FACTORS AFFECTING ADOPTION OF CONTACTLES PAYMENT APPLICATIONS IN THE FINTECH ENVIRONMENT.

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DECLARATION OF ORIGINAL WORK

I hereby declare that all the work of this thesis entitled “Trends, Security challenges, Privacy information, performance affecting Contactless Payment Application in the Fintech environment” is original done by myself and no portion of the work encompassed in this research project proposal has been submitted in support of any application for any other degree or qualification of this or any other institute or university of learning.

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DEDICATION

I would like to appreciate the dedication of my beloved family members who educated me and motive me to learn until degree level. And also, I express a deep sense of gratitude to my lecturer whom also my supervisor for my final year project, DR.Nor Azah Binti Abdul Aziz and my fellow friends. They have provided me fully support and advice throughout this research. Without their blessing and encouragement, this research is impossible to complete within short period of time.

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ABSTRACT

The introduction of mobile devices has altered the lives of customers in numerous ways, most notably in the way they make payments. Mobile payment is one of the newer developments introduced by financial institutions. Mobile payment is a rapidly increasing payment mechanism that can be used as an alternative to traditional payment methods. However, despite the fact that mobile payments provide several benefits to customers, adoption intentions are low in Malaysia. The study will concentrate on consumers due to their traits of being resistant to technological changes, having a strong purchasing power, and being one of Malaysia's most populous groups.

As a result, the purpose of this study is to investigate the resistance factors in order to better understand consumer in Malaysia is slow to accept new technologies. The Trends, security challenges, privacy information and performance of mobile payment app. The outcomes of this study will help financial providers and business practitioners understand how to improve the rate of adoption Fintech in Malaysia by allowing them to identify individual resistance behaviour and design strategies to overcome resistance obstacles. The research was completed using a quantitative strategy, and the examination was completed using a Pearson connection to assess the relationship between free components and ward variables. The relapse inquiry was used to evaluate theories. As a result, it is expected that this examination paper has been useful to business experts and academicians for future reference.

Keywords: Trends, Security challenges, Privacy information, performance, contactless payment application, Fintech environment

ABSTRAK

Pengenalan peranti mudah alih telah mengubah kehidupan pelanggan dalam pelbagai cara, terutamanya dalam cara mereka membuat pembayaran. Pembayaran mudah alih adalah salah satu perkembangan baru yang diperkenalkan oleh institusi kewangan. Pembayaran mudah alih ialah mekanisme pembayaran yang meningkat pesat yang boleh digunakan sebagai alternatif kepada kaedah pembayaran tradisional. Walau bagaimanapun, walaupun pada hakikatnya pembayaran mudah alih memberikan beberapa faedah kepada pelanggan, niat pakai adalah rendah di Malaysia. Kajian ini akan tertumpu kepada pengguna kerana sifat mereka yang tahan terhadap perubahan teknologi, mempunyai kuasa beli yang kukuh, dan menjadi salah satu kumpulan paling ramai penduduk di Malaysia.

Hasilnya, tujuan kajian ini adalah untuk menyiasat faktor rintangan agar lebih memahami pengguna di Malaysia lambat menerima teknologi baharu. Trend, cabaran keselamatan, maklumat privasi dan prestasi aplikasi pembayaran mudah alih. Hasil kajian ini akan membantu penyedia kewangan dan pengamal perniagaan memahami cara meningkatkan kadar penggunaan Fintech di Malaysia dengan membenarkan mereka mengenal pasti tingkah laku rintangan individu dan mereka bentuk strategi untuk mengatasi halangan rintangan. Kajian telah disiapkan menggunakan strategi kuantitatif, dan peperiksaan telah diselesaikan menggunakan sambungan Pearson untuk menilai hubungan antara komponen bebas dan pembolehubah wad. Siasatan berulang digunakan untuk menilai teori. Hasilnya, diharapkan kertas peperiksaan ini berguna kepada pakar perniagaan dan ahli akademik untuk rujukan masa hadapan.

Kata kunci: Trend, Cabaran keselamatan, Maklumat privasi, prestasi, aplikasi pembayaran tanpa sentuh, persekitaran Fintech.

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LIST OF SYMBOLS

$\bar{x}$	Sample mean
N	Number of Item
σ	Standard Deviation (S.D.)
c	Length of Class Interval
X^2	Squares of The Deviations of Scores from the Assumed Mean
f	Frequency of Class Interval
c^2	Square of Correction
N	Total Number of Score
v	Average Variance
X_i	The *i*th Independent Variable

LIST OF ABBREVIATIONS

ABBREVIATION	MEANING
Fintech	Financial Technology
SAP	secure authentication protocol
SMS	Short message service
NFC	near-field communication
QR code	quick response code
Gen Y	Generation Y

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CHAPTER 1

INTRODUCTION

1.1 Introduction

This chapter will discuss about the Trends,Security Challenges,Privacy Information and Performance, affecting Contactless Payment Applications in Fintech environment. The background of study, problem statement, research questions, research objectives, scope and limitation of the study, significant of study and summary has been discussed in this chapter.

1.2 Background of Study

Due to numerous legislation and marketability, contactless payment services are only employed in limited regions, despite the fact that the financial system is already largely digitalize. However, as more mobile devices are available around the world and online purchasing becomes more popular, the digital contactless payment sector has increased significantly. The demand for simplified payment has grown as the contactless payment business has matured and users' contactless payment frequency has increased. The need for quick and convenient contactless payment services is growing in all digital contexts, including those with well-established financial infrastructure and those in developing countries where currencies such as cash are not widely dispersed.

According to a 2014 Gartner estimate, because contactless payment transactions began in Africa and developing Asian countries, the contactless payment population is predicted to rise rapidly until 2016. Financial Technology (Fintech), which combines finance and technology, is being created around the world to provide these customers

with streamlined contactless payment services as well as financial services tailored to consumers and service providers.

Customers may now use their mobile devices to pay for goods and services they buy anywhere and at any time, making transactions more convenient, effective, and secure. contactless payment is an emerging payment method that can be used to enhance or replace traditional payment methods (Tan, Ooi, Chong, Hew, 2014). Both customers and retailers can benefit from contactless payments. Customers would no longer have to wait in long queues at the checkout counter if contactless payment options were introduced, boosting their satisfaction with the store, motivating them to spend more frequently, and improving business.

As of today, thousands of online and mobile retailers allow customers to pay via a contactless payment platform. Despite the fact that contactless payment is simple to use and useful to users, Malaysia's acceptance rate is still lower than in other nations, especially among Malaysian customers. According to Wikipedia, Generation Y refers to anyone born between the early 1980s and the early 1994s. They account for 40% of Malaysia's total population. They are in a high-earning, high-spending stage of life, therefore digital tools are inextricably linked to their purchasing decisions. Generation y is a popular target demographic due to its big population and high spending power (Jian Ai, 2021).

1.3 Problem Statement

In several markets, cash payment reigns supreme, accounting for more than 90% of all payments in practically all developing countries (S. F. Verkijika, 2020). As a result, it is critical to recognize the significance of contactless payment acceptability. Following the first Contactless payment transaction in 1997, multiple research studies on contactless payment were undertaken by various researchers (T. Dahlberg, J. Guo, J. Ondrus, 2015). Several research on contactless payment deployment has emphasized the importance of user involvement. It is critical to consider user behavior on contactless payment in order to promote contactless payment services and increase users' acceptance intentions. (S. Saxena, 2019) attempted to answer certain questions

about the security of online payment systems, and proposes many methods for dealing with various security threats linked with online payment systems.

Credit cards, e-wallets, debit cards, net banking, smart card, Paypal, and amazon pay are all examples of contactless payments (A. Thangamuthu, 2020). Integrity and authorization, out-of-band authorization, password authorization, signature authorization, secrecy, and availability, and dependability are among the requirements presented by the authors for online payments. For contactless payment, a new secure authentication protocol (SAP) has been proposed. Despite the fact that many studies on contactless payment are underway, we are unaware of any research that highlights the security needs by comparing and analyzing present payment services and mobile Fintech payment services. It is vital to establish Fintech payment service criteria and identify security concerns in order to deliver mobile Fintech payment services securely and conveniently in the quickly increasing contactless payment market.

According to the Fintech Malaysia study for 2018, internet penetration in Malaysia is 85.7 percent, online banking penetration is 85.1 percent, and Fintech application mobile penetration is just 40%. Though data shows that Fintech application mobile transactions have a smaller value, it is clear that Fintech application mobile is a preferred alternative for micro payments, as the research demonstrates that transaction volume is higher (V. Fong, 2018). Customers' trust in the security of Fintech applications on mobile is still low, as evidenced by this statistic. Lower Fintech application mobile penetration could be due to a variety of factors, including word of mouth, where dissatisfied customers encourage their friends, colleagues, and family members to stick with traditional banking and internet banking rather than adopting new alternatives, such as Fintech application mobile, for banking activities that provide greater benefits.

The study explained the mobile Fintech payment infrastructure by comparing existing payment services to demonstrate the relationship between them, then analyzing recent trends in mobile Fintech payment services to classify them into different types of payment services and organizing the requirements that mobile Fintech payment services should meet. In addition, the study studied and classified the security

difficulties that mobile Fintech payment services face, as well as recommending requirements.

1.4. Research Objectives

1. To examine factors (Trends,Security Challenges,Privacy Information and Performance) that affect the Contactless Payment Applications in Fintech environment.
2. To study the most significant factor influence the contactless Payment application.
3. To investigate the relationship between the factors and the Contactless payment application .

1.5 Research Questions

1. What are the factors (Trends,Security Challenges,Privacy Information and Performance) that affect the Contactless Payment Applications in Fintech environment ?
2. What is the most significant factor that influence the Contactless Payment application ?
3. How do the factors affecting the Contactless Payment application ?

1.6 Scope and Limitation of the Study

This research paper is focusing on the Trends,Security Challenges,Privacy Information and Performance,affecting Contactless Payment Applications in Fintech environment. This study has been conducted among 385 respondents from all states of Malaysia. The selected respondents has been chosen randomly among Gen Y. The researcher has been carried out by distributing questionnaires to the respondents.

The limitation of the study is the inaccurate data from respondents due to them was chosen randomly by the researcher. The researcher may not focus on every single state of Malaysia. Besides, the researcher experienced the time limitation in conducting the study. The research faced time constraints since the study needed to be completed in a short period of time which is 10 months.

1.7 Operational definition.

contactless payment

Contactless payment is a safe payment technique that employs RFID technology and near-field communication to enable the use of a debit or credit card, smart-card, or other payment device. To use the system, a customer taps their credit card near a point-of-sale terminal that has the technology installed. Because it does not need users to enter a PIN, contactless payment is seen as a quick and convenient method of payment. Contactless payment, which is popular in Australia, Canada, South Korea, and the United Kingdom, has yet to gain traction with American consumers (Julia Kagan, 2020).

FinTech environment

The term "FinTech," which is an abbreviation for Financial Technology, refers to businesses or representatives of businesses that integrate financial services with current, innovative technologies. 3 New market entrants typically offer Internet-based and application-oriented products. FinTech often seek to attract customers by offering more user-friendly, efficient, transparent, and automated products and services. Traditional banks have not yet exhausted the opportunities for development in this area (EBF, 2015; Mackenzie, 2015).

contactless payment Application

A mobile payment is a monetary transaction done using a portable electronic device such as a tablet or cell phone to purchase a product or service. Contactless payment systems, such as PayPal and Venmo, can also be used to send money to friends and family members. Contactless payments were initially more popular in Asia and Europe, but they quickly moved to North America and witnessed significant development. Merchants' unwillingness to retool current terminals has contributed to contactless pay's modest growth as compared to physical credit cards. When compared to conventional cards, contactless payments provide more privacy and

security. Both Apple and Android have mobile payment apps (Apple Pay and Google Pay) (MITCHELL GRANT, 2022).

Trends

According to Market Business News, 2022 A trend is a broad direction in which something is evolving, developing, or shifting. The term can also refer to a fad or a fashion or craze. The verb 'to trend' refers to the process of developing or changing in a general direction. If something is trending on social media, it is the subject of many posts. A trend is also known as a pattern of progressive change in a process, output, or condition in the business world. It is a general or ordinary propensity. When I say, "There has been a trend toward shorter-term mortgages," I mean that more people are taking out shorter-term mortgages. To put it another way, there has been a trend toward shorter-term mortgages.

Security Challenges

Application security is described as the set of measures taken by a developer at various phases of the software development life cycle to identify, repair, and prevent security vulnerabilities in applications (SDLC). It entails multiple processes, from development through testing and post-deployment evaluations, all while keeping the application deployment environment in mind. These procedures cover everything from application design through code review and post-deployment. The notion of application security grows increasingly challenging as our application usage patterns diversify. Developers, software providers, and companies must consider a variety of security requirements (Chiradeep BasuMallick 2021).

Privacy Information

According to Stephen J. Bigelow, data privacy, also known as information privacy, is a component of data protection that concerns sensitive data storage, access, preservation, immutability, and security.

The proper handling of personal data or personally identifiable information (PII), such as names, addresses, Social Security numbers, and credit card numbers, is often related with data privacy. The concept, however, extends to other valuable or confidential data, such as financial information, intellectual property, and personal health information. Vertical industry rules, as well as legislative requirements of various governing bodies and jurisdictions, frequently govern data privacy and data protection initiatives.

1.9 Significance of Study

In practice, the findings of this study can be used by the government, lecturers, policymakers, and private enterprises to develop their financial industry. This research, in particular, can assist lecturers in developing instructional materials. Then, policymakers and business organizations can use this research study to help them develop their Fintech businesses.

The government has been working to give appropriate assistance for users to adopt contactless payment applications in order to consistently boost government revenue. The government had to design a support model that can be useful for the Financial department, particularly in the Fintech environment.

Performance of contactless payment application

In the context of cloud computing, application performance is the measurement of an application's real-world performance and availability. It is especially useful for remote and cloud computing applications that are operated on remote servers and served through a network such as the Internet. Application performance is a good indicator of the level of service provided by a provider and is one of the most closely reviewed IT metrics. Here the researcher manage to convey that the performance of the application is important to manage the users adoption towards contactless payment application in their daily life.

1.10 Summary

Finally, the overview of the study is discussed in this chapter. The study's background, problem statement, research questions, study objectives, scope and limitations, and significance were all examined. The researcher will conduct the study's literature review in the following chapter. The information has been more comprehensive and understandable.

CHAPTER 2

LITERATURE REVIEW

2.0 Literature Review

This chapter will examine the literature review and relevant theoretical model. The researcher discussed more about the factors affecting Contactless payment application in the Fintech environment. By reading the relevant kinds of literature, the dependent variables and independent variables were defined. The literature review is required to develop a suitable research methodology method such as qualitative or quantitative research. At the end of this chapter, the proposed research framework can describe the theory and develop the hypothesis.

2.1 Contactless payment

Liebana-Cabanillas et al. (2014) define mobile payment as the use of a mobile device to accomplish an economic transaction. Contactless payment allows you to buy digital (like music and games) or physical (like books and consumer electronics) things (Kim et al., 2010). Because it may be used to conduct transactions in both a remote internet store and a physical store, it is regarded as a potential "killer" of cash, bank cards, and even Internet payments (Ondrus et al., 2009).

Consumers that utilize contactless payment application have four areas of convenience, according to researchers (Boden et al., 2020). First, mobile payment removes payment limits imposed by location, allowing customers to purchase things from a remote online store (Slade et al., 2015). Second, mobile payment enables customers to pay for their purchases without the need for a physical wallet, cash, or

credit card (Mallat, 2007). (Pham and Ho, 2015). Third, when compared to traditional payment methods, mobile payment has some advantages in terms of economic transaction performance characteristics (e.g., speed) (Teo et al., 2015). Fourth, consumers are protected against counterfeit money when they use mobile payment (Teo et al., 2015).

Short message service (SMS), near-field communication (NFC), and QR codes are the three basic forms of mobile payment tools. SMS mobile payments are remote systems that require a communication protocol that allows two mobile devices to exchange brief text messages (Valcourt et al., 2005). Near-field communication (NFC) and quick response codes (QR codes) are both proximity systems. NFC payment uses radio frequency channels to connect payment devices and vending machines without relying on mobile networks (Coskun et al., 2013). Despite the fact that NFC payments are employed in a variety of situations, such as public transportation, their popularity is limited by a scarcity of devices due to the relatively high cost of NFC modules. According to a China UnionPay poll, NFC contactless payments would account for only 8% of all mobile payments in 2020. (CUP, 2021).

A QR code is a storage system that uses a dot matrix or two-dimensional bar code to transmit information and is recognized by certain equipment. It can be printed on paper or displayed on a screen. The QR code is a low-cost payment method that is widely used by customers and businesses. At reality, in the actual business, QR code mobile payment has the potential to replace cash and credit cards. Consumers can, for example, use their phone's camera to scan the supermarket's QR code at the checkout to pay for goods. Alternatively, customers can show a QR code on their phone's screen to a store staff, who can scan the code using a scanner or their own phone. The customer's credit or debit card is linked to the QR code. If the customer does not have enough money to pay with a QR code, the retailer will submit a payment claim later. In China, third-party payment services like Alipay and WeChat Pay are more popular than bank-provided mobile client apps when it comes to QR code payments.

2.2 Fintech Environment

Fintech, or financial technology, refers to the use of cutting-edge technology to deliver financial services. (Fosso Wamba, 2020). Fintech sectors have been able to differentiate themselves from traditional financial services by providing unique, niche, and customized services thanks to technology advancements in infrastructure, big data, data analytic, and mobile devices (Lee, I.; Shin, Y.J, 2018). Fintech services (e.g., mobile payments, digital banking, financing, asset management, crowdfunding, insurance, and others) have recently been offered by a number of enterprises, including device manufacturers, IT distributors, IT service providers, banks, and credit card companies (Lim, 2019).

Fintech services provide cost-effective platforms as an alternative to traditional financial services and improve the user experience by utilising simple and convenient service functions(Lim, 2019). Fintech's primary contributions include lower transaction costs, higher service quality, and the development of creative ways to provide financial services (Fosso Wamba 2020, Aslam, J.; Saleem, 2021). To be more specific, MPS allows users to buy goods and services by just inputting their passwords, PINs, and biometric authentications, with no need to provide personal information for each transaction(Kang, J 2018 and Nan D, 2018).

2.3 Contactless payment Application

Technology-related interruptions have always had an impact on payments (Gomber et al. 2018). Systems for electronic payments have undergone significant domestic and international development since the 1970s in the payments industry. Currently, daily transactions on international markets total more than US$ 5.4 trillion (Gomber et al. 2018).

Recent years have seen changes in the operational (process disruption) and commercial (service transformation) levels of financial transactions. An alignment of circumstances that occurred following the 2008 Financial Crisis is responsible for the introduction of new and unexpected market actors into the payments business. 2016; Arner et al. Banks, which are relatively new institutions, serve as payment providers today. Startups or technology companies (Arner et al. 2016). Additionally, due to the wealth of data, enhanced data infrastructures, system integration, machine learning, and other tools, clients can now access novel payment services through the Internet and mobile devices (Kashyap et al. 2017).

Among a number of indicators, the payments industry leads the fintech ecosystem. One can confirm that the majority of fintech investments over the past 18 years have been focused on payment options. Additionally, data reveals that traditional banking institutions are becoming more worried about income loss to more creative companies due to simplified payment services. According to the main conclusions of the PwC Global Fintech Report 2017, this concern increased from 83 percent globally in 2016 to 88 percent globally in 2017. (Kashyap et al. 2017).

However, given the disruptive nature of Fintech, which is growing, 77 percent of banks are looking to increase internal efforts towards innovation and 82 percent anticipate increasing collaborative practises or partnerships within the next three to five years. Evidence suggests that large corporate organisations are typically slow to integrate new technologies (Kashyap et al. 2017). These initiatives include investing in artificial intelligence, allocating more resources to projects connected to fintech, and purchasing or collaborating with fintech businesses, all with the goal of improving operational efficiency to better satisfy client expectations (Kashyap et al. 2017).

Fintech services for payments can be offered from a business to another for the enhancement of operations (B2B) or they can refer to offerings addressed to consumers (B2C). Although it is not a recent development, the move toward a

cashless society is currently experiencing digital disruptions on both the B2B and B2C levels (Gomber et al. 2018). Fintech for payments, in the words of a Forbes Analyst, "means making it easy to pay and to be paid" (McGrath 2018). The undergoing worldwide development on digital payments is moving at an accelerated pace, even though cash has not yet ceased to exist (McGrath 2018).

2.4 Trends

A trend refers to the general direction in which something is changing, developing, or deviating. The trends in contactless payment are changing, notably from a traditional payment technique to now being completely cashless. Apple pay, Alipay, Paypal, and Visa (Credit cards and debit cards), are just few of the options available. These are the contactless payment trends that are affecting the Fintech environment.

2.4.1. Apple pay

Apple Pay is a mobile Fintech payment service that is reliant on both hardware and operating system manufacturers. (Hein B ,2014) It is exclusively compatible with Apple devices and iOS, and, like Samsung Pay, the payment service may be used without unlocking the lock screen, and biometric authentication is accomplished by print recognition. Additionally, information is not exposed externally by making payments through encrypted one-time token information, and security is increased by providing a separate Secure Element (SE) that may independently and securely store sensitive information.

2.4.2 Alipay

Alipay is a mobile Fintech payment service based on a payment platform that may be used regardless of the HW or OS maker (Tang JO, Yu SM 2010) It is a payment service introduced by Alibaba, China's largest e-commerce company, that can be used on any mobile device or operating system. Alipay uses a method in which a unique bar code or Quick Response (QR) code is created on the smart phone screen when the user authenticates, and the payment information delivered to the smart phone is

approved when the cashier scans the code. It does not require high-priced smart phones with fingerprint recognition or NFC for near field communication.

2.4.3 Paypal

PayPal is a mobile POS that allows merchants to make payments rather than users to buy services. (Dwyer B, 2014) While traditional payment services necessitated the installation and maintenance of payment software and hardware such as POS or barcode readers, PayPal Here allows users to pay with credit cards or PayPal accounts by linking with financial institutions via a PayPal here reader attached to normal smart phones. It expanded the variety of payment service by providing an easy payment service for small establishments and places where typical payment services such as POS or barcode readers have not been activated.

Customers can pay for their goods or services using ways other than the common credit card schemes thanks to mobile fintech payment services, which are also known as "Alternative Payment Methods" (APMs) at the B2C level. Digital apps and e-wallets, bank transfers, mobile payments, etc. are some examples of these techniques (Dragt 2018). The majority of worldwide online purchases are still made with credit cards, however the 2017 WorldPay Global Payment Report predicts that by 2021, more than half of all online purchases has been made via APMs (Dragt 2018)

2.4.4 Visa

Visa is a credit card that is used by 60 percent of all foreign credit accounts. Although it does not have its own mobile payment platform, it does offer payment services through Apple Pay, Samsung Pay, and Google Pay. Visa is a financial institution that processes payments by interacting with the user's financial account. The above mobile payment services collaborate with financial systems such as Visa, MasterCard, Amex, and others.

2.5 Security Challenges

A study on malware detection, multi-factor authentication, data breach prevention, and fraud detection and protection are all issues that contactless payment faces. Malware is a major source of concern when it comes to mobile payment security. To detect and prevent malware from propagating, many precautions have been utilized. Security challenges that must be solved for mobile Fintech payment services to develop in the future was classified divided into mutual authentication, authorization, integrity, privacy, atomicity, and availability.

2.6 Privacy information

According to Juang Kang, 2018, such privacy concerns compromise the access of information stored in the system intended to be accessed by the contactless payment application. Information privacy refers to the permission given to an application to access data on the device, such as location data, messages, memory files, use data, and network usage statistics. Access to sensitive personal information within or outside the organization for unanticipated purposes could be a source of privacy problems. Users should be more satisfied with their service experiences if their personal information is secured.

2.7 Performance of payment application

Performance is mostly used to evaluate how people feel after utilizing contactless payment payment services; it allows users to make online transactions at any time and from any location; it also evaluates risk, speed, and authentication while completing an online transaction. According to research on contactless payment adoption, the greater the performance expectation, the more likely people are to use the service. Better contactless application performance in terms of speed, authentication, and network usage could benefit the Fintech industry (Juang Kang, 2018).

2.8 Theoretical Framework

The theoretical constructs of this study are based on the TAM and the IDT. Using these two well-established theories has aided in the development of a solid theoretical foundation for this research. They are two of the most influential theories in defining and forecasting user acceptance and adoption of a new system.

2.8.1 Technology Acceptance Model (TAM)

Davis (1986) created the TAM model to explain user acceptance of new computing technology in the context of an organization. This model was inspired by the Theory of Reasoned Action (Ajzen and Fishbein, 1980). Users' behavioural intentions are suggested by the model to determine actual system use, and users' attitudes toward using impact users' behavioural intentions. Furthermore, consumers' views toward use have been influenced by perceived usefulness and perceived simplicity of use. TAM is a powerful theory for predicting technology acceptance. TAM has been shown in empirical tests to be a reliable model for information technology. TAM has since been widely employed to undertake technology acceptance behaviours in several parts of information technology. TAM could be used to assess consumers' willingness to accept mobile payments. Furthermore, many e-commerce-related studies have used TAM to study how to get consumer approval in e-commerce.

The TAM model incorporates two critical elements: perceived usefulness and perceived ease of use. Perceived usefulness is defined as "the prospective user's subjective likelihood that using a specific application system will improve his or her job performance within an organizational context," while perceived ease of use is defined as "the degree to which the prospective user expects the target system to be free of effort." The TAM model has been widely accepted and validated. Additionally, numerous researchers have adapted the model to meet diverse circumstances.

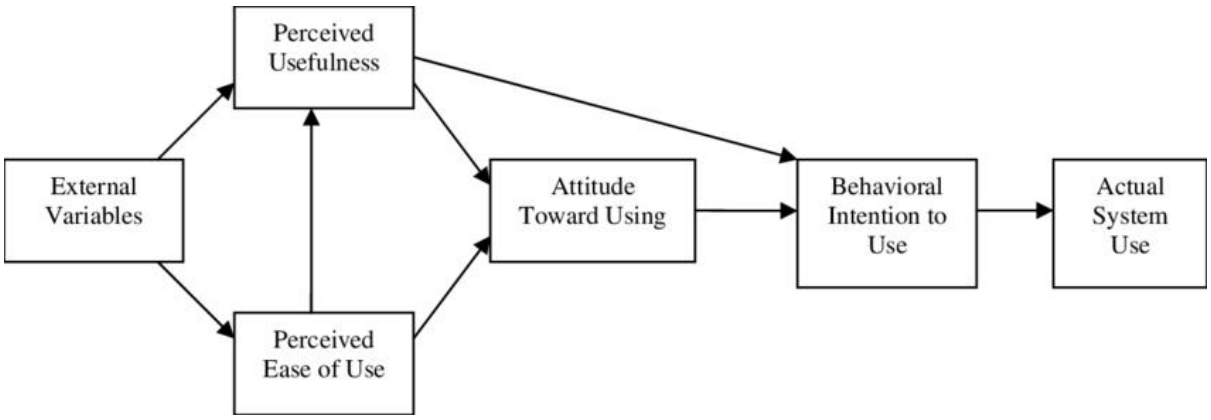

Figure 2.1: Technology Acceptance Model (TAM)

Source: Davis et al. (1989)

Perceived ease of use

A successful user interface design can have an impact on the perceived ease of use of users. Can users pay swiftly and easily? System suppliers must evaluate this question in order to ensure that users can use the systems easily. Usability has long been used to assess information systems. Usability in software products, for example, considers operations, design, and layout to determine how easy software has been for consumers to use and make it do what they want.

Usability research has been going on for almost a century. Understanding and improving the usability of mobile device interfaces is critical for mobile applications. Furthermore, mobile applications present additional challenges and problems for system engineers. Mobile devices offer distinct features such as screen size, resolution, input methods, and so on.

The properties of the systems must be known in order to build and deploy an easy-to-use application. An easy-to-use interface is essential for every programme, particularly mobile ones. This is because mobile devices have distinct properties such as screen size, input techniques, battery consumption, and so on. Design guidelines for mobile applications must be carefully considered by system developers.

Perceived usefulness

Davis et al. (1989) stated that perceived usefulness might be defined as the way a specific system can improve users' work performance. In the context of mobile payments, customers typically want convenience, speed, and other benefits from the systems. A system with a high perceived utility rating would result in a positive user acceptability relationship.

2.8.2 Innovation Diffusion Theory (IDT)

Before an innovation may effectively enter the commercial market, much work must be done to persuade potential adoptors. Individual users will decide whether to accept an innovation based on their knowledge and the performance of the invention. Furthermore, potential adoptors' knowledge and experience with an innovation, as well as the knowledge and experience of their close friends and family, influence the rate of adoption. Diverse adopters, on the other hand, take different approaches to an innovation. Some early adopters has beengin using new items or services as soon as they obtain them. Other adoptors may wait and see, if they are not convinced by the services, they will refuse to take them until they are.

IDT for user adoption is presented by Rogers (1963). This is a well-established idea that many researchers have used in their studies. The hypothesis identifies the innovation decision process and aids in the rate of innovation adoption. Users' acceptance and use of new technology or items are two crucial factors in IDT (Zaltman & Stiff, 1973), and they contribute to the likelihood of innovation adoption and the decision-making process.

According to Rogers (1995), five criteria could explain the acceptance of new technology: relative advantage, complexity, compatibility, trialability, and observability.

Relative Advantage: the degree to which an innovation is perceived as better than the existing product.

Complexity: the degree to which an innovation is perceived as being difficult to understand and use.

Compatibility: the degree to which an innovation is perceived as consistent with existing values and experience of the potential adoptors.

Trialability: the degree to which an innovation can be experimented with before adoption.

Observability: the degree to which the results of an innovation are observable to others.

As previously indicated, these five characteristics have been discovered as predictors of innovation adoption rate.According to Rogers (1995), these five characteristics influence potential adopters' attitudes and intentions during the adoption process. Rogers (1995) emphasises, however, that the traits are conceptually distinct.

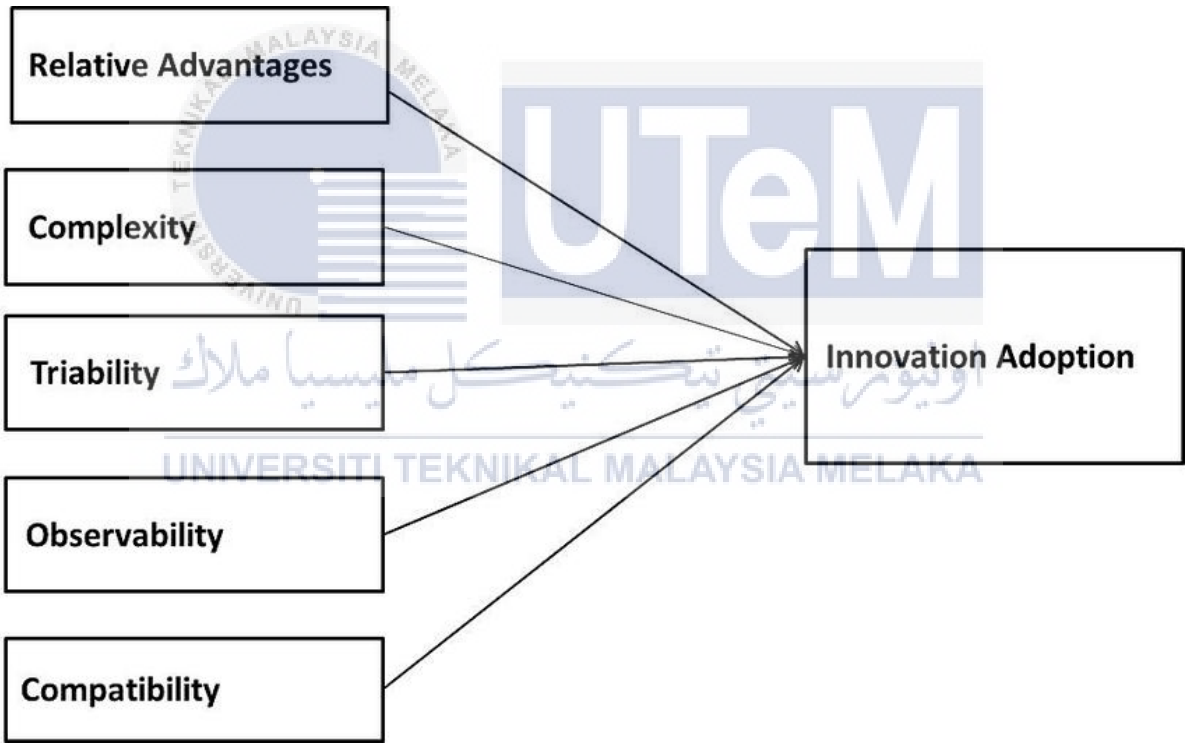

Figure 2.2: Innovation Diffusion Theory (IDT),Rogers 1983

These IDT tools allow for the evaluation of potential adopters' decision making and the prediction of the future of innovations. TAM and IDT have certain constructs in common. Relative advantage is extremely comparable to perceived usefulness in the TAM, and complexity is frequently considered as the TAM equivalent of perceived

ease of use. Previous scholars merged these two hypotheses to provide a more strong and acceptable model than the individual model.

2.8 Conceptual Framework

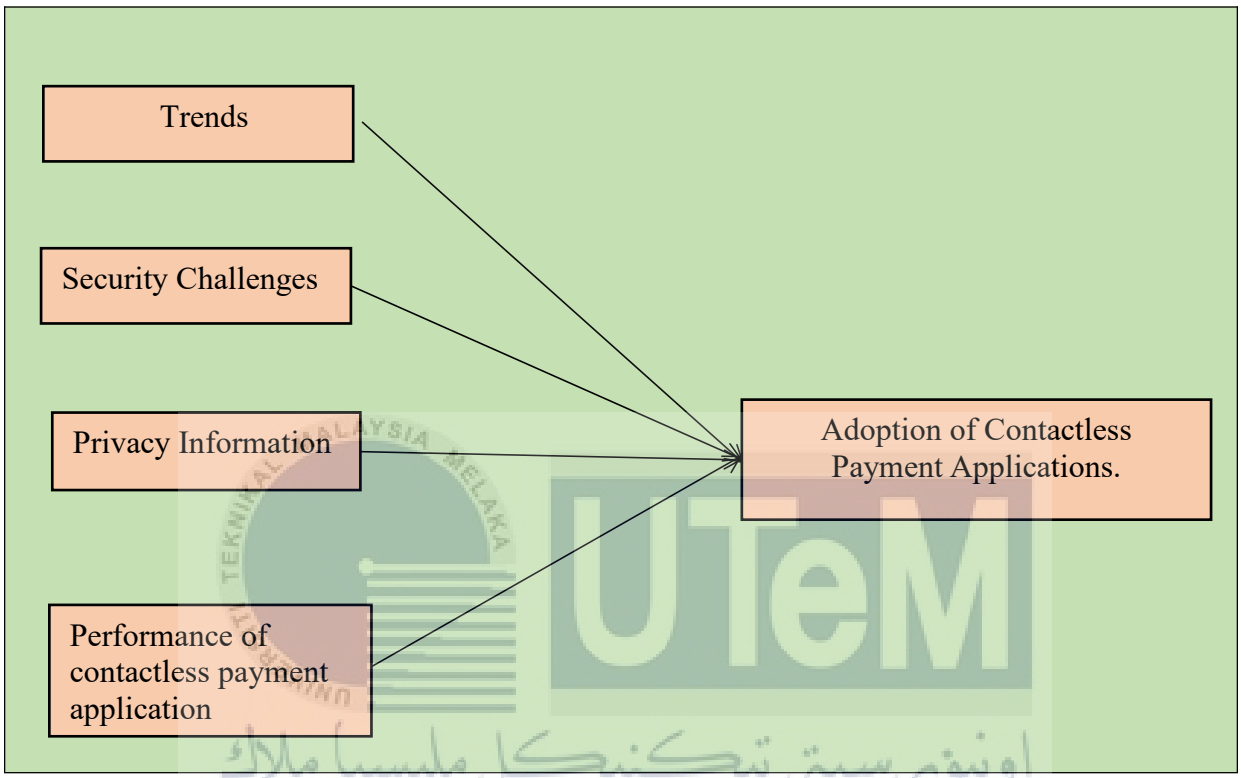

Figure 2.3 : Proposed Research Framework of the Factors that affects Contactless Payment Applications in the Fintech environment.

2.9 Research Hypothesis

H0: There is no significant relation between the Trends and Contactless Payment Application in the Fintech environment.

H1: There is a significant relation between Trends and Contactless Payment Applications in the Fintech environment.

H0: There is no significant relation between the Security Challenges and Contactless Payment Applications in the Fintech environment.

H2: There is a significant relation between Security Challenges and Contactless Payment Applications in the Fintech environment.

H0: There is no significant relation between the privacy information of Contactless Payment Applications in the Fintech environment.

H3:There is a significant relation between the privacy information and Contactless Payment Applications in the Fintech environment.

H0: There is no significant relation between the performance and the Contactless Payment Application in the Fintech environment.

H4: There is a significant relation between the performance and the Contactless Payment Applications in the Fintech environment.

CHAPTER 3

RESEARCH METHODOLOGY

3.1 Introduction

The study will discuss the methodologies used to collect data and information for this research in this chapter. The explanatory research design is created first in order to explain the relationship between the variables. In methodological choice, the quantitative method is chosen. The primary and secondary data sources were used. The following sections has been discussed: research location, research strategy, time horizon, reliability and validity, and data analysis method. With these research methodology procedures, the findings of this study can be better evaluated and understood.

3.2 Research Design

The research design is the overall strategy for how the researcher will approach answering the research questions. It is made up of specific objectives derived from research questions. It also specifies the sources from which the researcher intends to collect data, as well as the method by which the researcher intends to collect and analyse the data. Following that, research design discusses the ethical issues and constraints that the researcher will inevitably face, such as access to data, time, location, and money (Saunders et.al, 2016).

The nature of the research project can be exploratory, descriptive, explanatory, evaluative, or a combination of these. An exploratory study is used to gain a better understanding of a particular issue, problem, or phenomenon. The goal of descriptive

research is to create an accurate profile of events, people, or situations. An explanatory study seeks to learn about a situation or problem in order to explain the relationships between variables. The purpose of an evaluative study is to determine the effectiveness of an organizational or business strategy, policy, programme, initiative, or process.

Because of the nature of this research, the researcher chose an explanatory study. As previously stated by the researcher, an explanatory study focuses on the relationships between variables. The researchers planned to identify the factors and put in place green supply chain management.

3.3 Methodological Choices

Methodological choices for research design include quantitative, qualitative, and mixed techniques. The quantitative method, which creates or uses numerical data, typically employs a questionnaire for data collection and graphs or statistics for data analysis. While a qualitative method employs an interview as a data collection technique and classifying data as a data analysis procedure to generate or use non-numerical data, a quantitative method uses a questionnaire as a data collection technique and categorizing data as a data analysis procedure.

The researchers analyze the relationship among the variables using a quantitative method in this study. To measure and analyze the independent and dependent variables, this method employs a variety of statistical and graphical tools. In general, quantitative research is associated with a deductive method, which focuses on testing theories using evidence. This method conjectures correctly formed theories by connecting them to general principles and definitions using observable facts (John Dudovskiy 2010). Because the relationship has already been established, the researcher will confirm whether the radical relationship exists or not.

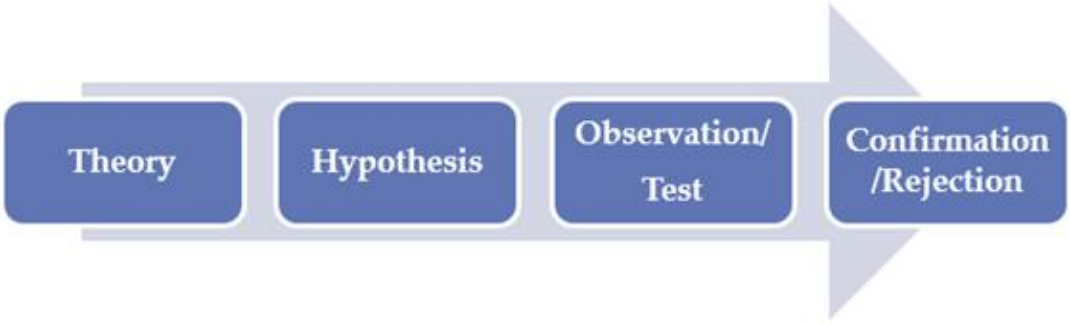

Figure 2.4: Deductive Approach John Dudovskiy 2010

3.4 Primary and Secondary Data Sources

In this research, both primary and secondary data were used. Primary data are data gathered by a researcher through surveys, interviews, or experiments that are specific to the research problem being investigated (Ghauri et al., 2020). The surveys are distributed by the researcher to the respondents. The respondents were asked to respond to questions about their demographics, personalities and lifestyles, awareness and knowledge, intentions, motives, and behaviors.

Secondary data are data that has been collected and made publicly available by government agencies, market research agencies, firms, or other organizations or individuals (Ghauri et al., 2020). They are less expensive and time-saving. Secondary data was gathered from a website and a library database in order to pick acceptable journals, articles, reports, and newspapers as data sources for this study. In addition, the researcher gathered information from books such as Saunders, Lewis, and Thornhill's "Research Methods for Business Students."

3.5 Research Location

This study has been conducted in every Malaysian state by the researcher.To achieve the objective the researcher will distribute the questionnaire in social media such as Facebook, WhatsApp and also Instagram in order to get the respondents. It's because practically everyone has aware of contactless payment apps this is because people are constantly exposed to the new payment trend. The respondents of this research are Generation Y, who are between the ages of 23 to 40, and have a basic understanding of the types and knowledge of contactless payment applications.

3.6 Research Strategy

A research strategy, according to Saunders et al. (2016), is a plan for how a researcher will approach solving their research topic. Some of the approaches employed include experimentation, survey, archival and documentary research, case study, ethnography, action research, grounded theory, and narrative inquiry. The survey strategy is chosen in this investigation. It was straightforward to compare data from a big population using a questionnaire in a survey technique. Because these materials are easily accessible online, the researcher opts for archival or documentary study.

3.6.1 Questionnaire Design

Questionnaires are typically employed in descriptive or explanatory studies (Saunders et al., 2016). It's a quick and easy technique to get replies from a big group of people before doing any quantitative research. The researcher used the internet (an online Google Form) to conduct the survey, and the respondents were asked to respond via web or mobile.

In this study, the researcher used organized inquiry to conduct the investigation. In the first section, Section A, demographic questions such as age, gender, educational level,

and current job title has been asked, while Section B will look into the elements that influence contactless payment in the Fintech environment. The parameters that influence the adoption of contactless payment apps were the focus of Section C. The analyst will do a pre-test of each survey after it has been produced and double-checked, and make any necessary modifications before moving on to the review.

Section	Item
A	Demographic categories ● Age ● Gender ● Race ● Educational level ● Occupation ● Frequency of contactless payment application usage.
B	Factors affecting contactless payment application ● Trends ● Security Challenges ● Privacy Information ● Performance of contactless payment application ●

Table 3.1 questionnaire development

Multiple choice questions and likert scale are applied in the questionnaire. Likert scale in second part and third part are based on five points rating scale, which 1 represented “strongly disagree”, 2 represented “disagree”, 3 represented “neutral”, 4 represented “agree” and 5 represent “strongly agree”.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5

Table 3.2 : Likert scale

3.6.2 Sampling Design

The sampling technique that will be used is simple random sampling. In simple random sampling, each member of the population has an equal and known chance of being the subject of the sample (Kumar et al., 2012). The researcher distribute the questionnaire to the respective respondents via WhatsApp, Instagram,Facebook and Telegram.

The sample size is the number of respondents that the researcher chooses from the population. The sample size is sufficient to conduct the research (Sekaran & Bougie, 2013). In this study, the researcher had chosen the sample size consists of 385 respondents using Krejcie and Morgan (1970).

The researcher selected a representative sample from the total population due to time, financial, and management difficulties to address the whole population. Therefore, the non-probability sampling design was the preferred technique of the researcher to use in this study which is the convenience sampling technique. The rationale for using this sampling method was attributed to easy accessibility and availability of respondents, as well as a less time consuming and economical way of gathering the required data.

Population Size (N)	Sample Size (S)
100	80
200	132
300	169
400	196
500	217
600	234
700	248
800	260
900	269
1000	278
2000	322
3000	341
4000	351
5000	357
6000	361
7000	364
8000	367
9000	368
10 000	370
15 000	375
20 000	377
30 000	379
40 000	380
50 000	381
75 000	382
1 000 000	384

Table 3.3: Determining sample size of a known population

Source: Krejcie and Morgan (1970)

3.6.3 Sampling Techniques

To direct the reviews, this investigation chooses likelihood inspecting. Any strategy for investigating that involves some form of arbitrary choice is referred to as a testing technique. According to (Saunders, Lewis, and Thornhill, 2016), likelihood testing (or delegate testing) is most commonly associated with review investigate systems in which specialists must create derivations from a population example to answer the exploration questions(s) and achieve the examination objective. According to (Simon, 1967), the ever-increasing interest in research has necessitated the development of a reliable method for determining the sample size that is representative of a given

population. The "Little Sample Techniques" of Krejcie and Morgan has been used in this examination to determine test.

S=XNP(1-P)+(N-1)+XP(1-P)

S= required sample size

X= the table value of chi-square for 1 degree of freedom at the desired confidence level

(3.841)

N= the population size

P=the population proportion

d=the degree of accuracy expressed as a proportion

3.7 Time Horizons

Longitudinal studies and cross-sectional studies are the two sorts of time spans. Longitudinal studies involve collecting data over a lengthy period of time. While cross-sectional studies are those that only conduct and collect data once, they can take days, weeks, or months to complete. Because of the time constraints, the researchers chose cross-sectional studies for this study. Within ten months, the researcher must complete Chapters 1 through 5. Only one month is available to complete the data gathering and analysis.

3.8 Data Analysis Method

In this study, the Statistical Package for the Social Sciences has been used to do data analysis (SPSS). The Statistical Package for the Social Sciences (SPSS) is a software package used in factual data analysis. It was developed by SPSS Inc. and acquired by IBM in 2009. The product was officially renamed IBM SPSS Statistics in 2014. The product was primarily intended for sociology, but it has since grown in popularity in a

variety of sectors, including health sciences and, in particular, marketing, statistical surveying, and data mining (Techopedia, 2018). Aside from factual investigation, the offering also offers executive information, allowing the customer to do case determination, inferred information, and record reshaping. Information documentation is another component, which maintains a metadata lexicon with the data file (Techopedia, 2018).

SPSS is a good choice for this study since it can handle a wide range of equations and factual schedules, and information documents may be imported from many projects and updated once a year to keep track of progress. It's critical to remember that, while using various quantifiable programming and projects is necessary, it's also important to avoid drawing outlines by hand or physically verifying that it's not difficult to misuse them. Using the factual data gathered, they may quickly appreciate the enthusiasm for a certain item and, if necessary, adjust their strategy.

3.8.1 Descriptive Statistic

Descriptive statistics is a field of statistics that describes a variety of data properties that are commonly seen in research. The primary goal of descriptive statistics is to summarize the samples and measurements used in a particular study (Lee & Rodney. 2018). In practically all quantitative data analysis, descriptive statistics are used in conjunction with a number of graphic analyses. Descriptive statistics, in essence, describe what the data researcher has shown. The goal of descriptive research is to provide a detailed profile of events, people, or situations. 2016 (Saunders, Lewis, and Thornhill).

Expressive measurements are important in this scenario since the analyst essentially gave the raw data. It's tough to visualize what the data looked like, especially if there was a lot of it. Clear measurements allow analysts to introduce information in increasingly important ways, making deciphering the data easier. The advantage of expressive examinations is that subjects or members are observed in their natural state.

Exploration that is spellbinding can serve as a precursor to future study by identifying factors that can be tested.

3.8.2 Multiple Regression Analysis

The term "different relapse" refers to an expansion of the term "basic direct relapse." When the estimation of a variable is expected to be reliant on the estimation of at least two other factors, this method is used. The needy variable is the variable that we must expect (or here and there, the result, target or measure variable). When predicting a continuous ward variable from diverse free parameters, different relapse examination is used. When a new relapse condition is created, the coefficient of assurance can be used to determine how strong it is (R2). R2 is consistently between 0 and 1 in value. Every time relapse is conducted, every product gives it. The model and gauge are better when the R2 is close to I. Another question is whether the autonomous variables have a meaningful impact on the needed variable. Measurably, evaluating the invalid hypothesis that the relating relapse coefficient is zero is the same as testing the invalid theory that the relapse coefficient is zero. If a relapse coefficient's 1-trial value is high, it means that the variable in question has a significant impact on Y while controlling for other independent informative factors.

R: - coefficient of determination

3.8.3 Correlation

Connection research is a fact-checking technique that considers the quality of a link between two numerically estimated constant components. This type of analysis is useful when an analyst needs to determine if there are any potential relationships between variables. Connection investigation is a factual evaluation approach that considers the strength of a link between two persistent, numerically estimated components. If an analyst needs to draw up probable linkages between components, this type of investigation is useful. If there is a link between the two variables, it

means that a methodical change in one variable will result in an efficient change in the other. If a relationship is discovered, it might be either favourable or negative depending on the deliberate numerical qualities (DJS Research, 2018). One purpose of correlational research is to determine the degree to which two variables are related. The second reason for correlational research is to develop forecast models that allow you to predict future estimations of a variable based on the ebb and flow estimations of at least one other variable.

Coefficient Range	Strength
±0.91 to ± 1.00	Very Strong
±0.71 to ± 0.90	High
± 0.41 to ± 0.70	Moderate
±0.21 to ± 0.40	Small but definite relationship
±0.00 to ± 0.20	Slight, almost neligible

Table 3.4 : Cronbach's Alpha Coefficient Range and Strength of Association

3.9 Pilot Test

A pilot test is a small-scale basic examination conducted to assess plausibility, time, expense, and unfavourable events, as well as improve the investigation structure, prior to the execution of a full-scale research project. A pilot overview is a mechanism for testing a poll with a smaller sample size than the one specified. A poll is directed to a level of the absolute example populace or to an accommodation test in progressively casual circumstances during this overview stage. The lead of a pilot evaluation prior to the huge scale overview of ebb and flow provides the expert with numerous ideal circumstances and areas of interest. One of these is the investigation of specific issues that could potentially have a negative impact on the review's outcomes. These factors include the number of questions available to the target population.

A pilot research also assesses the accuracy of the instructions in order to determine whether all respondents can follow the rules as demonstrated in the pilot study. It also provides more information regarding the review type's suitability for obtaining the investigation's motivation. Pilot reviews, for all intents and purposes, save money-related assets because if flaws are identified right away in the poll or meeting, there is a lower chance of unpleasant consequences or, even worse, you will have to start over after the study has been directed. However, Baker (1994) stated that responses of pilot testing should be deducted 10% to 20% from the true example measure. As a result, experts will select 40% of generation Y out of total population in Malaysia. The specialist will consider the recommendation and input on the study as a result of the pilot test before the real study is formally expected to take place.

3.10 Issues of Reliability and Validity

Heale and Twycross (2015) established that a member completing an instrument intended to gauge inspiration should have fairly comparable reactions each time the exam is completed. Despite the fact that giving an exact count of dependability is beyond the realm of possibility, a gauge of unwavering quality can be achieved through a variety of methods. Cronbach's an is the most commonly used test to determine an instrument's internal consistency. If an analyst could reproduce a previous study strategy and come up with comparable results, that investigation would be considered reliable. The normal of all connections in each mix of split-parts is resolved in this test. This test can be used with instruments that feature questions with more than two responses. Cronbach's alpha is a value between 0 and 1 that indicates how reliable a test is. A quality score of 0.7 or above is considered worthy (Wood G. 2013).

The degree to which a notion is exactly estimated in a quantitative report is referred to as legitimacy. The content validity class is the most important. This class examines if the instrument adequately includes all of the material that it should for the variable (Heale and Twycross, 2015). The validity of the structure refers to whether you can

draw conclusions about the test results associated with the concept under consideration. The last proportion of legitimacy, according to Heale and Twycross (2015), is foundation legitimacy. Any other instrument that estimates a similar variable can be used as a foundation. Relationships can be directed to determine how closely different instruments measure the same variable.

The information in these pages includes experts' knowledge of the issue, as well as assurances that the results are real and reliable. To finish the exam and read as many articles as possible, it was necessary to have a good understanding of the facts. To ensure the investigation's reliability, a few articles and research papers were referred to. It was acquired from the legislature's and authority's official websites and compared to additional private sources to ensure that the information is sufficiently reliable.

3.11 Summary

To put it plainly, this area was for the most part talked about in connection to the exploration techniques utilized in research direct, which incorporates the specialists examined sources and the procedures picked by the analyst. The accompanying part is information investigation, which will decipher and clarify in detail the information got from the survey.

3.12 Conclusion

Taking everything into account, this study has been conducted in Malaysia, with around 385 Generation Y respondents. The goal of this research is to determine which factors influence the contactless payment application. According to Krejcie and Morgan's table, this study will include 385 respondents from Malaysia's Generation Y demographic, which they are 40% of the country's overall population. To verify the precise consequence, this study will use a variety of relapse and relationship techniques.

3.13 Construct of measurement

Constructs	Original Measurement Items	Sources of Measurement	Measurement items Adopted and Adapted for this study.
Trends	1. Using mobile payment services fits my lifestyle. 2. Using mobile payment services fits well with the way I like to purchase product and services. 3. I would appreciate using mobile payment services instead of traditional mode of payment. 4. By using mobile payment services, my	Moore and Benbasat (1991) Plauffe et al. (2001)	1. I trust using contactless payment services fits my lifestyle. 2. I like using contactless payment application fits well with the way I to purchase product and services. 3. I would appreciate using contactless payment application instead of traditional mode of payment. 4. I realized by using mobile payment application, my choice as consumer are improved. 5. I agree trends of contactless payment save time.

	choice as consumer are improved.		
Security Challenges	1. The risk of unauthorized third party overseeing the payment process is low. 2. The risk of abuse of billing information (eg. Credit card number , account data) is low when using mobile payment services 3. I would find mobile payment services secure in conducting my payment transaction. 4. The risk of abuse of usage information (eg. Names of business patners, payment amount) is low when using mobile payment services.	Laurn and Lin (2005) Parasuraman et. al (2005)	1. I understand the risk of unauthorized third party overseeing the payment process is low. 2. I know that the risk of abuse of billing information (eg. Credit card number , account data) is low when using mobile payment services . 3. I would find mobile payment services secure in conducting my payment transaction. 4. I believe the risk of abuse of usage information (eg. Names of business patners, payment amount) is low when using mobile payment services. 5. I believe contactless payment have high risk of security challenges.

Privacy Information	1. Cashless payment application protect my information. 2. The application will help to reduce consumer uncertainty. 3. I trust the applications for any environmental sustainable product and services. 4. Authorization mechanisms of this application make me feel comfortable. 5. I have security on this applications.	Bakos(19997), Mitra et al. (1999) , Milne and Culnan (2004), Chen and Barnes (2007), Hernandez and Mazzan (2007), Youn (2009) Huang and Chun (2010), Lu et. al (2010)	1. I believe that Cashless payment application protect my information. 2. I know the contactless application will help to reduce consumer uncertainty. 3. I trust the applications for any environmental sustainable product and services. 4. I feel comfortable with the authorization of the contactless application. 5. I have security on this contactless payment applications.

Performance of contactless payment application	1. It is easy to become skillful of using mobile payment services. 2. The interaction with mobile payment services is clear and understandable. 3. It is easy to perform the steps required to use mobile payment services. 4. It is easy to interact with mobile payment services.	Bhattacherjee (2001), Davis et.al. (1989) , Taylor and Todd (1995), Venkatesh and Davis (2000)	1. I have become skillful of using mobile payment services. 2. I find it is clear and understandable during interaction with contactless payment application. 3. I find it is easy to perform the steps required to use contactless payment application. 4. I believe it is easy to interact with contactless payment application. 5. I trust performance of mobile payment application make the payment easy.

Adoption of Contactless Payment Applications.	1. Do you agree that the cashless payment is much more convenient? 2. Online payment offers better choices for its users through its features. 3. Application for online payment are not complicated and can be easily understood. 4. I often transact online so I see no problem if this has been permanently added as a mode of payment.	Venies Tinio (2014), Yuan Liu, Shaojian Wang, Xiaoyi Wang (2011)	1. I agree that the cashless payment is much more convenient? 2. I trust contactless payment offers better choices for its users through its features. 3. I believe contactless Applications are not complecated and can be easily understood. 4. I often transact online so I see no problem if this has been permanently added as a mode of payment. 5. I am willing to pay my daily bills using contactless payment application.

Table 3.5 Construct of Measurement

CHAPTER 4

DATA ANALYSIS AND DISCUSSION

4.0 Introduction

This chapter will analyze the finding result of the data that are obtained from SPSS version 27 and the result was collected from 385 respondents. The result has been illustrate using pie chart, graph or any related tools that are suitable to be used. The result has been elaborated further in this chapter that will cover the descriptive analysis of demographic background, Pearson Correlation, Analysis and Multiple Regression Analysis.

4.1 Descriptive Statistics

For the demographic profile, it will measure in items of age, gender, race, education level, occupation, and frequency of contactless payment application usage. It consist of 385 total of respondent and all data collected by google forms.

4.1.1 AGE

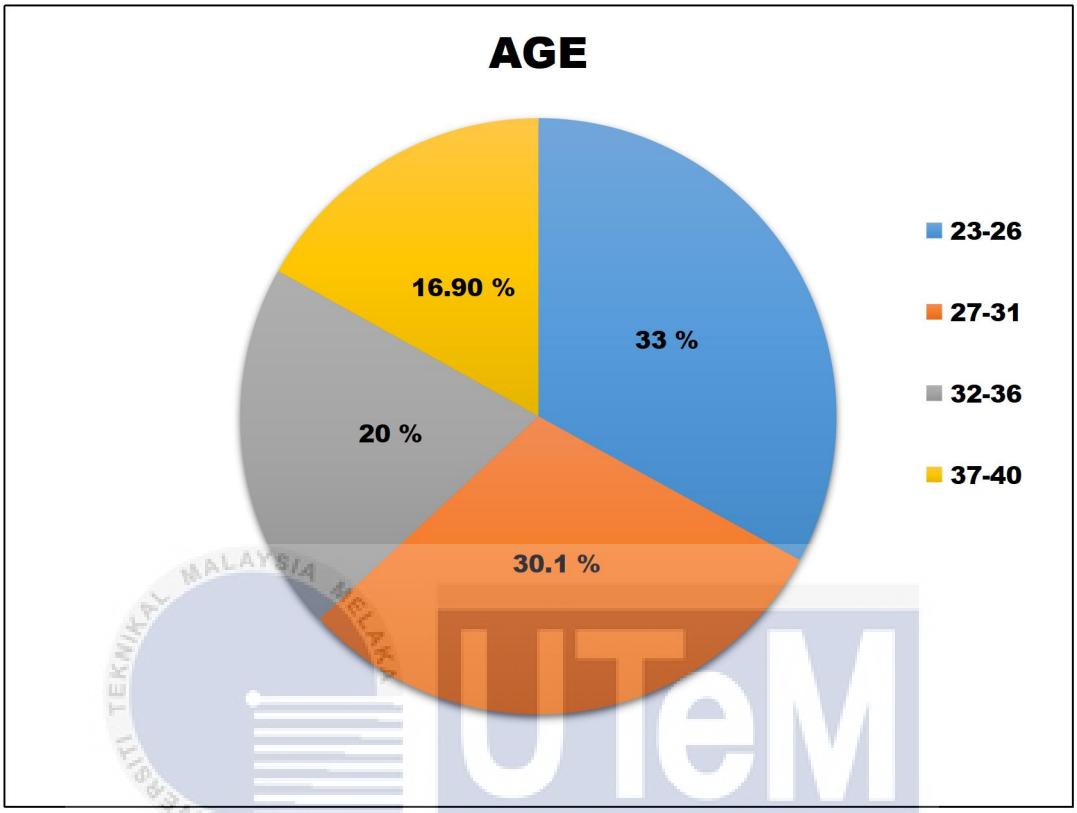

Figure 2.5 Pie Chart of Age

Age	Frequency	Percentage (%)
23-26	127	33.0
27-31	116	30.1
32-36	77	20.0
37-40	65	16.9

Table 3.6 frequency and percentage of age

The focus group of this respondent are the users who are aged 23 until 40 years old. Figure 2.5shows the most of respondent comes from the age 23-26 years old which consist of 33.0 % respondent while 30.1 % of respondent comes from the age group of 27-41 , 20.0 % of respondents were from 32-36

and there were 16.9 %. This can be conclude as the most number of contactless payment application are from the age 23-26.

4.1.2 GENDER

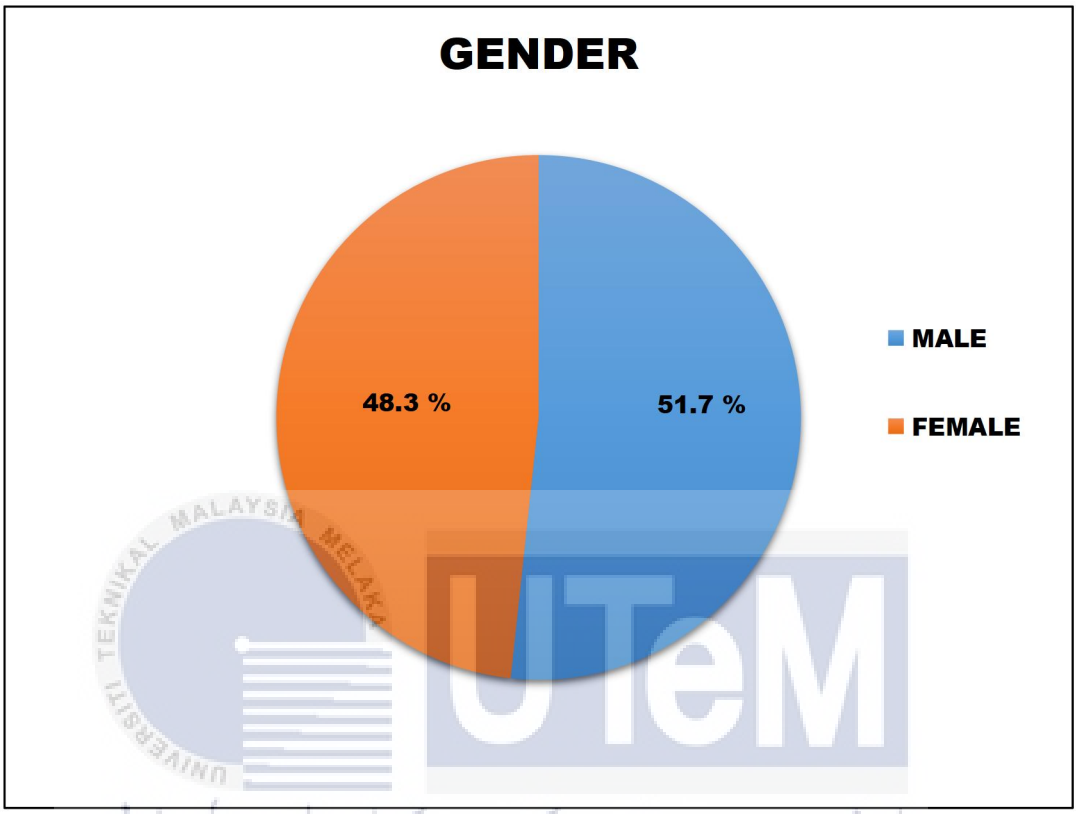

Figure 2.6 Pie Chart of Gender

Gender	Frequency	Percentage (%)
Male	127	51.7
Female	116	48.3

Table 3.7 frequency and percentage of gender

Based on figure 2.6, the sample of respondent being used was 385 which consist of 51.7 (127) from male and 48.3 % from female. The majority of respondents are from male because male are tend to explore the trend of contactless payment application and the use it especially to pay monthly bills.

4.1.3 RACE

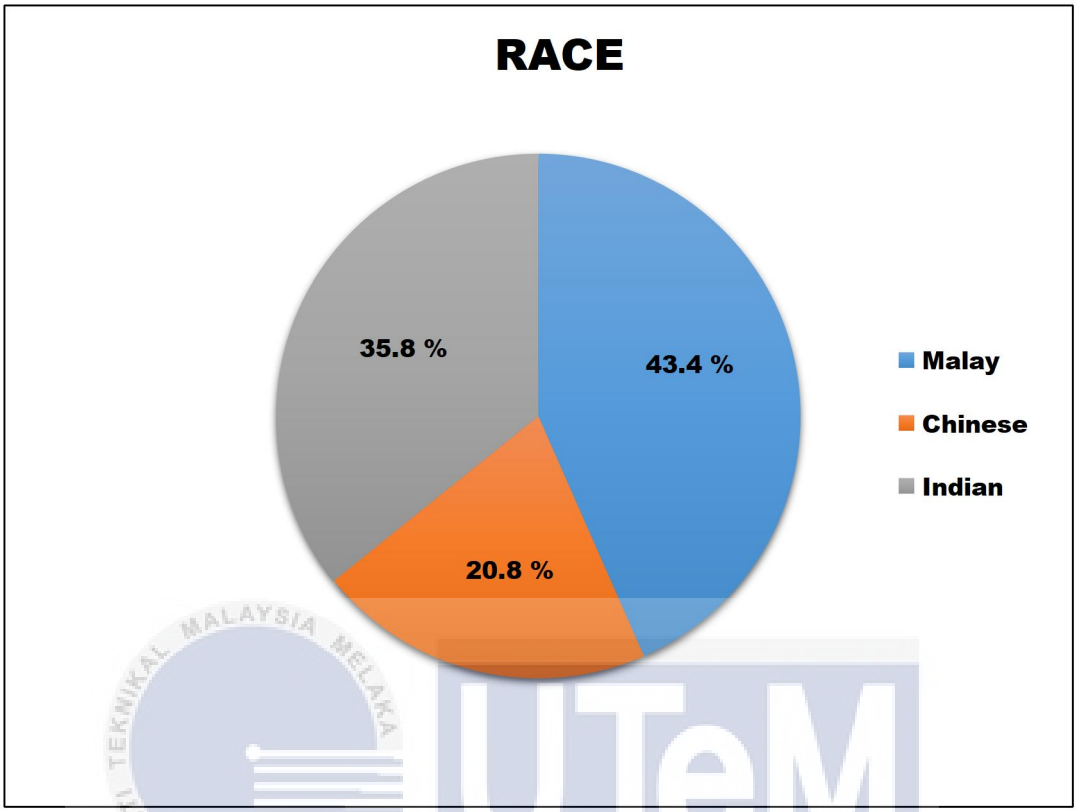

Figure 2.7 Pie Chart of Race

Race	Frequency	Percentage (%)
Malay	167	43.4
Chinese	80	20.8
Indian	138	35.8

Table 3.8 frequency and percentage of Race

Based on figure 2.7, the sample of respondent being used was 385 which consist of 43.4 (167) from Malay, 20.8 % (80) from Chinese and 35.8 (138) from Indian . The majority of respondents are from Malay and followed by Indian. Here it clearly shows that everyone are using contactless applications .

4.1.4 EDUCATION LEVEL

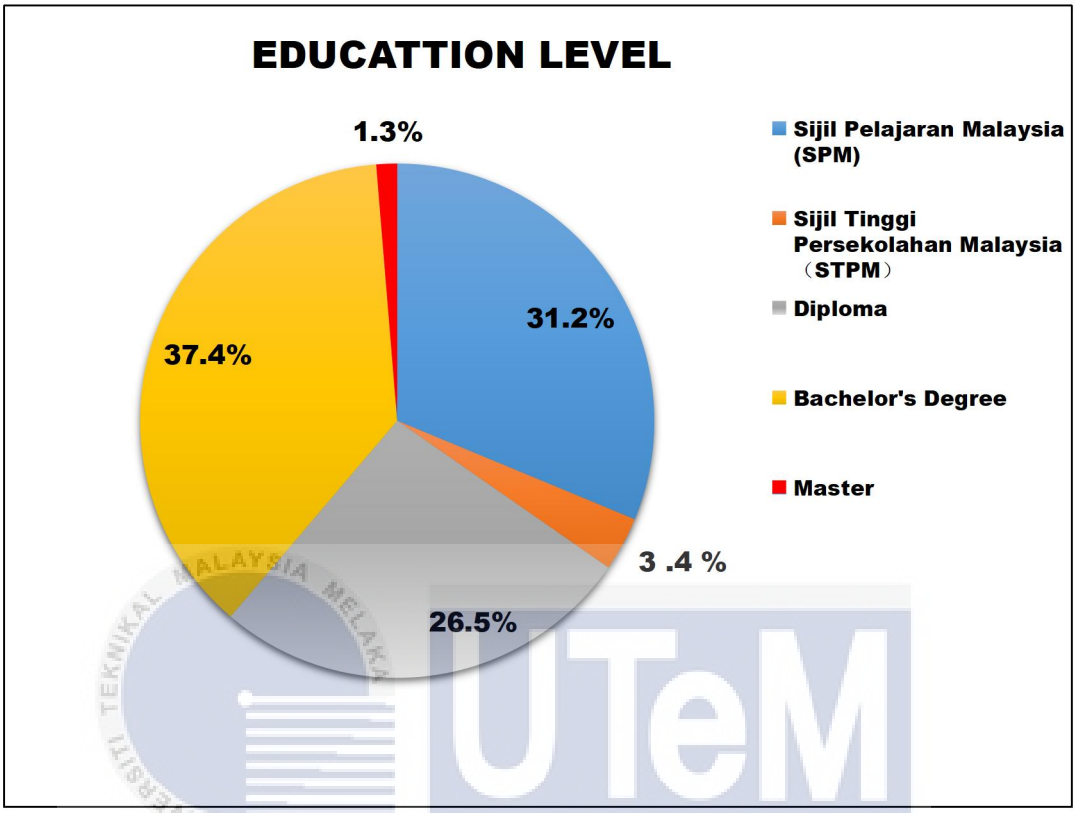

Figure 2.8 Pie Chart of Educational Level

Education Level	Frequency	Percentage (%)
Sijil Pelajaran Malaysia (SPM)	121	31.2
Sijil Tinggi Persekolahan Malaysia（STPM）	13	3.4
Diploma	102	26.5
Bachelor's Degree	144	37.4
Master	5	1.3

Table 3.9 frequency and percentage of Educational Level

Through figure 2.8 the result represent 31.2 % respondents are SPM level, 3.4 % of respondent are STPM level, 26.5% of them are Diploma level and the highest respondent are from bachelors degree and there are also 1.3 % of respondents of master level. Thus, it can be conclude as all level users have aware of contactless payment application and they are able to use it.

4.1.5 OCCUPATION

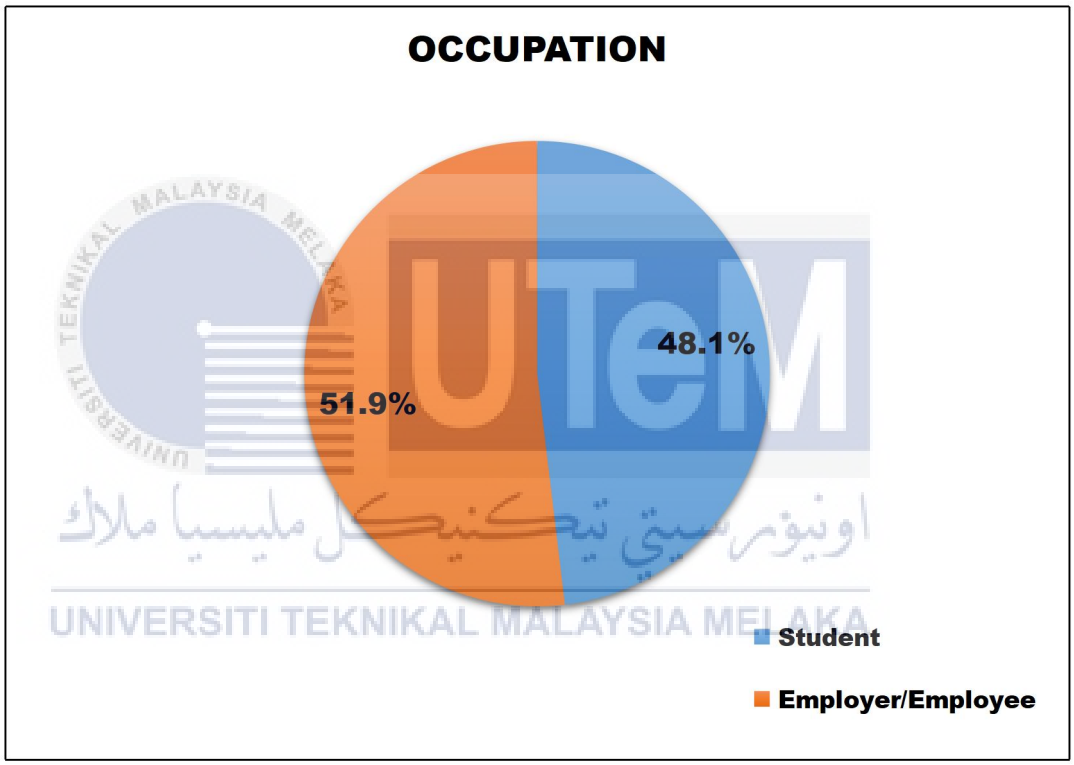

Figure 2.9 Pie Chart of Occupation

Occupation	Frequency	Percentage (%)
Student	185	48.1
Employer/Employee	200	51.9

Table 3.10 frequency and percentage of Occupation

Based on figure 2.9, the sample of respondent being used was 385 which consist of 51.9 % (200) from employer/employee and 48.1 % (185) from

students . The majority of respondents are employer/employee but students also not far behind because this clearly shows as in this era everyone are tend to use those application in paying for real world service such as paying monthly bills, transportation, food delivery and so on.

4.1.6 FREQUENCY OF CONTACTLESS PAYMENT APPLICATION USAGE.

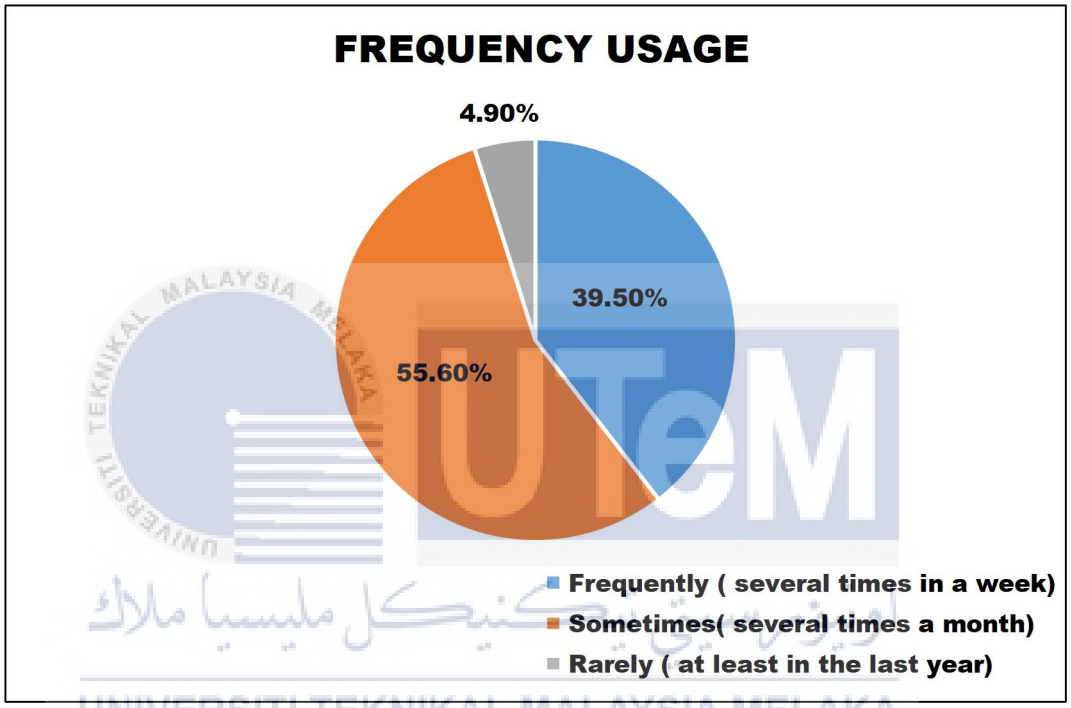

Figure 2.10 Pie Chart of Frequency of contactless payment application usage.

Frequency Usage	Frequency	Percentage (%)
Frequently (several times in a week)	152	39.50
Sometimes (several times a month)	214	55.60
Rarely (at least in the last year)	19	4.90

Table 3.11 frequency and percentage of Frequency of contactless payment application usage.

Figure 2.10 shows the frequency of contactless payment application usage among users. There a 55.60 % users use contactless payment Sometimes (several times a month), followed by 39.50 % users who tend to use Frequently (several times in a week) and there also 4.90 % of users Rarely (at least in the last year).

4.2 Descriptive Analysis

4.2.1 Descriptive Statistics for Trends

Descriptive Statistics					
	N	**Minimum**	**Maximum**	**Mean**	**Std. Deviation**
I trust using contactless payment services fits my lifestyle.	385	2	5	3.60	.526
I like using contactless payment application, it fits well with the way to purchase product and services.	385	2	5	3.22	.465
I would appreciate using contactless payment application instead of the traditional mode of payment.	385	2	5	3.53	.563
I realized by using mobile payment application, my choice as consumer are improved	385	1	5	3.20	.589
I always aware regarding the functionality of contactless payment	385	2	5	3.30	.855
Valid N (listwise)	385				

Table 3.12 Mean and Standard Deviation of Trends

Table 3.12 shows the means and standard deviation of Trends among 385 respondents. Based on the results, it implies that all respondents agree with all trends of contactless payment applications questions set out in the

questionnaire. I trust using contactless payment services fits my lifestyle has a mean of 3.60 and a standard deviation of 0.526 Next, I like using contactless payment application, it fits well with the way to purchase product and services.with a mean of 3.22 and a standard deviation of 0.465. Besides, I would appreciate using contactless payment application instead of the traditional mode of payment. with a mean of 3.53 and 0.563 of standard deviation. Next, I realized by using mobile payment application, my choice as consumer are improved where the mean is 3.20 and the standard deviation is 0.589. Lastly, whereas the mean of 3.30 and standard deviation 0.855 of respondents have agreed with the statement of I always aware regarding the functionality of contactless payment.

4.2.2 Descriptive Statistics for Security Challenges

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
I know that the risk of abuse of billing information (eg. Credit card number , account data) is low when using mobile payment services .	385	2	5	2.45	.529
I would find contactless payment application secure in conducting my payment transaction.	385	2	5	2.60	.537
I believe the risk of abuse of usage information (eg. Names of business partners, payment amount) is low when using a contactless payment application.	385	2	5	2.50	.573
I believe contactless payment have high risk of security	385	2	5	3.99	.382
I believe contactless payment application protected my privacy.	385	2	5	3.70	.546
Valid N (listwise)	385				

Table 3.13 Mean and Standard Deviation of Security Challenges

Table 3.13 shows the means and standard deviation of Security Challenges among 385 respondents. Based on the results, it implies that all respondents agree with all Security Challenges of contactless payment applications questions set out in the questionnaire. I know that the risk of abuse of billing information (eg. Credit card number , account data) is low when using mobile payment services has a mean of 2.45 and a standard deviation of 0.529 Next, I would find contactless payment application secure in conducting my payment transaction with a mean of 2.60 and a standard deviation of 0.537. Besides, I believe the risk of abuse of usage information (eg. Names of business partners, payment amount) is low when using a contactless payment application with a mean of 2.50 and 0.573 of standard deviation. Next, I believe contactless payment have high risk of security where the mean is 3.99 and the standard deviation is 0.382. Lastly, whereas the mean of 3.70 and standard deviation 0.546 of respondents have agreed that I believe contactless payment application protected my privacy.

4.2.3 Descriptive Statistics for Privacy Information

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
I believe contactless payment application protect my personal information.	385	2	5	3.16	.464
I know the contactless application will help to reduce consumer uncertainty.	385	2	5	3.25	.505
I feel comfortable with the authorization of the contactless application.	385	2	5	3.48	.617
User presented with prominent privacy information (those in the privacy information condition) has been more likely that have better privacy policies.	385	2	5	3.00	.748

I am confident in using the contactless payment application for any transaction.	385	2	5	3.18	.445
Valid N (listwise)	385				

Table 3.14 Mean and Standard Deviation of Privacy Information

Table 3.14 shows the means and standard deviation of Privacy Information among 385 respondents. Based on the results, it implies that all respondents agree with all privacy information of contactless payment applications questions set out in the questionnaire. I believe contactless payment application protect my personal information has a mean of 3.16 and a standard deviation of 0.464. Next, I would find contactless payment application secure in conducting my payment transaction with a mean of 3.25 and a standard deviation of 0.505 Besides, I feel comfortable with the authorization of the contactless application with a mean of 3.48 and 0.617 of standard deviation. Next, User presented with prominent privacy information (those in the privacy information condition) has been more likely that have better privacy policies where the mean is 3.00 and the standard deviation is 0.748. Lastly, I am confident in using the contactless payment application for any transaction with the mean of 3.18 and the standard divation of 0.445.

4.2.4 Descriptive Statistics for Performance of contactless payment application

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
I find contactless payment application is always provides a updated version.	385	2	5	3.23	.484
I find contactless payment is easy to operate and safe time.	385	2	5	3.66	.573

I find contactless payment application provides guidelines for the first time users.	385	2	5	3.66	.635
I understand contactless payment application provides an immediate virtual assistance to guide the user to familiarize with online transaction.	385	2	5	3.25	.856
I find it is clear and understandable during interaction with contactless payment application.	385	2	5	3.36	.609
Valid N (listwise)	385				

Table 3.15 Mean and Standard Deviation performance of contactless payment application

Table 3.15 shows the means and standard deviation of Performance among 385 respondents. Based on the results, it implies that all respondents agree with all performance of contactless payment applications questions set out in the questionnaire. I find contactless payment application is always provides a updated version. a mean of 3.23 and a standard deviation of 0.484. Next, I find contactless payment is easy to operate and safe time with a mean of 3.66 and a standard deviation of 0.573 Besides,I find contactless payment application provides guidelines for the first time users with a mean of 3.66 and 0.635 of standard deviation. Next, I understand contactless payment application provides an immediate virtual assistance to guide the user to familiarize with online transaction where the mean is 3.25 and the standard deviation is 0.856. Lastly, I find it is clear and understandable during interaction with contactless payment application with the mean of 3.36 and the standard divation of 0.609.

4.2.5 Descriptive Statistics for Adoption of contactless payment application

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
I have become skillful of using mobile payment services.	385	2	5	3.13	.486
I trust contactless payment offers better choices for its users through its features.	385	2	5	3.89	.384
I believe contactless Applications are not complected and can be easily understood.	385	2	5	4.42	.800
I often transact online so I see no problem if this has been permanently added as a mode of payment.	385	2	5	3.77	.566
I am willing to pay my daily bills using contactless payment application.	385	2	5	4.37	.819
Valid N (listwise)	385				

Table 3.16 Mean and Standard Deviation of contactless payment application

Table 3.16 shows the means and standard deviation of Adoption among 385 respondents. Based on the results, it implies that all respondents agree with all adoption of contactless payment applications questions set out in the questionnaire. I have become skillful of using mobile payment services a mean of 3.13 and a standard deviation of 0.486. Next, I trust contactless payment offers better choices for its users through its features with a mean of 3.89 and a standard deviation of 0.384 Besides, I believe

contactless Applications are not complected and can be easily understood. with a mean of 4.42 and 0.800 of standard deviation. Next, I often transact online so I see no problem if this has been permanently added as a mode of payment where the mean is 3.77 and the standard deviation is 0.566. Lastly, I am willing to pay my daily bills using contactless payment application with the mean of 437 and the standard deviation of 0.819.

4.2.6 Summary of descriptive statistics

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
Trends	385	2.00	5.00	4.069	.622
Security Challenges	385	2.00	5.00	4.348	.681
Privacy Information	385	2.00	5.00	4.211	.677
Performance	385	2.00	5.00	4.030	.672
Valid N (listwise)	385				

Table 3.17 summary of descriptive statistics

This is the summary table of descriptive statistics, where the researcher extract the results of all the indipendent variables and dependent variables to identify the overall mean and standard deviation. The mean of trends questions that has been distributed to 385 respondents is 4.069 which its standard deviation is 0.622. Next is the security challenges which it has the mean value of 4.348 and standard deviation of 0.681. Besides privacy information shows the mean results as 4.211 and the standard deviation is 0.677. the fourth independent variable is performance which it reflects to the perforrrmace of contactless payment application the mean value of it is 4.030 and it has standard deviation of 0.672. lastly the dependent variable which is adoption of contactless payment application has 3.914 as mean value and the standard deviation is 0.440.

4.3 PILOT TEST

Pilot test is the initial steps before a researcher dispersed the survey. Essentially motivation behind pilot test for discovering the legitimacy of the inquiries structured by researcher to ensure the respondents comprehends the inquiries as well as can address the inquiries with great learning about this exploration. From the pilot test researcher can check whether the inquiries can make the respondents feel great or not with that question. For this examination, the respondent dispersed 30 set of questionnaire to respondents as the pilot test. The official poll just disseminated after the aftereffect of pilot test is dependable. The Cronbach's Alpha outcome for the pilot test are 0.938. in pilot test, the base is an incentive for each Cronbach's Alpha is more than 0.7 is the better. So from the outcome, we can finish up the pilot test directed considered legitimate because of the acknowledged outcomes for unwavering quality test is more than 0.60.

Reliability Statistics	
Cronbach's Alpha	**N of Items**
.938	**25**

TABLE 4.1: Reliability Statistics for Pilot Test

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.938	.939	25

Table 4.2: Reliability processing statistics for pilot test

4.4 Reliability Analysis

Analyzing reliability means being consistent. It is the degree to which an instrument at different times will deliver similar results for the same people, Reliability can take 0 to 1.0 values.

Variables	Number of Items	Cronbach's Alpha
Trends	5	0.903
Security Challenges	5	0.771
Privacy Information	5	0.747
Performance of contactless Payment Application	5	0.782
Adoption of Contactless Payment Application	5	0.766

TABLE 4.3 : Reliability Analysis for all Variables.

Table shows the reliability value for all variables that has been tested in this study. The Cronbach's Alpha for Trends is 0.903. Second, the alpha value for security challenges and privacy information were 0.771 and 0.747 respectively which the both variables were used 5 items to measuered. Furthermore the 5 items from performance of Contactless Payment Application we used to measure and the value for this variable is 0.782.

From this analysis, it shows that all 4 independent variables has a very googd reliability in determine adoption as all value is more than 0.7. lastly, the alpha value for dependent variable is 0.766 where it also used 5 items to measured. According to all the measurement for each item, all the items are reliable and consistent internally.

4.5 Inferential Analysis

The main purpose of this analysis is to reach a conclusion from the sample observation and analysis about the population. This analysis is made up of Pearson Correlation Analysis and Multiple Regression Analysis and this being measured using SPSS version 27.

4.5.1 Pearson Correlation Analysis

The connection coefficient of Pearson is a factual proportion of the quality of a combined information direct relationship. This investigation has been utilized by analyst to gauge quality connection between (trends, security challenges, privacy information and performance of contactless payment) and dependent variable (adoption of contactless payment applications) is critical at the 0.01 dimension (2-tailed). This demonstrates there are certain related between autonomous variable and ward variable. Table 4.5 demonstrates the outline of Pearson investigation.

Correlation Coefficient (r)	Strength of the relationship
<0.20	Slight, almost no relationship
0.21-0.35	Low correlation
0.36-0.60	Moderate Positive
0.61-0.80	Strong Positive
0.90-1.00	Very Strong Positive

Table 4.4 Strength of the Correlation Coefficient

Variables	Correlation	Relationship
Trends	0.737**	Strong positive
Security Challenges	0.822**	Strong positive
Privacy Information	0.786**	Strong positive
Performance of contactless Payment Application	0.766**	Strong positive

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

Table 4.5 : Summary of Pearson Correlation analysis

4.5.2 Multiple Regression Analysis

The multiple regression has been done to determine the most significant factor or variable that affect adoption of contactless payment application among the users. There are four independent variable were tested (trends, security challenges, privacy information and performance of contactless payment application) following with the dependent variable (adoption of contactless payment application). on the intention to analyze the most significant factor that influence the Contactless Payment application.

Objective 2 : To study the most significant factor influence the contactless Payment application.

Model Summary				
Model	**R**	**R Square**	**Adjusted R Square**	**Std. Error of the Estimate**
1	**.887[a]**	**.786**	**.772**	**1.55548**

Table 4.7 Model summary

a. **Predictors:** (Constant), Trends, Security Challenges, Privacy Information, and performance of contactless payment application.

b. Dependent Variable: Adoption of contactless payment application

Based on the table 4.7, the result shows that the R = 0.887 and the R square is 0.786. it represents about 78.6% of the dependent variable (adoption of contactless payment application) can be describes by the variance in all independent variables (Trends, Security Challenges, Privacy Information, and performance of contactless payment application).

ANOVA[a]						
Model		**Sum of Squares**	**df**	**Mean Square**	**F**	**Sig.**
1	**Regression**	926.085	4	132.298	54.680	.000[b]
	Residual	251.629	380	2.420		
	Total	1177.714	384			

Table 4.8 ANOVA analysis

a. Dependent Variable:Adoption of contactless payment application

b. Predictors: (Constant),Trends, Security Challenges, Privacy Information, and performance of contactless payment application.

Table 4.8 shows ANOVA table that compared only the intercept with the overall model's significance. Giving the model an F-test result. This is almost always significance, even though the model explains only a small amount of variance. The table- based meaning value is 0.000, which is less than 0.001. thus the overall significance model is 54.680.

Coefficients[a]					
Model		**Unstandardized Coefficients**	**Standardized Coefficients**	**t**	**Sig.**
		B	**Beta**		
1	**(Constant)**	-0.667		-.484	.629
	Trend	0.168	.143	1.748	.083
	Security Challenge	0.404	.392	6.223	.000
	Privacy Information	0.315	.271	3.818	.000
	Performance of contactless payment application	0.290	.323	4.268	.177

Table 4.9 Coeffient analysis

a. Dependent Variable: Adoption of contactless payment application

From the table 4.9 the most significance factor that influence the adoption of contactless payment application has been shown in the table. When the most significance value of certain value is less than 0.05, means the variable can be used to predict the dependent variable (adoption of contactless payment application). 2 variables which security challenges and privacy information shows positive correlation with adoption of contactless payment application where the p-value is less than 0.05, which are 0.000 and 0.000 respectively. This analysis will then show the equation that can be used to determine the statistical meaning of independent variable to dependent variable.

Thus,

Regression equations :

$$\mathbf{Y = -0.667 + 0.168}X_1 \mathbf{+ 0.404}X_2 \mathbf{+ 0.315}X_3 \mathbf{+ 0.290}X_4$$

Y = Adoption of contactless payment application

X_1 **= Trends**

X_2 **= Security Challenges**

X_3 **= Privacy Information**

X_4 **= Performance of contactless payment application.**

Overall the result of standardized coefficient indicates that the most influential factor that affects adoption of contactless payment application is Security challenges which the $\beta = 0.404$, $t (385) = 4223$, $p<0.05$. This result indicates that adoption toward contactless payment application affected by security challenges by 40.4 %. followed by privacy information is $\beta = 0.315$, $t (385) = 3818$, $p<0.05$. here is explain that the adoption towards contactless payment application is also affected by 31.5%. According to the interpretation the researcher found the most significant factor that affects adoption of contactless payment application is security challenges.

4.6 Summary of Hypothesis Analysis

Hypothesis	Correlation Coefficient (R)	*p*-VALUE	Result
There is significant relation between Trends of Contactless Payment Applications in the Fintech environment.	**0.759****	**0.083**	**Rejected**
There is significant relation between Security Challenges of Contactless Payment Applications in the Fintech environment.	**0.737****	**0.000**	**Accepted**
There is significant relation between the privacy information of Contactless Payment Applications in the Fintech environment.	**0.822****	**0.000**	**Accepted**
There is significant relation between the performance of the Contactless Payment Applications in the Fintech environment.	**0.766****	**0.177**	**Rejected**

Table 4.6 Summary Hypothesis Analysis

H0: There is no significant relation between the Trends and Contactless Payment Application in the Fintech environment.

H1: There is a significant relation between Trends and Contactless Payment Applications in the Fintech environment.

Hypothesis 1 the relationship between trends and adoption of contactless payment application is examined. To determine whether this hypothesis should be accepted, a multiple regression analysis is conducted, and the results are analyzed. H1 was rejected and not significant (β =0.168, t = 1.748, p-value = 0.083). According to hypothesis testing, there was no connection between trends and adoption of contactless payment application. As a result, the theory was rejected.

COVID-19's effects, underlining both the pandemic's significant economic effects as well as the necessity for many people, organizations, and governments to quickly "digitalize" and adopt new technology. A move to remote labour, less in-person interactions, and a sharp rise in online transactions resulted from the introduction of social distancing policies and stay-at-home orders (e.g., online shopping, online services such as telehealth). 'Digital-only' has become the new standard for many transactions. For instance, traditional banks were under pressure to switch to digital platforms (e.g., Burton, 2020; Alix, 2020), but not all clients, particularly the elderly and those without internet access, had access to or were able to use them. While there is still a dearth of academic research on the convergence of IS. However trends of fintech application are now apart of the users life, so this hypothesis tells that there are no significance towards the adoption of contactles application. Like it or not all the users should adopt this in their daily lives.

H1: There is no significant relation between Trends and Contactless Payment Applications in the Fintech environment.

H0: There is no significant relation between the Security Challenges and Contactless Payment Applications in the Fintech environment.

H2: There is a significant relation between Security Challenges and Contactless Payment Applications in the Fintech environment.

Hypothesis 2 the relationship between security challenges and adoption of contactless payment application is examined. To determine whether this hypothesis should be accepted, a multiple regression analysis is conducted, and the results are analyzed. H2 was accepted and significant ($\beta = 0.404$, $t = 6.223$, p-value = 0.000) and the p-value less than 0.05. Since of these findings, the hypothesis is validated because the majority of users are aware of and knowledgeable about security challenges in fintech application during their transaction via online. Consequently, the theory was accepted.

Security Challenges has been an important factor for the user in adopting the contactless payment application. This is because most probably users will always have the insecurity feel during conducting their transaction. So the researcher has to investigate how far the security challenges has been affects the users in adopting the contactless payment application. According to Rekha Sharma,the security challenges are restricting the users to adopt the FinTech approaches and services and the state-of-the-art corresponding solutions are required to ensure the delivery of quality services and other technical dimensions. Perhaps the service providers can properly address this significant issue in order to safeguard sensitive data from hackers and win the trust of the FinTech community. As security challenges of contactless payment application positively reflects towards the adoption, the researcher hypothesize that :

H2: There is a significant relation between Security Challenges and Contactless Payment Applications in the Fintech environment.

H0: There is no significant relation between the privacy information and Contactless Payment Applications in the Fintech environment.

H3:There is a significant relation between the privacy information and Contactless Payment Applications in the Fintech environment.

Hypothesis 3 the relationship between privacy information and adoption of contactless payment application is examined. To determine whether this hypothesis should be accepted, a multiple regression analysis is conducted, and the results are analyzed. H3 was accepted and significant ($\beta = 0.315$, $t = 3.818$, p-value = 0.000) and the p-value less than 0.05. Since of these findings, the hypothesis is validated because the majority of users are aware of and knowledgeable about privacy information in fintech application during their transaction via online. Consequently, the theory was accepted.

Most of the user will always have doubt on their privacy information has been shared to strangers during online transaction. So this will affects their thought in adopting contactless payment application in their daily life.According to Fortney, Consumers are worried about the privacy of their data, but they're also kind of holding their main bank responsible for making sure that these things are done in a way that respects their privacy. As privacy information of contactless payment application positively reflects towards the adoption, the researcher hypothesize that :

H3: There is a significant relation between the privacy information and Contactless Payment Applications in the Fintech environment.

H0: There is no significant relation between the performance and the Contactless Payment Application in the Fintech environment.

H4: There is a significant relation between the performance and the Contactless Payment Applications in the Fintech environment.

Hypothesis 4 the relationship between performance of contactless application and adoption of contactless payment application is examined. To determine whether this hypothesis should be accepted, a multiple regression analysis is conducted, and the results are analyzed. H1 was rejected and not significant (β =0.290, t = 4.268, p-value = 0.177). According to hypothesis testing, there was no connection between trends and adoption of contactless payment application. As a result, the theory was rejected.

Performance expectancy is discovered to be the primary predictor of the Unified Theory of Acceptance and Use of Technology, according to Venkatesh et al. (2003).Performance has been theoretically defined by a number of characteristics related to the system's effectiveness, swiftness, and accuracy in task completion (Venkatesh et al., 2012). When there are constraints in place to lower the possibility of infection, cashless transactions are strongly preferred. The adoption of FinTech services become the norm after habits of dependence on digital services are developed, and FinTech will continue to be highly relevant beyond the epidemic.like it or not, the users should adopt to the performance of contacless payment application.

H4: There is no significant relation between the performance and the Contactless Payment Applications in the Fintech environment.

4.7 Discussions of Findings

From the reliability analysis, it shows that all 4 independent variables have a very good reliability in determine adoption as all value is more than 0.7. Lastly, the alpha value for dependent variable is 0.766 where it also used 5 items to measured. According to all the measurement for each item, all the items are reliable and consistent internally.

This descriptive statistics results shows, security challenges stands the higher mean of 4.348 where standard deviation with a 0.681. Privacy information has a mean of 4.211 and standard deviation 0.677. Trends has a mean 4.069 and standard deviation 0.622. Performance found out to have a mean with 4.030 and standard deviation which 0.672.

The Pearson Correlation Analysis shows the correlations between all independent variables which are trends, security challenges, privacy information and performance and the dependent variable which is adoption of contactless payment application. Firstly, the correlation between IV1 (trend) and DV (adoption of contactless payment application) is 0.737, thus it's indicated as a strong correlation among those variables, Secondly, the correlation between IV2 and DV is 0.822 which is indicates as strong positive between anaerobic digestion and young entrepreneur's business performances. Thirdly, the correlation between IV3 and DV is 0.786 which is indicates as strong positive between animal feeding and young entrepreneur's business performances. Lastly is the correlation between IV 4 (performance) and DV (adoption of contactless payment application) is 0.766 which is also represent as strong positive correlation among those variables.

To determine the most significant factors that influence business performances, multiple regression analysis has been conducted. Based on the table 4.7, the result shows that the R = 0.887 and the R square is 0.786. it represents about

78.6% of the dependent variable (adoption of contactless payment application).

The ANOVA table illustrates results by comparing only the intercept with the overall significance of the model. As a result, the overall significance is (54.680). This section examines the second research objective which is to study the most significant factor influence the contactless payment application.

According to the coefficient table, security challenges affecting the adoption of contactless payment application by a coefficient of (β = 0.404, t = 6.223). As a result, security challenges has a beta value of 0.392, the highest value among the other variables. Privacy information is the second variable affecting the adoption of contactless payment application (β =0.315, t = 0.3818) performance is the third variable that has the least effect on adoption of contactless payment application (= 0.290, t = 4.628). Trends has the least affection on contactless payment application (= 0.168, t = 0.1748).

To sum up, the standardized coefficient results show that security challenges is the most influential factor affecting contactless payment application, with the β = 0.404, t (385) = 6.223, p<0.05.

4.8 Summary

This chapter has been discuss about the data analysis and discussion. It consist of descriptive analysis, reliability analysis, inferential analysis which that includes Pearson correlation analysis and multiple regression analysis. The researcher have been analyze the data by using SPSS version 27 and the results are useful to be used in further discussion. For the next chapter, the researcher will explain on the conclusion of the this research, implication and recommendation of the study.

CHAPTER 5

CONCLUSION

5.1 Introduction

This chapter will go over the facts and data from this study's conclusion. All of the findings are detailed in Chapter 4. The researcher will also make suggestions and recommendations for further research. Furthermore, the findings of this study can be leveraged by businesses to raise awareness and acceptance of contactless payment applications. Finally, researchers will explore research limitations and involvement, which will help future researchers offer better and more accurate results.

5.2 Conclusion

Due to the rapid development of IT technology and the increased need for easy payment ways, contactless payment services that were previously offered only by financial institutions have lately evolved into a variety of mobile Fintech payment services. The first objective of this study was met by conducting a literature review and developing a framework consisting of four elements: trends, security challenges, privacy information, and the performance of a contactless payment application. The second objective of this research is to investigate the most significant factors that influence the contactless payment application. This objective has been achieved by data analysis using SPSS, and the study's findings reflect the relationship between the factors impacting and the adoption of contactless payment applications. Finally, multiple regression analysis (MRA) using SPSS was used to answer the third objective, and the study found that security challenges are the most influential factor influencing the adoption of contactless payment applications.

5.3 Limitation of Study

Although the researcher completes this research project, there are several constraints encountered during the procedure. The previous constraint is to continue data collection. Because the researcher is aware that the execution of data collection may be incorrect, the researcher has only little experience in primary data collecting. As a result, the researcher consulted with the her supervisor and learned about the previous questionnaire survey model. Before reaching an extensive audience, the researcher conducted a pilot study to confirm the reliability of the questionnaire survey for data gathering.

Furthermore, the researcher had challenges with the research topic. This is because the majority of research studies are entirely dependent on mobile payment or mobile payment applications. There are fewer studies that combine both elements. The researcher has to thoroughly examine both themes in order to mix them with correct facts, examples, scenarios, models, and so on. As a result, the researcher developed a comprehensive framework that provides theoretical and conceptual explanations.

The third limitation is reaching the targeted audience, as the researcher's sample size is 385 respondents, which is 40% of the overall population. The target audience of teens is drawn from all throughout Malaysia, which the researcher finds problematic because the research was conducted during the semester break after a year (3 months holiday). The researcher had to promote and contact people on a daily basis in order to share the link to the questionnaire survey (Google Forms). The respondents' cooperation is satisfactory, but there is a question about whether they read the questions carefully before responding them. Respondents may be dishonest in their responses, and emotional responses cannot be effectively conveyed through it.

5.4 Contribution

Based on the overall results, the researcher achieved all of the objectives by utilizing descriptive analysis and multiple regression analysis to test in the three variables which the dominant factors were. Trends, security challenges, privacy information, and performance impacting contactless payment application usage. It has been provided suggestions on discoveries that are significant to the government, policymakers, private agencies, users, researchers, and knowledge in research implication.

5.4.1 Theoretical Contribution

Since the theory is based on logic, it is commonly believed that the projected outcome is possible in order to calculate the probability. It requires gathering a collection of observations and extracting sets of guidelines from them that regulate the subject's behaviour and the energy consumed during the observations. The literature review and the theories from the previous study is really impact to my research.

The four variables found have a significant relationship with the adoption of contactless payment applications in the Fintech environment.According to the findings, the primary factors, trends, security challenges, privacy information and performance strong positive impact affects on the dependent variable which is adoption of contactless payment application.

Furthermore, the research completed can assist future researchers in determining where this research study can be used as a reference. They has beennefit from the challenges recognized and solutions provided.

5.4.2 Practical Contribution

The findings of the study benefited user adopting with contactless payment. They will understand the Trends,Security Challenges,Privacy Information and Performance of contactless payment applications in Fintech environment. Besides, from this study can understand the level of adoption on using contactless payment applications. In addition, the study provides empirical literature sources to future researchers which carry out a similar topic by adding an existing body of knowledge on effective use of cashless payment in Fintech environment.

In addition this research can be used by the government, lecturers, policymakers, and user to have more understanding on adoption of contactless payment application. The lecturers can use this in class as a guidance for the students to done their research paper. However the contactless payment users can read this thesis to understand about the trends, security challenges, privacy information and also the performance of contactless payment application.

5.5 Recommendation

According to the result and findings in previous chapter, several recommendations and suggestion that research able to consider throughout the research.

First, the future researcher can relate contactless payment application with other elements other than security challenges and privacy information. This will provide wide range of benefits for the topic itself and organizations that related to contactless payment applications. For example, future research can specify one particular topic (i.e., security challenges of mobile payment application seriously affecting adoption toward it in the fintech environment). So,almost can tell that all the teenagers adopted towards contactless payment application can be benefited from these researches.

Second, the sample size of the research study is limited to Generation Y who are ages between 23 -40 years old only. In the future, such studies should be conducted in a wider scope so that the findings of the study can be generalized to the all age group in Malaysia. In addition, the research study sample size should involve All the related population groups from various backgrounds as well as different locations. This creates robust comparison of findings can be obtained.

Other than that, the future research need to be extended by using qualitative method or mixed method where research can make face-to-face interview sessions from the focus group or the expert in the fintech organization or the Mobile payment application users . Researcher can generate valuable and reliable findings from the respondents in the organization. Besides, it can provide other relevant models and information regarding the adoption of contactless payment application..

Although the researcher includes wide range of dominant elements that affects contactless payment application in fintech environment on framework, the future researcher can include more relevant elements and variable which provide wide range of insights to the audience. The researcher suggests that the future researcher have to consider creating decipherable framework model to engage with the readers. This relatively increase value to the research study

5.6 Summary

The purpose of this research was to gain a better knowledge of the factors influencing the adoption of contactless payment applications in the fintech sector. The researcher successfully completed the research objective specified in the early stages. The researcher then experienced various constraints when doing this research study. These limits compelled the researcher to make several recommendations for further investigation. According to previous research, the researcher was able to complete the gaps with comprehensive details. Finally, the adoption of contactless payment applications in the fintech ecosystem is influenced by all of the independent variables. As a result, the researcher believes that this research study has beennefit students, lecturers, the government, policymakers, private organizations, and academics.

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APPENDICES A

Task/ Week	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Briefing on FYP															
Formulating Title															
Topic Confirmation															
Formulating research objective and research question															
Find sources related chosen topic and reading article journal															
Identify the problem statement															
Writing Chapter 1															
Writing Chapter 2															
Writing Chapter 3															
Writing overall report and presentation slide															
Report presentation															
Submission															

A: Gantt Chart for PSM 1

APPENDICES B

Task/ Week	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Continuation on FYP 2															
Forming & developing constructions of measurement for Questionnaire Survey															
Submit Questionnaire for checking															
Correction questionnaire															
Forming &developing Questionnaire survey using Google Form															
Amendment on FYP report															
Proceed to data collection															
Finishing data collection (385 respondents)															
Extract data and key-in at SPSS															
Writing overall report and presentation slide															
Report presentation															
Submission															

B : Gantt Chart for PSM 2

APPENDICES C

QUESTIONAIRE

SECTION A - DEMOGRAPHY

Instructions : Please tick (/) in the space you think is most appropriate based on the following guidelines. Mark only one answer for each question.

1. Age

23-26		32-36	
27-31		37-40	

2. Gender

Male		Female	

3. Race

Malay		Chinese	
Indian		Others	

4. **Educational Level**

Sijil Pelajaran Malaysia (SPM)		Sijil Tinggi Persekolahan Malaysia（STPM）	
Diploma		Bachelor's degree	
Master		PHD	

5. **Occupation**

Student		Employer/Employee	

6. Frequency of contactless payment application usage.

Frequently (several times in a week)		Sometimes(several times a month)		Rarely (at least in the last year)	

SECTION B

Factors affecting contactless payment application

PART 1 Trends : the capability of adopting contactless payment application trends in a Fintech environment to satisfy users.

Instructions : Please tick (/) in the space you think is most appropriate based on the following guidelines. Mark only one answer for each question.

1	2	3	4	5
Strongly Disagree	**Disagree**	**Not Sure**	**Agree**	**Strongly Agree**

NO		1	2	3	4	5
1	I trust using contactless payment services fits my lifestyle.					
2	I like using contactless payment application fits well with the way to purchase product and services.					
3	I would appreciate using contactless payment application instead of traditional mode of payment.					
4	I realized by using mobile payment application, my choice as consumer are improved					
5	I agree trends of contactless payment save time.					
6	I always aware aware regarding the functionality of contactless payment					

PART 2 Security challenges: the capability of a contactless payment application to

secure and prevent user information from being misused during an online transaction.

Instructions : Please tick (/) in the space you think is most appropriate based on the following guidelines. Mark only one answer for each question.

1	2	3	4	5
Strongly Disagree	**Disagree**	**Not Sure**	**Agree**	**Strongly Agree**

NO		1	2	3	4	5
1	I understand that the risk of unauthorized third party overseeing the payment process is low.					
2	I know that the risk of abuse of billing information (eg. Credit card number , account data) is low when using mobile payment services .					
3	I would find mobile payment services secure in conducting my payment transaction.					
4	I believe the risk of abuse of usage information (eg. Names of business patners, payment amount) is low when using mobile payment services.					
5	I believe contactless payment have high risk of security					
6	I believe contactlesss payment application protected my privacy					

Part 3 Privacy Information: the capability of a contactless payment application to protect user personal information from being misused during an online transaction.

Instructions : Please tick (/) in the space you think is most appropriate based on the following guidelines. Mark only one answer for each question.

1	2	3	4	5
Strongly Disagree	**Disagree**	**Not Sure**	**Agree**	**Strongly Agree**

NO		1	2	3	4	5
1	I believe that Cashless payment application protect my information.					
2	I know the contactless application will help to reduce consumer uncertainty.					
3	I trust the applications for any environmental sustainable product and services.					
4	I feel comfortable with the authorization of the contactless application.					
5	I have security on this contactless payment applications.					
6	I am confident in using the contactless payment application for any transaction.					

Part 4 Performance of contactless payment applications: The good performance of contactless payment applications provides the confidence to adopt online transactions in users' daily life.

Instructions : Please tick (/) in the space you think is most appropriate based on the following guidelines. Mark only one answer for each question.

1	2	3	4	5
Strongly Disagree	**Disagree**	**Not Sure**	**Agree**	**Strongly Agree**

NO		1	2	3	4	5
1	I have become skillful of using mobile payment services.					
2	I find it is clear and understandable during interaction with contactless payment application.					
3	I find it is easy to perform the steps required to use contactless payment application.					
4	I believe it is easy to interact with contactless payment application.					
5	I trust performance of mobile payment application make the payment easy.					
6	I find contactless payment application provides an immediate virtual assistance to guide the user to familiarize with online transaction..					

Part 5 : Adoption of Contactless Payment Applications: The capability of adopting contactless payment applications in daily life.

Instructions : Please tick (/) in the space you think is most appropriate based on the following guidelines. Mark only one answer for each question.

1	2	3	4	5
Strongly Disagree	**Disagree**	**Not Sure**	**Agree**	**Strongly Agree**

NO		1	2	3	4	5
1	I have become skillful of using mobile payment services.					
2	I trust contactless payment offers better choices for its users through its features.					
3	I believe contactless Applications are not complicated and can be easily understood.					
4	I often transact online so I see no problem if this has been permanently added as a mode of payment.					
5	I am willing to pay my daily bills using contactless payment application.					

APPENDICES D

Lampiran D6

FPTT/ BTMU 4084/11

FAKULTI PENGURUSAN TEKNOLOGI DAN TEKNOUSAHAWANANFaculty of Technology Management and Technopreneurship
PROJEK SARJANA MUDA (PSM)
Final Year Project (FYP)
BORANGPENYERAHAN LAPORAN PSMII(BERJILID)
FYP Report Submission Form (Bound)

BAHAGIAN A (DIISI OLEH PELAJAR)

PART A (TO BE FILLED IN BY STUDENT)

1. Nama Pelajar : KORISHA A/P BRAGALATHAN
   Student's Name
2. Tahun/Sesi : 4 / 2022/2023
   Year/Session
3. No. K/P : 991030-05-5310 No. Matrik : B061910345
   My Card/Passport No. *Matric No.*
4. Kursus : [ ] BTMI [ ] BTMM [X] BTEC [ ] BTMS
   Course

* Sila tandakan (X) pada petak yang berkenaan

Pleace tick (X) in applicable box

4. Tajuk Projek : FACTORS AFFECTING ADOPTION OF CONTACTLESS

Project's Title PAYMENT APPLICATIONS IN THE FINTECH ENVIRONMENT.

Bersama-sama ini saya serahkan 1 **buah naskhah LAPORAN PSM II (BERJILID)** dan **1 CD** untuk diagihkan kepada pihak-pihak yang berkenaan.

Together with this, I submit 1 copy of PSM II REPORT (BINDING) and 1 CD to be distributed to the relevant parties.

Tarikh : 1 FEBRUARY 2023
Date

Tandatangan :
Signature

BAHAGIAN B (DIISI OLEH PENYELIA)

PART B (TO BE FILLED IN BY SUPERVISOR)

Saya , DR NOR AZAH BINTI ABDUL AZIZ akui telah mengesahkan tesis berjilid pelajar di bawah penyeliaan saya ini.

I, DR. NOR AZAH BINTI ABDUL AZIZ admit that I have approved the student-bound thesis under my supervision.

Tarikh : 1 FEBRUARY 2023 Tandatangan &Cop :

Date *Signature & Stamp*

DR. NOR AZAH BINTI ABDUL AZIZ
PENSYARAH KANAN
JABATAN TEKNOUSAHAWANAN
FAKULTI PENGURUSAN TEKNOLOGI & TEKNOUSAHAWANAN
UNIVERSITI TEKNIKAL MALAYSIA MELAKA

BAHAGIAN C (DIISI OLEH PIHAK FAKULTI)

PART C (TO BE FILLED IN BY THE FACULTY)

Saya , _____ akui telah menerima **1 buah naskhah**

LAPORAN PSM II (BERJILID) dan **1 CD** untuk diagihkan kepada pihak-pihak yang berkenaan.

I, _____ admit that I have received 1 copy

FYP REPORT (BINDING) and 1 CD to be distributed to the relevant parties.

Tarikh : _____ Tandatangan : _____

Date: *Signature*