-payment usage among customers in Klang Valley. For instance, a study by Tan et al. (2020) investigated factors influencing e-payment adoption in Malaysia and found that convenience significantly impacts users' decisions. The study highlighted that user prefer e-payment platforms that are easy to navigate, widely accepted, and compatible with multiple devices, aligning with the strong correlation ($r = 0.83$) and high mean score (4.57) for convenience.

In today's fast-paced digital world, people expect transactions to be quick, seamless, and hassle-free. E-payment systems that are easy to use, require minimal effort, and integrate smoothly into daily life are naturally more appealing. If making a payment is as simple as tapping a phone or scanning a QR code, people are more likely to adopt the technology. Conversely, if a system is complicated, time-consuming, or unreliable, customers may hesitate to use it, even if it offers other benefits.

The strong link between convenience and e-payment adoption aligns with technology adoption theories such as the Technology Acceptance Model (TAM) and the Unified Theory of Acceptance and Use of Technology (UTAUT). Both models emphasize that ease of use is critical in determining whether individuals adopt new technology. When an e-payment system removes friction from the transaction process, users feel more comfortable and confident using it, leading to higher adoption rates.

For businesses and policymakers in Klang Valley, these findings provide valuable insights. To encourage greater e-payment usage, service providers should focus on improving the user experience by offering intuitive interfaces, fast transaction processing, and widespread merchant acceptance. Additionally, addressing concerns such as network reliability, security, and customer support can further enhance convenience, ensuring a smooth and worry-free experience.

Ultimately, the success of e-payment adoption hinges on how effortlessly customers can integrate it into their daily routines. As digital payment solutions evolve, ensuring maximum convenience will be key to driving widespread usage and acceptance in Klang Valley and beyond.

5.2.2 Research Objective 2

Based on the research objective to examine the relationship between security and customers' usage of e-payment in Klang Valley, the findings reveal an interesting insight. The hypothesis test results indicate that security does not significantly impact e-payment usage. With a p-value of 0.86, exceeding the significance level (a = 0.05), the researcher fails to reject the null hypothesis (Ho). This suggests no statistically significant relationship between security and customers' decisions to use e-payment services in Klang Valley.

Security, while still significant, has a moderate correlation of 0.46 with e-payment usage. This suggests that while security is important, it may not be the primary factor driving users' decisions to adopt digital payments. Many users may assume that financial institutions and payment providers have already implemented adequate security measures, alleviating concerns about fraud or data breaches. However, for those who remain skeptical, security concerns might still act as a barrier to adoption. This finding implies that while improving security is necessary, it should be balanced with ease of use; overcomplicating security features could discourage users.

Security received a lower rating compared to convenience and speed, with a mean score of 3.94. While users acknowledge the importance of secure transactions, this score suggests that some may still have concerns about fraud, data privacy, or unauthorized access to their financial information. Many users may assume that security measures are already in place but might hesitate to fully trust digital payments if they have encountered security issues. This finding emphasizes the need for e-payment providers to strengthen security measures while ensuring they do not complicate the payment process. Transparency about security features, such as encryption and fraud protection, can help build greater trust among users.

These findings are consistent with existing literature. Rahman et al. (2021) found that security and privacy concerns have a lesser impact on the adoption of e-payment systems among small and medium-sized enterprises (SMEs) in Malaysia,

concluding that ease of use and perceived usefulness had a greater influence on adoption decisions. Similarly, Lim et al. (2020) reported that perceived security was not a significant factor in influencing the adoption of e-wallets among Malaysian youth, with factors such as convenience, promotions, and social influence playing a larger role in their decision-making.

While security is often considered a primary concern regarding e-payments, with worries about fraud, hacking, or unauthorized transactions, this study's findings suggest that security does not significantly influence e-payment usage in Klang Valley. The results indicate that the relationship between security and e-payment usage is not statistically significant, implying that security concerns do not strongly influence the decision to use digital payments.

This might initially seem unexpected, but a closer look at consumer behavior reveals a rationale. Many e-payment users are already familiar with the technology and have used it without major security issues. For them, security is a background factor, not necessarily the main reason they use or avoid e-payments. Banks, fintech companies, and e-wallet providers have implemented robust security measures like two-factor authentication, fraud alerts, and encrypted transactions. Consequently, many users may not actively consider security when making payments, assuming it is already addressed, and instead focus on speed, ease of use, and acceptance at their preferred stores.

Another reason security might not be a major deciding factor is that people prioritize convenience. In today's fast-paced world, customers want quick, seamless transactions. If an e-payment method is easy to use and widely accepted, they will likely choose it, even without complete certainty about its security features. The prevalence of saving card details on e-commerce websites or using contactless payments on phones illustrates how convenience often outweighs security concerns, especially in the absence of personal experience with fraud or data breaches.

This also suggests that factors like accessibility, ease of use, and rewards (such as cashback or discounts) might be stronger motivators for e-payment adoption. To encourage greater e-payment adoption in Klang Valley, businesses and financial institutions should focus on streamlining transactions rather than solely emphasizing security features.

However, security should not be neglected. While it may not currently be a key factor in user adoption, a major security breach or a rise in fraud cases could quickly

change that. Service providers should continue strengthening their security systems while also educating users on protecting themselves. Simple measures like reminding users to enable two-factor authentication, avoid suspicious links, and regularly check their transaction history can help maintain trust in digital payments.

In conclusion, while security remains important, this study indicates that it is not a major deciding factor for e-payment adoption in Klang Valley. Users prioritize ease of use and convenience. For businesses and policymakers aiming to promote cashless transactions, prioritizing smoother, faster, and more widely accepted e-payments over solely focusing on security concerns is crucial. Ultimately, the best e-payment system is one that users are eager to use, not just one that is the safest.

5.2.3 Research Objective 3

This study also examined the relationship between speed and customers' e-payment usage in Klang Valley, and the findings strongly confirm that speed significantly influences consumer behavior. The results show a statistically significant relationship between transaction speed and e-payment adoption ($p = 0.00$), well below the accepted threshold of 0.05, indicating that faster e-payment systems are more likely to be used in Klang Valley.

One of the strongest findings from this analysis is the relationship between speed and e-payment usage, with a correlation of 0.85, suggesting that faster, more efficient e-payment systems are more likely to be used. In fast-paced Klang Valley, people value time-saving transactions. Whether paying for groceries, booking a ride, or settling bills, customers prefer quick, seamless, and hassle-free payment methods. Users may avoid e-payment systems that lag, require multiple verification steps, or experience frequent downtime, highlighting the importance of optimizing transaction speed to encourage wider adoption.

The speed of e-payments also received a high rating, with a mean score of 4.47, confirming that users prioritize fast transactions when choosing digital payment methods. Whether tapping a card at a train station, scanning a QR code at a restaurant, or making an online purchase, users appreciate quick payment processing. Delays, such as slow loading times or system errors, can be frustrating and may discourage e-payment use. The high mean score highlights the need for continuous improvements in

transaction speed to maintain user satisfaction and encourage more widespread adoption.

These findings align with previous research that underscores the significance of transaction speed in e-payment adoption in Malaysia. For instance, Suki et al. (2020) found that transaction speed significantly impacts e-wallet adoption among Generation Y in Malaysia, concluding that faster transaction speeds lead to higher user satisfaction and adoption rates. Similarly, Tan et al. (2018) identified transaction speed as a critical factor influencing consumers' adoption of e-payment systems in Malaysia, suggesting that efficient and quick transactions encourage more users to embrace digital payment methods.

The importance of speed in digital payments cannot be overstated, especially in a fast-paced urban area like Klang Valley, where convenience and efficiency matter in everyday transactions. When choosing a payment method, people want it to be quick, seamless, and hassle-free. Whether paying for their morning coffee, booking a ride, or shopping online, the expectation is that digital payments should be processed instantly. Users may find e-payment systems that experience delays frustrating and opt for more reliable alternatives.

These findings align with the research objective by confirming that speed is a key factor influencing e-payment service usage, not merely a minor convenience. The significant relationship suggests that service providers seeking higher adoption rates must ensure real-time transactions. Slow or unreliable payment systems deter users, while faster, smoother transactions encourage repeat usage and greater trust in digital payment solutions.

Speed is crucial because consumers expect instant processing from digital transactions. Unlike cash payments, which require counting money and waiting for change, or card payments that may involve PIN entry and bank processing time, e-payments promise instant processing. Users may hesitate to rely on e-payments if network delays, slow app performance, or transaction failures prevent this. Conversely, quick, frictionless payments inspire confidence in regular e-payment service use.

This study also suggests that improving transaction speed could further advance Klang Valley toward becoming a fully cashless society. Many people still carry cash as a backup due to concerns about delays or failures when using e-payment. Businesses and financial service providers prioritizing faster, more reliable transactions could encourage more consumers to transition to digital payments as their primary method.

In conclusion, the research objective was to examine the relationship between speed and customers' e-payment usage, and the findings demonstrate that speed significantly impacts e-payment adoption. For businesses, banks, and fintech companies in Klang Valley, prioritizing transaction speed is essential. A faster, smoother payment experience increases customer usage and trust in e-payment systems, driving greater adoption and convenience.

5.2.4 Research Objective 4

This study examined whether social influence mediates the relationship between convenience and customer e-payment usage in Klang Valley. The findings confirm the significant role of social influence in shaping consumer behaviour, as evidenced by a p-value of 0.00, which is below the 0.05 threshold, leading to the rejection of the null hypothesis (Ho). This indicates that social influence mediates the relationship between convenience and the adoption of e-payment systems, suggesting that consumers' decisions to use e-payment services are influenced not only by perceived convenience but also by their social environment.

These findings align with previous research highlighting the mediating role of social influence in the relationship between convenience and e-payment adoption. For example, Loh (2020) found that social influence significantly impacts the adoption of e-payment systems in Malaysia, suggesting that individuals are more likely to adopt e-payment solutions when they observe their peers using them. Similarly, Koo et al. (2020) found that social influence plays a significant role in shaping consumer behaviour regarding e-wallet adoption among Malaysian youth, indicating that individuals are more likely to use e-payment services when they perceive endorsement from their social circle.

This finding is consistent with prior studies suggesting that users in highly urbanised regions such as the Klang Valley are more familiar with and receptive to e-payment systems (Tan et al., 2020). Individuals often observe the behaviour of their peers, family, and social media influencers before adopting new payment methods, such as mobile banking, e-wallets, or contactless payments. Positive experiences and endorsements within one's social circle can encourage adoption, while scepticism or a preference for traditional cash transactions can deter it.

Social influence is particularly salient in today's digital environment, where recommendations and shared experiences are readily available. Endorsements from influencers or word-of-mouth recommendations from trusted contacts can significantly impact consumer choices. This suggests that convenience alone may not suffice to drive adoption; the perception that others use and trust e-payment services can provide the necessary impetus for adoption.

These findings have implications for businesses, banks, and fintech companies in Klang Valley. To encourage greater e-payment adoption, these entities should focus not only on enhancing the convenience of transactions but also on leveraging social influence as a marketing tool. Strategies such as referral programmes, influencer partnerships, and community-driven campaigns can foster a network effect, encouraging adoption through observation.

Furthermore, increased e-payment adoption could create a ripple effect, accelerating the shift toward a cashless society. As digital payments become the norm, they may become even more attractive to potential adopters. Businesses and financial institutions should therefore actively promote positive perceptions of e-payments, emphasising both their convenience and social acceptance.

In conclusion, this study demonstrates that social influence mediates the relationship between convenience and e-payment usage in Klang Valley. While convenience remains an important factor, social influence plays a crucial role in shaping consumer decisions. Businesses and policymakers seeking to increase e-payment adoption should consider strategies that leverage peer influence, community engagement, and social proof to drive widespread usage.

5.2.5 Research Objective 5

This study examined whether social influence mediates the relationship between security and customers' e-payment usage in Klang Valley, and the findings reveal a significant relationship. With a p-value of 0.00, well below the 0.05 threshold, we reject the null hypothesis (Ho). This confirms that social influence mediates the relationship between security and e-payment adoption. In other words, while security remains critical in determining e-payment adoption, decisions are also shaped by social influence.

The mediating role of social influence aligns with prior research. For instance, Koo et al. (2020) found that social influence plays a crucial role in shaping consumer behavior toward e-wallet usage among Malaysian youths, suggesting that individuals are more inclined to adopt e-payment systems when they observe their peers using them. This confirms that social influence can mediate the relationship between security perceptions and e-payment adoption. Similarly, Tan et al. (2018) found that social influence significantly shapes consumer behavior regarding e-payment adoption in Malaysia, concluding that individuals are more likely to use e-payment services when they perceive endorsement from their social circle, further supporting the mediating role of social influence between security perceptions and e-payment usage.

Security concerns are one of the biggest barriers to digital payment adoption. Many people worry about fraud, hacking, and identity theft, making them hesitant to fully embrace e-payment systems. However, this study suggests that social influence plays a key role in addressing those concerns. Observing peers, family, or trusted figures confidently using e-payment services without security issues increases the likelihood of feeling reassured and willing to adopt the technology. Essentially, trust in security is reinforced by social interactions and shared experiences.

In today's digital world, recommendations from friends, online reviews, and social media discussions significantly impact consumer perceptions of security. For example, positive testimonials from friends or influencers can ease concerns about an e-wallet's safety. Conversely, negative experiences about security breaches can create widespread hesitation, highlighting the power of social influence in shaping security perceptions of e-payment systems.

These findings have important implications for businesses, banks, and fintech companies aiming to promote e-payment adoption in Klang Valley. While investing in robust security measures is essential, focusing on how these features are communicated and perceived is equally important. Encouraging satisfied customers to share their positive experiences, leveraging testimonials from influencers, and fostering community discussions around secure digital transactions can all contribute to a stronger sense of trust in e-payment systems.

Moreover, as more people in Klang Valley adopt e-payment services and share their experiences, a ripple effect is created. Increased perception of e-payments as safe, based on observations from social circles, increases the likelihood of adoption, accelerating the shift toward a cashless society.

In conclusion, this research determined that social influence mediates the relationship between security and customers' e-payment usage. While security remains a primary concern, social influence plays a crucial role in either reinforcing or alleviating those concerns. For businesses and policymakers looking to enhance e-payment adoption, focusing on social trust, positive word-of-mouth, and community engagement could be just as important as implementing strong security measures. After all, adopting new technology relies not just on facts, but also on the confidence and experiences of those nearby.

5.3 Significance and Implications of the Study

By examining the factors influencing customers' usage of e-payment systems in the Klang Valley, this study contributes to theory, practice, and policy. Clearly distinguishing these implications enhances the clarity and impact of our findings.

5.3.1 Theoretical Implications

Theoretically, this study extends technology adoption literature by integrating constructs from the Technology Acceptance Model (TAM) and the Unified Theory of Acceptance and Use of Technology (UTAUT) to explain e-payment usage. The findings reinforce the importance of convenience and transaction speed as system attributes that significantly influence usage behavior, supporting TAM's continued relevance in mature digital payment environments.

In addition, this study contributes to UTAUT by empirically validating the mediating role of social influence in the relationships between convenience, security, and e-payment usage. This highlights the importance of social and normative mechanisms in shaping technology usage, particularly in highly connected urban contexts like the Klang Valley. By demonstrating that social influence acts as a mediator rather than solely as a direct predictor, the study offers a more nuanced understanding of how technological and social factors interact to influence e-payment adoption.

5.3.2 Practical Implications

This study offers valuable insights for financial institutions, fintech companies, and merchants seeking to increase e-payment adoption. Because convenience and transaction speed strongly influence adoption, service providers should prioritize user-friendly interfaces, seamless payment processes, and fast transaction processing to enhance user satisfaction and encourage continued use.

Furthermore, because social influence plays a mediating role, adoption strategies should extend beyond technical improvements. Marketing initiatives such as referral programs, influencer endorsements, and peer-based promotions may reinforce positive perceptions and encourage wider adoption of e-payment services. Although security did not have a direct significant effect on usage, robust security measures remain essential for sustaining user trust and confidence.

5.3.3 Policy Implications

From a policy perspective, the findings support ongoing national efforts to promote a cashless society in Malaysia. Policymakers can leverage social influence mechanisms through public awareness campaigns and community-based initiatives that normalise e-payment usage. By focusing on technological efficiency and social acceptance, policy interventions can more effectively support the growth of digital payment ecosystems, particularly in urban regions like the Klang Valley.

5.4 Recommendation for Future Research

While this study offers valuable insights into the factors influencing customers' use of e-payment systems in the Klang Valley, future research can expand upon these findings in several ways.

First, future studies could examine additional mediating or moderating variables that explain consumer behaviour in e-payment adoption. While this study focused on social influence as a mediating variable, psychological and behavioural factors such as perceived trust, technology anxiety, or financial literacy may offer deeper explanations of consumer decisions. Incorporating these variables could enhance the explanatory

power of existing technology adoption models and provide a more comprehensive understanding of user behaviour in digital payment environments.

Second, future research could explore the mediating role of social influence across a broader range of system attributes. While this study examined the mediating effects of social influence on convenience and security, future studies may investigate whether social influence also interacts with attributes such as transaction reliability, service quality, or user interface design. Such investigations may provide a more holistic assessment of how social dynamics influence the acceptance and continued use of e-payment systems.

Third, this study employed a cross-sectional research design, capturing respondents' perceptions at a single point in time. Future research may adopt a longitudinal approach to examine how e-payment usage behaviour evolves, particularly as users gain more experience with digital payment technologies. A longitudinal design could also help identify changes in the importance of different factors, such as whether security concerns diminish or convenience becomes more dominant as adoption matures.

In addition, future studies may expand the geographical scope beyond the Klang Valley to include semi-urban or rural areas. Comparing urban and non-urban regions could reveal important differences in adoption behaviour, infrastructure readiness, and social influence patterns. Such comparative studies would be particularly useful for policymakers seeking to promote inclusive digital financial ecosystems across different segments of the population.

Moreover, future researchers may consider employing mixed-methods approaches, combining quantitative surveys with qualitative techniques such as interviews or focus groups. Qualitative insights could provide a deeper understanding of users' motivations, concerns, and real-life experiences with e-payment systems, which may not be fully captured through structured questionnaires alone.

Finally, future research could investigate the impact of emerging digital payment innovations, such as biometric authentication, artificial intelligence-driven fraud detection, and central bank digital currencies (CBDCs), on consumer adoption behaviour. As the digital payment landscape evolves, ongoing research is essential to ensure that technology acceptance models remain relevant and reflective of real-world developments.

5.5 Limitation of Study

While this study offers valuable insights into factors influencing customers' e-payment usage in Klang Valley, several limitations warrant consideration. First, the Klang Valley focus may limit the generalizability of findings to other regions, particularly rural areas where internet access, smartphone usage, and digital payment adoption may be lower. Given that e-payment experiences can vary geographically, future research should encompass a broader range of locations for a more comprehensive understanding.

Second, the study's reliance on self-reported data, reflecting participants' perceptions rather than actual behavior, is a limitation. Participants may have over- or underestimated their e-payment usage, security concerns, or the impact of social recommendations. Future studies could incorporate actual transaction data or behavioral tracking for a more accurate assessment of real-world e-payment behavior.

Another limitation lies in the study's focus on only four key factors: convenience, speed, security, and social influence. While important, other factors such as trust, rewards, financial literacy, and personal preferences could also influence e-payment usage. Investigating these additional factors in future research could enable businesses to develop more targeted user acquisition and retention strategies.

Additionally, the study's cross-sectional design provides only a single snapshot of user behavior, failing to capture the dynamic nature of preferences. As technology advances and new features emerge, attitudes toward e-payment may evolve. A longitudinal study tracking users over time could offer deeper insights into the reasons behind changing adoption patterns.

Lastly, although the study found security and social influence to be less influential, this may not hold true across all demographics. Older users, those less technologically savvy, or individuals with distinct financial habits might perceive security risks or peer influence differently. Future research should examine these differences to better understand e-payment appeal across various demographics. Despite these limitations, this study provides a foundation for understanding e-payment user priorities. Addressing these gaps in future research can help businesses and policymakers create more effective strategies to promote digital payment usage and enhance user experience.

5.6 Conclusion

This study clarifies the key factors influencing e-payment adoption in Klang Valley. Convenience and speed are the primary drivers, while security and social influence appear less impactful. In essence, users prioritize ease and speed over social trends or active security considerations.

This does not diminish the importance of security; rather, users may assume its presence. While most presume e-payments are secure, companies must maintain robust security measures and ensure user confidence. The limited impact of social influence suggests independent decision-making in digital payments. Businesses should, therefore, emphasize direct benefits like cashback, discounts, and rewards over influencer marketing.

While insightful, this study has limitations. Conducted solely in Klang Valley, the findings may not generalize to other regions, particularly rural areas with varying digital adoption rates. Furthermore, reliance on self-reported data introduces potential biases based on personal perceptions. The focus on convenience, speed, security, and social influence also overlooks other factors like trust, financial literacy, and user incentives. Future research should explore these aspects and examine evolving user behavior in the dynamic landscape of digital payments.

The findings support the Technology Acceptance Model (TAM) and the Unified Theory of Acceptance and Use of Technology (UTAUT). Specifically, convenience and speed align with perceived ease of use and performance expectancy, while security relates to facilitating conditions. Social influence, as proposed in UTAUT, played a mediating role, especially in early adoption stages. This alignment validates the application of these models in understanding e-payment adoption in Klang Valley.

Overall, this research provides valuable insights for businesses seeking to enhance e-payment adoption. By prioritizing seamless, fast, and rewarding platforms while maintaining robust behind-the-scenes security, companies can foster greater user engagement and promote cashless transactions as the preferred payment method.

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APPENDICES

APPENDIX 1

GANTT CHART

FACTORS INFLUENCING CUSTOMERS USAGE OF E-PAYMENT IN KLANG VALLEY

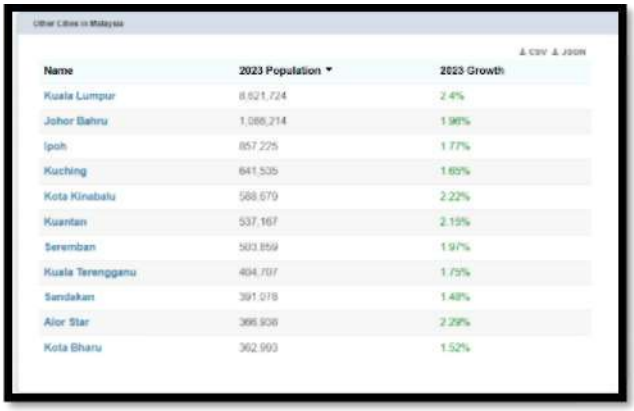
	GANTT CHART	Year 1															Year 2										
		SEM 1							SEM 2								SEM 3						SEM 4				
		2022				2023											2024										
1	REGISTRATION AND SELECTION OF SUPERVISOR																										
2	DETERMINATION OF TITLE AND SUBMIT INTO ONLINE SYSTEM (UPTRACKS)																										
3	ATTEND IPSIS RESEARCH SKILLS SEMINAR 8 MODULES																										
4	CONFIRMATION OF RESEARCH TITLE																										
5	**CHAPTER 1: INTRODUCTION**																										
6	CORRECTION OF CHAPTER 1 AND SUBMIT TO SUPERVISOR																										
7	MEETING WITH SUPERVISOR																										
8	**CHAPTER 2: LITERATURE REVIEW**																										

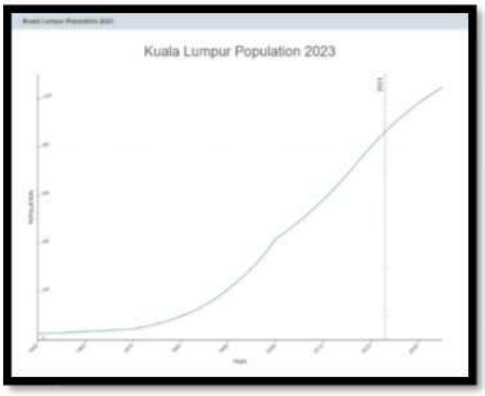
9	CORRECTION OF CHAPTER 2 AND SUBMIT TO SUPERVISOR																								
10	MEETING WITH SUPERVISOR																								
11	**CHAPTER 3: RESEARCH METHODOLOGY**																								
12	CORRECTION OF CHAPTER 3 AND SUBMIT TO SUPERVISOR																								
13	MEETING WITH SUPERVISOR																								
14	PREPARATION DRP PRESENTATION																								
15	DRP: PROPOSAL PRESENTATION																								
16	**CHAPTER 4: FINDINGS AND ANALYSIS**																								
17	SUBMIT FINAL RESEARCH PROPOSAL TO SUPERVISOR																								
18	PROPOSAL PRESENTATION APPLICATION (UPTRACKS)																								
19	WRITING PROPOSAL																								
20	THESIS SUBMISSION																								
21	PRE-VIVA APPLICATION																								

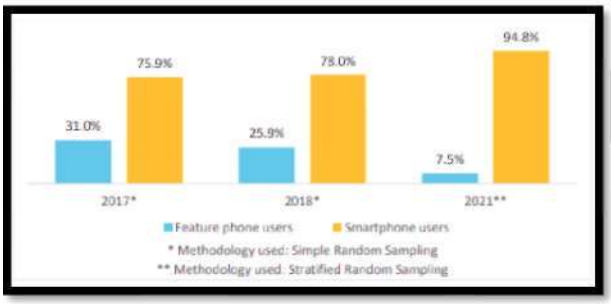
22	PRE-VIVA PRESENTATION																									
23	CORRECTION																									
24	VIVA APPLICATION																									
25	VIVA PRESENTATION																									

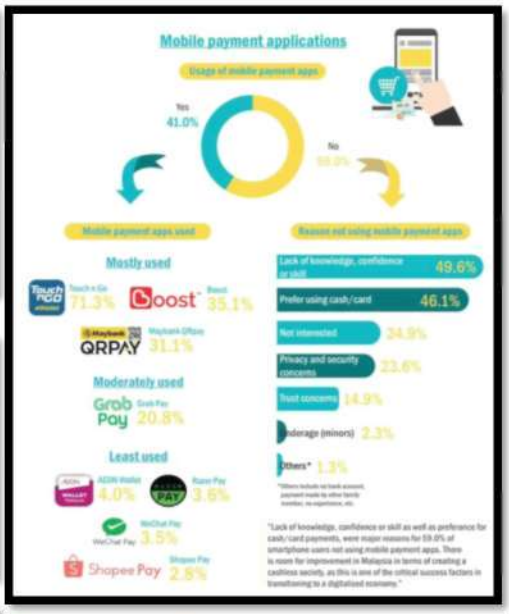
	MILESTONES	Year 1												Year 2											
		SEM 1			SEM 2			SEM 3			SEM 4														
		2022			2023									2024											
1	Completion of Introduction																									
2	Completion of Literature Review																									
3	Completion of Research Methodology																									
4	Completion Findings and Analysis																									
5	DRP Presentation																									
6	Completion Findings and Analysis Collection of Data																									

7	Report Submission																								
8	Viva Presentation																								
9	Report Corrected																								
10	Report Formatted																								
11	Senate																								
12	Convocation																								

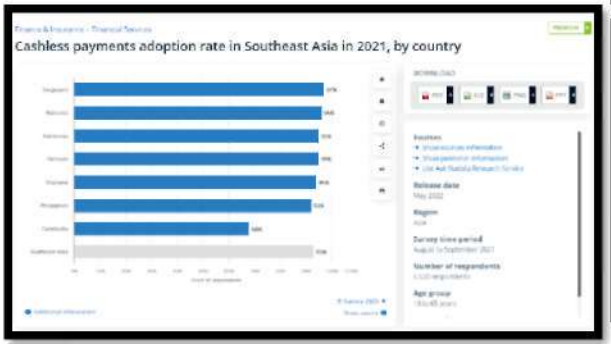

Other Cities in Malaysia
CSV JSON
Name
2023 Population
2023 Growth
Kuala Lumpur 8,621,724 2.4%
Johor Bahru 1,086,214 1.98%
Ipoh 857,225 1.77%
Kuching 641,535 1.65%
Kota Kinabalu 588,679 2.22%
Kuantan 537,167 2.15%
Seremban 503,859 1.97%
Kuala Terengganu 404,707 1.75%
Sandakan 391,078 1.48%
Alor Star 366,908 2.29%
Kota Bharu 362,993 1.52%

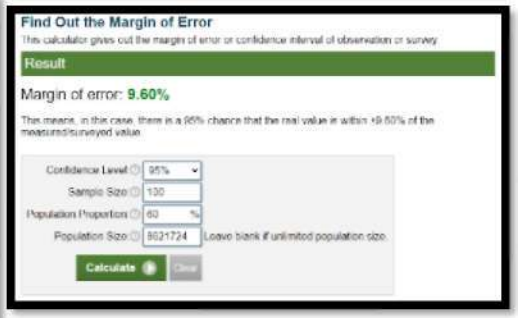

Kuala Lumpur Population 2023


31.0%
75.9%
25.9%
78.0%
7.5%
94.8%
2017*
2018*
2021**
Feature phone users
Smartphone users
* Methodology used: Simple Random Sampling
** Methodology used: Stratified Random Sampling


Mobile payment applications
Usage of mobile payment apps
Yes
41.0%
No
Mobile payment apps used
Reason not using mobile payment apps
Mostly used
Touch 'n Go 71.3%
Boost 35.1%
QRPAY 31.1%
Moderately used
Grab Pay 20.8%
Least used
4.0%
3.6%
3.5%
Shopee Pay 2.8%
Lack of knowledge, confidence or skill 49.6%
Prefer using cash/card 46.1%
Not interested 24.9%
Privacy and security concerns 23.6%
Trust concerns 14.9%
Underage (minors) 2.3%
Others* 1.3%


Demographic
Age group
Smartphone users
95.6% Below 20 y/o 5.6%
97.5% 20 - 34 y/o 4.5%
93.9% 35 - 49 y/o 9.4%
92.4% 50 - 64 y/o 11.0%
82.3% 65 y/o and above 21.6%
Feature phone users
"Smartphone use is highest among respondents under the age of 35, and the trend is declining in older age groups. For feature phone users, the trend is inversely proportional."


Cashless payments adoption rate in Southeast Asia in 2021, by country


Find Out the Margin of Error
This calculator gives out the margin of error or confidence interval of observation or survey
Result
Margin of error: 9.60%
This means, in this case, there is a 95% chance that the real value is within +9.60% of the measured/surveyed value
Confidence Level 95%
Sample Size 100
Population Proportion 50 %
Population Size 9631724 Leave blank if unlimited population size
Calculate
Clear

FACULTY OF BUSINESS AND MANAGEMENT
UNIVERSITI TEKNOLOGI MARA
SHAH ALAM, SELANGOR

SURVEY QUESTIONNAIRE

COVER LETTER:

FACTORS INFLUENCING CUSTOMERS' USAGE OF E-PAYMENT IN KLANG VALLEY

Dear Sir/Madam/Ms,

I am student in Master of Science (Business Management) at the Faculty of Business and Management, Universiti Teknologi MARA, Shah Alam, Selangor, Malaysia.

As a partial requirement of the Master of Science (Business Management) - BA750, I am currently conducting a research project titled: Factors Influencing Customers' Usage of E-Payment in Klang Valley. One of the electronic payments that tremendously used over the world is cashless payment.

Given the foregoing, I would like to encourage you to join in this research project by completing the accompanying questionnaire survey. Please keep in mind that your survey responses should be based on your experiences with the e-payment option. The following questionnaire will take between 5 and 10 minutes to complete. There is no compensation for replying, and there is no known risk. Your information will only be used for academic purposes and will be kept totally confidential.

Your insightful responses to the questions are greatly appreciated and will be of substantial value to us. If you have any questions during the answering survey, please do not hesitate to ask for assistance and clarification from me.

Thank you for your utmost cooperation.

Best Regards,

Nur Atiqah Akmal binti Ramli
+6017 230 4178
atiqahakmalramli@gmail.com

FACULTY OF BUSINESS AND MANAGEMENT
UNIVERSITI TEKNOLOGI MARA
SHAH ALAM, SELANGOR

SOAL SELIDIK

SURAT IRINGAN:

FAKTOR-FAKTOR YANG MEMPENGARUHI PENGGUNAAN PEMBAYARAN ELEKTRONIK DI LEMBAH KLANG

Kepada Tuan/Puan,

Saya adalah seorang pelajar Sarjana Sains (Pengurusan Perniagaan) di Fakulti Pengurusan Perniagaan, Universiti Teknologi MARA, Shah Alam, Selangor, Malaysia.

Sebagai salah satu syarat untuk memperoleh Sarjana Sains (Pengurusan Perniagaan) - BA750, saya sedang menjalankan projek penyelidikan yang bertajuk: Faktor-Faktor yang Mempengaruhi Penggunaan Pembayaran Elektronik oleh Pelanggan di Lembah Klang. Salah satu kaedah pembayaran elektronik yang digunakan secara meluas di seluruh dunia adalah pembayaran tanpa tunai.

Sehubungan dengan itu, saya ingin menggalakkan anda untuk menyertai projek penyelidikan ini dengan melengkapkan soal selidik yang disertakan. Harap maklum bahawajawapan anda dalam soal selidik ini harus berdasarkan pengalaman anda dengan pilihan pembayaran elektronik. Soal selidik berikut akan mengambil masa antara 5 hingga 10 minit untuk diselesaikan. Tiada ganjaran untuk menjawab, dan tiada risiko yang diketahui. Maklumat anda hanya akan digunakan untuk tujuan akademik dan akan dirahsiakan sepenuhnya.

Jawapan anda yang bernas kepada soalan-soalan tersebut sangat dihargai dan akan memberikan nilai yang besar kepada kami. Jika anda mempunyai sebarang soalan semasa menjawab soal selidik, jangan ragu untuk meminta bantuan dan penjelasan daripada saya.

Terima kasih atas kerjasama anda.
Sekian, terima kasih.

Nur Atiqah Akmal binti Ramli
+6017 230 4178
atiqahakmalramli@gmail.com

SECTION A: SCREENING QUESTION
BAHAGIANA: SOALANSARINGAN

4. Do you own a smartphone?
Adakah anda mempunyai telefon pintar?

- Yes/7a
- ^olTidak

5. Are you a Klang Valley Resident?
Adakah andapenduduk Lembah Klang?

- Yes/7a
- ^olTidak

6. Have you use e-payment system before?
Pernahkah anda menggunakan sistem pembayaran elektronik sebelum ini?

- Yes/7a
- ^olTidak

If "No" you may end the question here, thank you.
Jika "Tidak" anda boleh berhenti menjawab di sini. Terima kasih.

SECTION B: GENERAL INFORMATION
BAHAGIANB: MAKLVMAT AM

6. What type of e-payment systems have you used? (You may choose more than one)
Apakah jenis sistem pembayaran elektronik yang pernah anda gunakan? (Anda boleh memilih lebih daripada satu)

- Touch 'n Go e-Wallet
D Grab Pay
- Maybank QR Pay
- Boost Pay
D ShopeePay
D Others (Please specify):_____

7. What item do you purchase using e-payment systems? (You may choose more than one)
Apakah barangan yang anda beli menggunakan sistem pembayaran elektronik? (Anda boleh memilih lebih daripada satu)

D Food and Beverages/ *Makanan dan Minuman*
D Groceries/ *Barangan Runcit*

- Fashion and Accessories/ *Fesyen dan Aksesori*
- Health and Beauty/ *Kesihatan dan Kecantikan*
- Home and Living/ *Peralatan Rumah*
- Technology and Gadget/ *Teknologi dan Gajet*
- Others (Please specify) / *Lain-lain (Sila nyatakan):*_____

8. How frequent you use e-payment systems in a day?
   Berapa kerap anda menggunakan sistem pembayaran elektronik dalam sehari?

   - 1 to 5 times/ *1 ke 5 kali*
   - 6 to 10 times/tffe *70* far//
   - More than 10 times/ *Lebih dari 10 kali*

9. Do you think the e-payment systems is more efficient than traditional payment channels?
   Adakah anda berpendapat bahawa sistem pembayaran elektronik lebih cekap berbanding saluran pembayaran tradisional?

   - Yes/ *Ya*
   - *No/ Tidak*

10. Do e-payment systems is easy to understand?
    Adakah sistem pembayaran elektronik mudah difahami?

    - Yes/ *Ya*
    - *No/ Tidak*

Instruction: For section C, D, E, F and G, kindly read the following statement and circle on appropriate scale which best describe your feeling or perception based on the following table.

Arahan ***:*** *Untuk bahagian C, D, E, F, dan G, sila baca kenyataan berikut dan bulatkan pada skala yang sesuai yang paling menggambarkan perasaan atau persepsi anda berdasarkan jadual berikut.*

Table of Scales:

Strongly Disagree *Sangat Tidak Setuju*	Disagree *Tidak Setuju*	Neutral *Neutral*	Agree *Setuju*	Strongly Agree *Sangat Setuju*
1	2	3	4	5

SECTION C: CONVENIENCE
BAHAGIAN C: KEMUDAHAN

No. ***Bil.***	**Statements** ***Kenyataan***	**Scales** ***Skala***				
1.	It is easy for me to use an e-payment system. *Saya mudah menggunakan sistem pembayaran elektronik.*	1	2	3	4	5
2.	E-payment system is my primary payment method because it is convenience to use. *Sistem pembayaran elektronik adalah kaedah pembayaran utama saya kerana ia mudah digunakan.*	1	2	3	4	5
3.	My engagement with the e-payment system is straightforward and understandable. *Saya terlibat dengan sistem pembayaran elektronik secara langsung dan ia mudah difahami.*	1	2	3	4	5
4.	E-payment system usage is more convenience than cash since it saves time. *Penggunaan sistem pembayaran elektronik lebih mudah daripada menggunakan tunai kerana ia menjimatkan masa.*	1	2	3	4	5
5.	Using e-payment system ease me to purchase. *Menggunakan sistem pembayaran elektronik memudahkan saya untuk membuat pembelian.*	1	2	3	4	5

SECTION D: SECURITY
BAHAGIAN D: KESELAMATAN

No. ***Bil.***	**Statements** ***Kenyataan***	**Scales** ***Skala***				
1.	I believe an e-payment system is secure for me. *Saya percaya sistem pembayaran elektronik adalah selamat untuk saya.*	1	2	3	4	5
2.	I believe the information about transaction is secure. *Saya percaya maklumat tentang transaksi adalah selamat.*	1	2	3	4	5
3.	I believe that the e-payment system will protect my privacy in the system. *Saya percaya bahawa sistem pembayaran elektronik akan melindungi privasi saya dalam sistem.*	1	2	3	4	5

4.	I believe that immoral parties will not be able to view my personal information during transaction on e-payment system. *Saya percaya bahawa pihak yang tidak bermoral tidak akan dapat melihat maklumat peribadi saya semasa transaksi di sistem pembayaran elektronik.*	1	2	3	4	5
5.	I feel confident making payment through e-payment system. *Saya berasa yakin membuat pembayaran melalui sistem pembayaran elektronik.*	1	2	3	4	5

SECTION E: SPEED
BAHAGIAN E: KEPANTASAN

No. ***Bil.***	**Statements** ***Kenyataan***	**Scales** ***Skala***				
1.	E-payment can save my time while using it. *Sistem pembayaran elektronik dapat menjimatkan masa saya semasa menggunakannya.*	1	2	3	4	5
2.	Using e-payment system is faster than the traditional payment method. *Menggunakan sistem pembayaran elektronik lebih cepat daripada kaedah pembayaran tradisional.*	1	2	3	4	5
3.	I can use e-payment system at anytime and anywhere. *Saya boleh menggunakan sistem pembayaran elektronik pada bila-bila masa dan di mana sahaja.*	1	2	3	4	5
4.	I can save my time to track transaction record in e-payment system. *Saya boleh menjimatkan masa untuk mengesan rekod transaksi dalam sistem pembayaran elektronik.*	1	2	3	4	5
5.	I feel that using e-payment system will speed up transactions. *Saya rasa menggunakan sistem pembayaran elektronik akan mempercepatkan transaksi.*	1	2	3	4	5

SECTION F: SOCIAL INFLUENCE
BAHAGIAN F: PENGARUH SOSIAL

No. ***Bil.***	**Statements** ***Kenyataan***	**Scales** ***Skala***				
1.	My family influence me to use the e-payment system. *Keluarga saya mempengaruhi saya untuk menggunakan sistem pembayaran elektronik.*	1	2	3	4	5
2.	My friends influence me to use the e-payment system. *Rakan-rakan saya mempengaruhi saya untuk menggunakan sistem pembayaran elektronik.*	1	2	3	4	5
3.	The media influence me to use an e-payment system. *Media mempengaruhi saya untuk menggunakan sistem pembayaran elektronik.*	1	2	3	4	5
4.	People that have an influence on my behavior believe I should use the e-payment system. *Orang yang mempengaruhi tingkah laku saya percaya saya sepatutnya menggunakan sistem pembayaran elektronik.*	1	2	3	4	5
5.	People whose opinions I respect influence me to use the e-payment system. *Orang yang pendapatnya saya hormati mempengaruhi saya untuk menggunakan sistem pembayaran elektronik.*	1	2	3	4	5

SECTION G: USE OF E-PAYMENT
BAHAGIAN G: PENGGUNAAN PEMBAYARAN ELEKTRONIK

No. ***Bil.***	**Statements** ***Kenyataan***	**Scales** ***Skala***				
1.	E-payment system is easy to use. *Sistem pembayaran elektronik mudah digunakan.*	1	2	3	4	5
2.	I plan to use e-payment system more frequently in the future. *Saya merancang untuk menggunakan sistem pembayaran elektronik lebih kerap di masa hadapan.*	1	2	3	4	5
3.	E-payment systems carry out my daily tasks easier. *Sistem pembayaran elektronik memudahkan tugas harian saya.*	1	2	3	4	5

4.	Using e-payment system is the trend for the modern lifestyle. *Menggunakan sistem pembayaran elektronik adalah trend untuk gaya hidup moden.*	1	2	3	4	5
5.	I plan to continue to use e-payment system in the future. *Saya merancang untuk terus menggunakan sistem pembayaran elektronik di masa hadapan.*	1	2	3	4	5

SECTION H: DEMOGRAPHIC PROFILE
BAHAGIANH: PROFIL DEMOGRAFI
INSTRUCTION: Please select the proper answer to each of the following items: *Required
ARAHAN: Sila pilih jawapan yang betul untuk semua soalan di bawah: **Diwajibkan*

1. Age group/ *Kumpulan umur*

- 18 to 29 years' old/ *18 ke 29 tahun*
- 30 to 39 years' old/ *30 ke 39 tahun*
- 40 to 49 years' old/ *40 ke 49 tahun*
- 50 to 59 years' old/ *50 ke 59 tahun*

D 60 years old and above/ *60 tahun ke atas*

2. Gender/Jantina

- Male/ *Lelaki*
- **Female/** *Perempuan*

3. Ethnic/ *Bangsa*

- Malay/ *Melayu*
- Chinese/ *Cina*
- Indian/ *India*
- Others (Please specify)/*Lain-lain (Sila nyatakan):*_____

4. Current level of education/ *Tahap pendidikan semasa*

D Secondary School/ *Sekolah Menengah*
D Diploma/ *Diploma*
D Bachelor's Degree/ *Ijazah Sarjana Muda*
D Masters/ *Ijazah Sarjana*
D **PhD/** *Doktor Falsafah*
D Others (Please specify)/*Lain-lain (Sila nyatakan):*_____

5. Status/ *Status*

- Single/ *Bujang*
- Married/ *Berkahwin*

6. Religion/ *Agama*

U Muslim/ *Islam*
- Buddhist/ *Buddha*
- Hindu/ *Hindu*
- Christian/ A*raft**an***

D Others (Please specify)/*Iain-lain (Sila nyatakan):*

END OF QUESTION, THANK YOU

SOALAN TAMAT. TERIMA KASIH

AUTHOR'S PROFILE

Nur Atiqah Akmal is a postgraduate student pursuing a Master's degree in Master of Science (Business Management) at Universiti Teknologi MARA (UiTM). She obtained her Bachelor's degree in Business Administration (Hons.) Marketing from Universiti Teknologi MARA (UiTM) in 2019 till 2022. Her research interests include about one of the electronic payments that tremendously used over the world which is cashless payment. This thesis focuses on Factors Influencing Customers' Usage of E-Payment in Klang Valley.

LIST OF PUBLICATIONS

Ramli, A. A., Mazlan, N. I. binti, Harun, Z. F., & Mohd Yusof, Y. L. B. (2024). Factors Influencing Customers on the Use of E-Payment in Klang Valley. Information Management and Business Review, 16(2(1) S), 18-23. https://doi.org/10.22610/imbr.vl6i2(I)S.3765

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