

**IMPACT OF ONLINE PAYMENT SYSTEM EFFICIENCY ON CUSTOMER  
SATISFACTION**

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2024

## APPROVAL

I hereby declare that I have read this thesis research and in my opinion this thesis is sufficient in terms of scope and quality for the award of Bachelor of Faculty of Technology Management and Technopreneurship (FPTT).

  
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Faculty of Technology Management and Technopreneurship (FPTT)

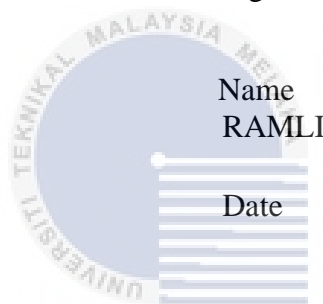
Universiti Teknikal Malaysia Melaka

JANUARY 2024

## DECLARATION

I hereby declare that this thesis project of title “impact of online payment system efficiency on customer satisfaction”. The work on this project is my own work except for quotations and summaries which have been duly acknowledged. This research paper has not been accepted for any degree and is not concurrently submitted for award of other degree.

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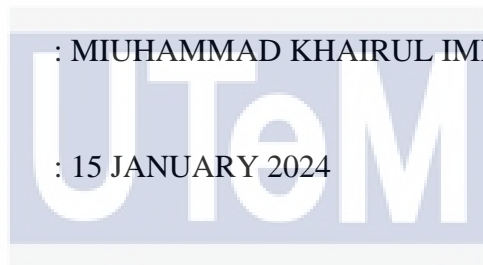


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## DEDICATION

I would like to dedicate this project first and foremost to Allah S.W.T and special dedication to my ever-supportive parent, Encik Ramli bin Marsudi and Puan Sabariah binti Naseh, for their relentless support and compassion towards me and who always been my inspiration. Furthermore, I want to share gratitude for the encouragement and support of my beloved lecturers, supervisor and friends.



## ACKNOWLEDGEMENT

First, I want to take this opportunity to express my sincere gratitude because give support for my final year project and to my supervisor, Dr Fauzan. I'm glad to work under your guidance.

I express my sincere thanks to Universiti Teknikal Malaysia Melaka (UTeM) giving to me such a great opportunity to finish the thesis. I thank you very much for lectures at FPTT for giving and guiding me and all my friends to finish final year project.

Furthermore, I want to thank my parents En. Ramli bin Marsudi and Puan Sabariah bin Naseh and my siblings Nur Aqilah binti Ramli and Nurhidayah Binti Ramli for their encouragement and continuous love when I finished my final year project. I would also like to give special thank you to my favorite person Aisyah Nabiilah binti Azrain for the relentless support and compassion towards me.

I want to thank you for all my dear friends Kovarasan A/L Nedung Chalian, Muhammad Azeem bin Hazmi, Muhammad Muizam Akmal bin Mohd Mahathir, Muhammad Sabarudin bin Ramlan Mahidin, my housemate and my classmate BTMI section 1 for their help and great support in making a shot. They always teach me and help me to end my work when I have issues. The precious fun memories I spent completing this project will not be forgotten.

Last but not least, I want to thank me. I want to thank me for believing in me, I want to thank me for doing all this hard work, I want to thank me for having no days off, I want to thank me for never quitting, I want to thank me for always being a giver and trying to give more than I receive, I want to thank me for trying to do more right than wrong, I want to thank me for just being me at all times.

## ABSTRACT

This study examines the relationship between online payment system efficiency and customer satisfaction. The study explores how the effectiveness and convenience of online payment systems impact customers' overall satisfaction with their online payment experiences. Quantitative analysis includes measuring customer satisfaction using established scales and evaluating efficiency factors such as perceived usefulness and perceived ease of use. Statistical techniques, such as correlation analysis and regression models, are employed to assess the strength and direction of the relationship. The study hypothesizes that higher levels of online payment system satisfaction efficiency positively influence customer satisfaction. The findings contribute to enhancing customer satisfaction and loyalty, benefiting online retailers, payment system providers, and e-commerce platforms.

Keywords: Online payment system, efficiency, customer satisfaction.

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## ABSTRAK

Kajian ini mengkaji hubungan antara kecekapan sistem pembayaran dalam talian dengan kepuasan pelanggan. Kajian itu meneroka bagaimana keberkesanan dan kemudahan sistem pembayaran dalam talian memberi kesan kepada kepuasan keseluruhan pelanggan dengan pengalaman pembayaran dalam talian mereka. Analisis kuantitatif termasuk mengukur kepuasan pelanggan menggunakan skala yang telah ditetapkan dan menilai faktor kecekapan seperti persepsi kegunaan dan persepsi kemudahan penggunaan. Teknik statistik, seperti analisis korelasi dan model regresi, digunakan untuk menilai kekuatan dan arah hubungan. Kajian itu membuat hipotesis bahawa tahap kecekapan kepuasan sistem pembayaran dalam talian yang lebih tinggi mempengaruhi kepuasan pelanggan secara positif. Penemuan ini menyumbang kepada meningkatkan kepuasan dan kesetiaan pelanggan, memanfaatkan peruncit dalam talian, penyedia sistem pembayaran dan platform e-dagang.

Kata kunci: sistem pembayaran atas talian, kecekapan, kepuasan pelanggan.



## TABLE OF CONTENT

### CONTENTS

TITLE

DECLARATION

DEDICATION

ACKNOWLEDGEMENT

ABSTRACT

TABLE OF CONTENTS

<b>CHAPTER 1</b>	<b>INTRODUCTION</b>	<b>PAGE</b>
	1.1 Background of study	16
	1.2 Problem Statement	18
	1.3 Research Question	20
	1.4 Research Objective	20
	1.5 Scope and Limitation of study	20
	1.6 Significant of study	21
	1.7 Limitation of study	22
<b>CHAPTER 2</b>	<b>LITERATURE REVIEW</b>	
	2.1 Introduction	23
	2.2 Online Payment System	24
	2.2.1 Challenge and Barriers to Online System	25
	2.2.2 Customer satisfaction	28

2.2.3 Factors Contributed to Acceptance Of Online Payment System	30
2.2.4 Efficiency of Online Payment Systems	32
2.3 Research gap	34
2.4 Theoretical Framework	35
2.5 Research Hypothesis	36

### CHAPTER 3 RESEARCH METHOD

3.1 Introduction	37
3.2 Research Design	37
3.3 Data Collection Method	38
3.3.1 Library Research/ Secondary Data Collection	38
3.3.2 Field Research/ Primary Data Collection	39
3.3 Sampling	40
3.3.1 Sampling Technique	40
3.3.2 Sampling Size	41
3.3.3 Location Sampling	41
3.4 Research Methodology	42
3.5 Questionnaire Development	42
3.5.1 Pilot Test	44
3.6 Data Analysis	44

3.6.1 Descriptive Analysis	45
3.6.2 Pearson Correlation Coefficient	45
3.6.3 Validity and Reliability	46
3.7 Summary	46

**CHAPTER 4 DATA ANALYSIS AND RESEARCH FINDING**

4.0 Introduction	47
4.1 Analysis of Pilot Test	47
4.1.1 Validity of Pilot Test	48
4.1.2 Reliability of Pilot Test	49
4.2 Result Dissemination Questionnaire	50
4.3 Result and Analysis	50
4.3.1 Validity Analysis	50
4.3.2 Reliability Analysis	53
4.4 Demographic Analysis	54
4.5 Descriptive Analysis	60
4.5.1 Mean Score Analysis for All Items	60
4.6 Correlation Analysis of All Variables	64
4.7 Hypothesis Testing	65
4.7.1 The Relationship between IV towards DV	66
4.7.2 The Relationship between IV towards DV	67
4.8 Multiple Regression Analysis (MRA)	68
4.9 Summary	71

**CHAPTER 5 CONCLUSION AND RECOMMEDATION**

5.0 Introduction	72
5.1 Summary of Findings	72
5.2 Justification of Research Objective	73
5.2.1 Fulfilment of First RO 1	73
5.2.2 Fulfilment of Second RO 2	75

5.3. Implication of Research	76
5.4 Limitation of Research	78
5.5 Recommendation for Future Research	80
5.6 Conclusion	80
<b>REFERENCE</b>	82
<b>APPENDIX</b>	93



## LIST OF TABLES

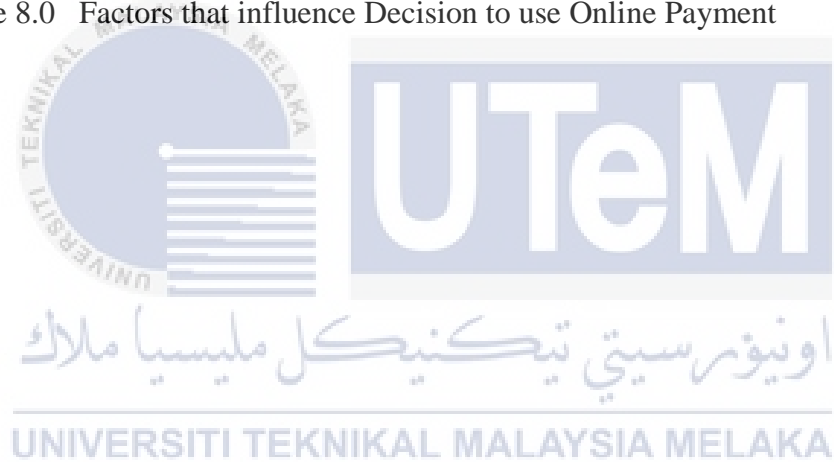
Table 3.1 Questionnaire Design	43
Table 3.2 Likert Scale	43
Table 3.8 Equation of Multiple Regression Analysis	40
Table 4.1 Validity Test of Pilot Test Perceived Usefulness (PU)	44
Table 4.2 Validity Test of Pilot Test Perceived Ease of Use (PEU)	45
Table 4.3 Validity Test of Customer Satisfaction	46
Table 4.4 Reliability of Pilot Test	47
Table 4.5 Result Dissemination Questionnaire	47
Table 4.6 Validity Analysis of Perceived Usefulness (PU)	48
Table 4.7 Validity Analysis of Perceived Ease of Use (PEU)	49
Table 4.8 Validity Analysis of Customer Satisfaction	51
Table 4.9 Reliability Analysis	52
Table 4.10 Respondents Gender	53
Table 4.15 Respondents Age	53
Table 4.16 Respondents Education	54
Table 4.18 Descriptive Analysis PU (Mean, Mod, Min)	55
Table 4.19 Descriptive Analysis PU (Frequency, Percentage)	56
Table 4.20 Descriptive Analysis PEU (Mean, Mod, Min)	57
Table 4.21 Descriptive Analysis PEU (Frequency, Percentage)	58
Table 4.22 Descriptive Analysis CS (Mean, Mod, Min)	59
Table 4.26 Pearson Coefficient Correlation	63
Table 4.27 Model Summary Regression Correlation	64

Table 4.28 Anova	65
Table 4.29 Coefficient	66
Table 4.30 Summary of Hypothesis Testing	68



## LIST OF FIGURES

Figure 1.0	The Conceptual Framework	36
Figure 2.0	Krejci and Morgan Table Population	41
Figure 3.0	Correlation strength	45
Figure 4.0	The Cronbach Alpha Coefficient	46
Figure 5.0	Result of Race	55
Figure 6.0	Result of Faculty	56
Figure 7.0	Type of Online Payment System Used	58
Figure 8.0	Factors that influence Decision to use Online Payment	58



# CHAPTER 1

## INTRODUCTION

### 1.0 INTRODUCTION

In recent years, the popularity of online payment systems has risen in Malaysia due to the increasing use of e-commerce platforms by consumers. As more and more people are opting for online transactions, the need for reliable and efficient payment systems has become crucial. Customers expect smooth and quick transactions, and this has put pressure on online payment providers to improve their systems to meet these expectations. Online payment system efficiency has a direct impact on customer satisfaction, and this research proposal aims to investigate this relationship in Malaysia.

اوتيمر سیتی تکنیکل ملیسیا ملاک

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### 1.1 BACKGROUND OF THE STUDY

The convenience and ease of online payments have altered the way Malaysians make transactions, allowing them to enjoy a more seamless purchasing experience while also saving critical time. The COVID-19 epidemic has hastened this trend, prompting more consumers to switch to purchasing goods online due to social distancing measures and movement restrictions (Jou et al., 2022).

Efficient online payment systems provide various benefits, including quick transaction processing, multiple payment alternatives, and strong security measures. Customers demand quick and easy transactions that minimize waiting time and provide immediate confirmation, therefore speed is essential. Furthermore, the



availability of multiple payment alternatives, including as credit cards, debit cards, digital wallets, and online banking, responds to Malaysian consumers' different choices, increasing their convenience and flexibility.

The rapid growth of information technology is helpful because it gives payment systems different features. Consumers are shifting away from cash in favour of e-payment systems as they become more prevalent. However, transitioning to alternative payment systems is difficult, and the use of cash trade practices remain strong (Yaokumah, Kumah, and Okai, 2017). However, the growth of online payment systems in Malaysia is primarily due to a combination of variables. The ease of cash transactions is one of them (Nizam, Hwang, and Valaei, 2018). Other reasons include security and cost savings. About 42 e-wallets in Malaysia have official licences from BNM (Bank Negara Malaysia). AEON Wallet, Boost, Big Pay, Grab Pay, WeChat Pay, and Touch'n Go eWallet are six of the most famous and widely used ones.

Erik Erikson's theory of human development defines a young adult as someone between the ages of 19 and 39, while a teenager is someone aged 13 to 18. Millennials (born between 1981 and 1997) and Generation Z (born between 1997 and on) are terms used to describe young adults born in the era of modern technology. (Karim, W., Haque, A., Ulfy, M. A., Hossain, A., Anis, Z. 2020). The field of technology endured a significant change for Generation Y. Globalisation has led to different perceptions and attitudes than in previous generations, and the greatest technological advancement has taken place (Nizam, Hwang, & Valaei, 2018). The Ingeneration, often referred to as Generation Z, was raised using technology and the internet (Mohammed, 2018).

As they research smart technology, these younger generations are eager to find out about the usability, security, and privacy of new applications (Karim, W., Haque, A., Ulfy, M. A., Hossain, A., Anis, Z. 2020). However, since incidents and problems involving information violations are increasing everywhere, including Malaysia, information security and privacy are crucial considerations (Mohammed, 2018). Privacy invasions like identity theft, credit card fraud, and digital crime are made

possible by people's ignorance of information security (Barrett-Maitland, Barclay, & Osei-Bryson, 2016).

## 1.2 PROBLEM STATEMENT

In today's digital era, the adoption of online payment systems has revolutionized the way businesses and customers conduct financial transactions. Online payment systems offer convenience, speed, and security, making them increasingly popular among customers. However, a key factor in determining customer satisfaction is how well these payment systems function. Thus, it is important to look into and comprehend how customer satisfaction is affected by the effectiveness of online payment systems.

The current issue is that it's necessary to evaluate how customer satisfaction is affected by how efficient online payment systems are. While online payment systems have gained widespread acceptance, there are various factors that can affect their efficiency, such as transaction processing time, system reliability, user interface design, security measures, and customer support. Any shortcomings or inefficiencies in these areas can lead to a negative customer experience, resulting in dissatisfaction, reduced customer loyalty, and potential loss of business for companies.

It is crucial to recognise and investigate the key variables that enhance the effectiveness of online payment systems in order to solve this issue. This includes evaluating the responsiveness of the system during peak transaction periods, assessing the effectiveness of security measures to prevent fraudulent activities, examining the ease of use and user interface design, and evaluating the reliability and availability of customer support channels.

Furthermore, it is crucial to understand how online payment system efficiency directly impacts customer satisfaction. A highly efficient online payment system that provides quick and secure transactions, easy navigation, and reliable customer support can significantly enhance the overall customer experience. Conversely, an inefficient system characterized by slow processing times, technical glitches, or inadequate support can lead to frustration and dissatisfaction among customers.

By conducting research and analysis on the impact of online payment system efficiency on customer satisfaction, valuable insights can be gained. These insights can help businesses and organizations identify areas for improvement, implement effective strategies to enhance system efficiency, and ultimately boost customer satisfaction. Additionally, understanding the relationship between online payment system efficiency and customer satisfaction can guide the development of new technologies, improved user experiences, and streamlined processes to meet the evolving needs and expectations of customers.

Thus, the purpose of this study is to ascertain how the effectiveness of the online payment system affects customer satisfaction by analysing the variables that affect system performance and the correlation between system effectiveness and customer satisfaction. The findings of this research will provide valuable insights for businesses, payment service providers, and researchers to enhance online payment systems and optimize customer experiences, ultimately leading to improved customer satisfaction and loyalty.

### 1.3 RESEARCH OBJECTIVES

The main objective of this research is to investigate the impact of online payment system efficiency on customer satisfaction. To achieve this objective, the following research objectives can be defined:

- i) To analyse the relationship between perceived usefulness and customer satisfaction.
- ii) To analyse the relationship between perceived ease of use and customer satisfaction.

### 1.4 RESEARCH QUESTIONS

- i) What is the relationship between perceived usefulness and customer satisfaction?
- ii) What is the relationship between perceived ease of use and customer satisfaction?

### 1.5 SCOPE OF STUDY

The scope of research for the impact of online payment system efficiency towards customer satisfaction is to examine the relationship between the efficiency of online payment systems and customer satisfaction. The study aims to explore how factors such as perceived usefulness, ease of use, and reliability of online payment systems influence customer satisfaction. It will involve collecting data from customers who have used online payment systems to make purchases or transactions, and

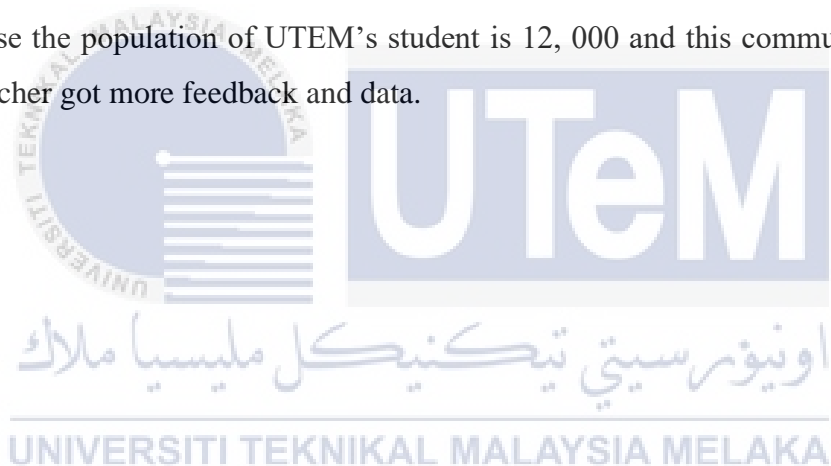
analysing their feedback and experiences to identify key drivers of satisfaction. The research will contribute to understanding the importance of efficient online payment systems in enhancing customer satisfaction and provide insights for businesses to improve their payment systems accordingly.

## **1.6 SIGNIFICANT OF STUDY**

The study on the impact of online payment system efficiency on customer satisfaction is highly significant in today's digital age. With the increasing popularity of online transactions, it is crucial to understand how the efficiency of payment systems influences customer satisfaction. By examining this relationship, researchers can provide valuable insights to businesses and policymakers, enabling them to enhance their online payment systems and create a more satisfying customer experience. This study can help identify key factors that contribute to efficient online payment systems, such as transaction speed, security, convenience, and ease of use. Ultimately, the findings can guide businesses in optimizing their payment processes to meet customer expectations and improve overall satisfaction, leading to increased customer loyalty and business success in the online marketplace.

## 1.7 LIMITATION OF STUDY

Due to limitation of the study, it is hard for researchers to get information that is both accurate and essential. This study only has a limited amount of time to do the data for this study. Even if they only have a short amount of time, experts who are doing a study need to be well-versed in the process of implementation. While customer satisfaction is an important metric, it reflects only one aspect of the overall user experience. By only focusing on satisfaction, other factors that contribute to the efficiency and usability of online payment systems, such as security, effectiveness, and convenience, may be ignored. Therefore, a more comprehensive assessment of the online payment system experience may provide a deeper level of knowledge. Another limitation of this studied was that most respondents had been young people over the age of 18 to 35 years old. The researcher collects 266 respondents in this project because the population of UTEM's student is 12, 000 and this communities' helped researcher got more feedback and data.



## CHAPTER 2

### LITERATURE REVIEW

#### 2.1 INTRODUCTION

Electronic payment systems are becoming increasingly popular in Malaysia, and it is crucial to understand the impact of e-payment system efficiency on customer satisfaction among student customers. Several studies in various sectors, such as e-banking, e-commerce, and food delivery, have demonstrated that electronic-based services positively affect customer satisfaction. Perceived usefulness and trust have been identified as significant variables that positively affect customer satisfaction. Although some studies have found that high educational qualifications significantly influence customers' preference for e-payment services, less educated customers may feel inconvenienced while using electronic payment services (Wong Yoke San, Wong Yee Von, & Muhammad Imran Qureshi, 2020). The level of customer satisfaction regarding electronic-based services can be influenced by factors such as service quality and price. Notably, the study by Chavosh found that bank managers believed e-payment systems were highly potential tools that could improve the accuracy and speed of transactions and increase customer satisfaction (Pei Woon Yo et al., 2021). The quality of e-services positively correlates with customer satisfaction, and dimensions such as efficiency, fulfilment, privacy, and system availability are positively associated with customer satisfaction (Ukoha I., 2017). Finally, this study's findings concluded that customer satisfaction is a reliable predictor of customer loyalty (Halim H et al., 2023).

In conclusion, these studies demonstrate that the efficiency of e-payment systems has a significant impact on customer satisfaction, especially for student customers in Malaysia. Hence, service providers should focus on improving their systems and services according to Malaysian consumers' needs and concerns, particularly among student customers, to enhance their satisfaction levels. Educational institutions should provide operational strategies that improve service quality, ensuring customer satisfaction and loyalty. Bank managers and e-payment service providers should also develop and improve e-payment systems according to customer needs, which can enhance customer satisfaction levels and create loyal customers (Pei Woon Yo et al., 2021). Future research should continue to explore other factors affecting customer satisfaction in e-payment systems.



## 2.2 ONLINE PAYMENT SYSTEM

When money is sent electronically, as opposed to physically exchanging cash, cheques, or other financial papers, it is referred to as an electronic payment system. Although the terms electronic payment system and electronic banking have some slight distinctions, the former is more frequently used. Electronic banking may not always entail moving money, although electronic payment systems do. Online services for electronic banking include things like opening an account, checking the amount of an account, blocking accounts, and applying for loans (Chukwu, Origin K, Ubah C, and Njideka E. 2021).

The payment system helps move money from one bank account to another, and it's like veins that carry money to different parts of the economy (Ijeoma et al., 2020). E-payment is a way for people to exchange money electronically. It happens when a buyer and a seller communicate electronically. So basically, e-payment is a type of payment that uses technology like cryptography and remote networks.



The use of technology in payment systems has made banking more convenient for customers, staff, and society as a whole (Chukwu, Origin K, Ubah C, Njideka E. 2021). Today, we don't always use physical cash to pay for things or receive money from others. Instead, we have other methods of payment available. We can make the payment using e-payment products like ATM, internet, Point of Sale terminals (POS), mobile money solutions, etc. Funds are transferred between financial institutions like banks, credit unions, and other institutions through electronic media (Ijeoma, 2020). But you can take out cash using an ATM or pay with a credit card through a bank or designated person using an electronic device. This way, you don't need to be physically present during the transaction.

A computer system that communicates through phone lines is the only component of the electronic payment system. Computerised systems keep track of money transfers and ownership as well as client and institution actions involving the movement of cash. Each user's access is granted through the use of a unique access code, making them feel considerably secure when transferring money electronically. The major goal is to ensure that electronic techniques are trustworthy and safe for use in both financial and non-financial organisations. This reduces the danger associated with carrying physical cash. According to Chukwu, Origin K, Ubah C, and Njideka E. 2021, the electronic payment system is a technologically advanced method of providing financial services. It offers a variety of services like cash deposit, utility payment, cash transfer, cash withdrawal, request for a check and passbook, request for an account statement, and other financial inquiries.

### **2.2.1 CHALLENGES AND BARRIERS TO ONLINE PAYMENT SYSTEM**

The way we conduct financial transactions has been completely transformed by online payment systems, which offer convenience and flexibility to both individuals and businesses. However, the widespread adoption of these systems is not without its challenges and barriers. This article aims to review the key challenges and

barriers faced in online payment systems, shedding light on the complexities involved and the potential areas for improvement.

The research study conducted by Rachna and Singh (2013) examines the challenges and barriers that impede the adoption and acceptance of online payment systems. The study sheds light on several key issues that users and vendors face, which hinder the widespread use of online payment methods.

One significant challenge identified in the study is the lack of usability in online payment systems. Users often encounter complex website interfaces and lengthy forms that require a substantial amount of information. These factors make it difficult for users to navigate the online payment process, resulting in a reluctance to adopt these systems.

Security concerns pose another major barrier to the adoption of online payment systems. E-commerce platforms are often targeted by hackers seeking to acquire personal sensitive information and steal money. Users are required to provide personal data, such as credit card details, online, and they may not always be certain about the security of transmission. This lack of assurance in data protection undermines trust in online payment systems.

The study also highlights the issue of trust as a significant barrier to the acceptance of online payment systems. Instances of fraud, misuse, and low reliability contribute to the scepticism among users. This lack of trust may arise from previous negative experiences or a general perception of insecurity associated with electronic transactions.

Another challenge identified in the study is the lack of awareness among users. Many individuals still prefer traditional payment methods and are unaware of the convenience and benefits offered by online transactions. This reluctance to adopt

online payment systems may stem from a lack of education or a general resistance to change.

Issues related to eCash, a form of electronic cash, also hinder the adoption of online payment systems. The limited usage of eCash is attributed to the requirement for users and vendors to share the same bank that offers eCash services. This limitation restricts the flexibility and convenience of this payment method.

User perception plays a crucial role in the acceptance of electronic payment systems. Neglecting the needs and preferences of both users and vendors can contribute to a negative perception of such systems. Addressing these concerns and aligning the payment systems with user expectations is crucial for enhancing their acceptance.

In rural areas, online payments face feasibility challenges. The majority of individuals in rural areas have limited computer usage skills and lack technological literacy. This lack of knowledge and awareness about technological innovations makes them reluctant to adopt online payment systems.

Lastly, the implementation of online payment systems can be expensive and time-consuming for vendors. Setting up these systems involves various costs, including setup costs, machine costs, and management costs. These expenses can pose financial burdens, making online payment systems less appealing compared to traditional physical modes of payment.

## 2.2.2 CUSTOMER SATISFACTION

The success of online payment systems is largely dependent on customer satisfaction. This piece examines the idea of customer satisfaction and how it affects the uptake and usage of online payment services. The convenience and ease of use provided by electronic services have transformed the way customers interact with financial institutions. This shift from traditional banking methods, such as queuing in physical branches, has significantly influenced customer satisfaction levels (Chukwu, Origin K, Ubah C, Njideka E. 2021).

**Defining Customer Satisfaction:** Customer satisfaction is the overall perception and emotional response of customers towards the services they receive. It is often measured by comparing customers' expectations with the actual performance of a product or service in meeting their needs, goals, or desires. The level of satisfaction can be influenced by pre-consumption expectations and the customer's knowledge and experience with the product or service (Ijeoma et al., 2020).

**The Role of Expectations:** Research indicates that pre-consumption expectations are a crucial factor in determining customer satisfaction. Customers form an opinion about the performance of a product or service before actually using it. During consumption, customers compare the expected performance level with the actual performance, which forms the basis for their satisfaction judgment (Ijeoma et al., 2020).

**Customer Satisfaction and Retention:** Customer satisfaction has a direct impact on customer retention, particularly in competitive industries like banking. Banks employ various strategies to meet or exceed customer expectations in order to retain their customer base. According to Saha and Zhao, customer satisfaction is a result of a mixture of impression, evaluation, and psychological reactions to the consumption experience. When the perceived performance falls short of expectations, customers

are dissatisfied, whereas exceeding expectations leads to customer satisfaction, resulting in positive behaviours and outcomes.

Benefits of Customer Satisfaction: Satisfied customers tend to exhibit loyalty, spend less time exploring alternatives, are less price-sensitive, and pay less attention to competitors' advertising (Chukwu, Origin K, Ubah C, Njideka E. 2021). By meeting or surpassing customer expectations, online payment systems can foster a loyal customer base, enhance customer retention rates, and possibly obtain a market advantage over competitors.

Customer satisfaction is a vital aspect of online payment systems. Understanding and meeting customer expectations are essential for providing satisfactory experiences. By continuously striving to exceed customer expectations, online payment systems can foster loyalty, improve retention rates, and achieve positive business outcomes. Consequently, it is crucial for financial institutions and service providers to invest in enhancing customer satisfaction to guarantee the long-term growth of their online payment systems (Chukwu, Origin K, Ubah C, Njideka E. 2021).

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### **2.2.3 FACTORS CONTRIBUTED TO THE ACCEPTANCE OF ONLINE PAYMENT SYSTEM**

In the digital age, online payment methods have completely changed the way we conduct business. The success of these systems and the expansion of e-commerce depend on their being widely accepted. The purpose of this article is to summarise the major elements that influence the acceptance of online payment methods. Businesses and payment service providers can improve their services and give customers a safe and easy way to make payments by taking into account these variables.

**Convenience and Ease of Use:** One of the primary factors driving the acceptance of online payment systems is the convenience they offer. Consumers value the ability to make payments from the comfort of their own homes or while on the go (Abdulrahman, Ameena, et al 2020). Moreover, online payment systems that provide a simple and intuitive user interface are more likely to be embraced by users. When the payment process is streamlined and requires minimal effort, users are more likely to adopt and continue using the platform.

**Security and Trust:** The degree to which online payment systems are accepted depends in large part on security concerns. When completing online transactions, consumers are becoming more and more concerned about the security of their financial and personal information. Strong security protocols, like two-factor authentication, fraud detection systems, and encryption, promote trust and reduce worries about making payments online. Additionally, clear and transparent privacy policies and effective communication regarding data protection can further enhance trust in the system (Ijeoma et al., 2020).

**Wide Acceptance and Compatibility:** The acceptance of online payment systems heavily relies on their availability across various platforms and devices. For widespread adoption, payment systems need to be compatible with multiple operating systems, web browsers, and mobile devices. Consumers expect to use their preferred

payment method regardless of whether they are shopping on a website or using a mobile app. By offering compatibility across different platforms, online payment systems can cater to a broader user base and encourage acceptance (Abdulrahman, Ameena, et al 2020).

**Rewards and Incentives:** Offering rewards and incentives is an effective strategy to encourage the adoption of online payment systems (“Factors Affecting E-Payment Acceptance by Customers: An Empirical Study in the Kingdom of Bahrain. Emerald Insight, 2022). Cashback offers, loyalty points, or discounts for using specific payment methods can incentivize consumers to switch from traditional payment methods to online systems. These rewards not only attract new users but also promote continued usage, as customers strive to maximize the benefits associated with using a particular online payment system.

**Mobile Compatibility:** With the increasing dominance of smartphones, the compatibility of online payment systems with mobile devices is crucial for their acceptance. By utilising technologies like Near Field Communication (NFC) and QR codes, mobile wallets and payment apps offer a simple and convenient way to make payments. The ability to make quick and secure transactions using mobile devices appeals to users who are constantly on the go (Karim, W. 2020.).

**Social Influence and Peer Recommendations:** The influence of social networks and peer recommendations cannot be underestimated in the acceptance of online payment systems. Positive word-of-mouth, reviews, and recommendations from friends, family, and online communities contribute to users' trust and confidence in adopting these systems (Renee, Michelle, and D Ching. 2017). Social media campaigns, testimonials, and user-generated content also play a vital role in shaping public perception and driving acceptance.

**Seamless Integration with E-commerce Platforms:** The integration of online payment systems with e-commerce platforms is crucial for user acceptance. Seamless integration ensures a hassle-free checkout process, reducing friction and abandonment rates (Renee, Michelle, and D Ching. 2017). When payment systems integrate smoothly with popular e-commerce platforms, customers can complete transactions quickly, without the need for manual entry of payment information. Moreover, reliable and efficient payment gateways contribute to a positive user experience, fostering trust and satisfaction.

In conclusion, the acceptance of online payment systems depends on several factors that revolve around convenience, security, compatibility, rewards, and integration (Renee, Michelle, and D Ching. 2017). Businesses and payment service providers must prioritize user-centric design, robust security measures, compatibility with various platforms, and strategic rewards programs. By addressing these factors, online payment systems can gain widespread acceptance, fuelling the growth of e-commerce and transforming the way we conduct financial transactions in the digital age.



#### **2.2.4 EFFICIENCY OF ONLINE PAYMENT SYSTEMS**

Efficiency in the context of online payment systems refers to the effectiveness, reliability, security, and speed of transactions. It encompasses factors such as transaction processing time, system uptime, error handling, data security, and integration with various platforms.

An efficient online payment system reduces transactional friction, ensuring smooth and seamless payment experiences for customers. When transactions are processed quickly, accurately, and securely, customers perceive the system as reliable



and trustworthy. This positive experience contributes to increased customer satisfaction, building trust and loyalty towards the online business.

### **PERCEIVED USEFULNESS (PU)**

When users perceive an online payment system as useful, they are more likely to utilize it, leading to increased transaction volumes. Higher transaction volumes allow online payment systems to leverage economies of scale, invest in infrastructure improvements, and optimize their operations, ultimately enhancing efficiency.

Numerous research studies have been carried out to examine the perceived value of online payment systems. Gefen et al. (2003), for instance, looked into what factors affected people's acceptance of online banking and emphasised the significance of perceived utility in forming favourable opinions about these services.

### **PERCEIVED EASE OF USE (PEOU)**

A user-friendly interface, intuitive navigation, and streamlined processes contribute to the ease of use of an online payment system. When users find a system easy to use, they are more likely to complete transactions quickly and efficiently. Enhanced ease of use reduces the probability of errors, minimizes the need for customer support, and improves overall system efficiency.

The convenience that online payment systems provide is one of the main reasons for their acceptance. Customers appreciate being able to pay while on the go or in the comfort of their own homes (Abdulrahman, Ameena, et al 2020). Furthermore, consumers are more likely to accept online payment systems with an easy-to-use interface. Users are more likely to embrace and stick with a platform when the payment process is simple and needs little work on their part.

## 2.3 RESEARCH GAP

Although the usage of online payment methods is on rising, there is still a big knowledge gap when it comes to the challenges and barriers related to rural areas. There is little study investigating the particular economic challenges in rural locations; instead, the existing research mostly focuses on the general challenges and limitations faced by online payment systems. It is important to consider the specific problems, such as insufficient computer usage and technology awareness among the population, that prevent the implementation of online payment systems in rural areas. By filling in this knowledge gap, academics may offer practical guidance on developing and putting into practice online payment systems that are sensitive to the demands and limitations of rural consumers.

Also, there's a lack of understanding about what factors affect customer satisfaction in online payment systems. Although it's widely acknowledged that customer satisfaction is an important factor, there hasn't been enough thorough investigation into the factors that determine satisfaction in the field of online payment services. Many studies only look at how satisfied customers are with e-commerce or banking in general, but they don't really explore the special things that come with online payment systems. To improve their payment systems and make them more user-friendly, service providers and financial institutions need to know what makes customers pleased. This includes things like how easy it is to use the system, how secure it is, and how convenient it is.

By conducting research and analysing data, we can learn more about the difficulties and obstacles that rural areas face when trying to use online payment systems. This will help us better understand how to improve customer satisfaction with online payment services in these areas. This study will be helpful for policymakers, financial institutions, and service providers who want to create online payment systems that are beneficial and easy to use for everyone.

## 2.4 THEORETICAL FRAMEWORK

The Technology Acceptance Model (TAM), initially developed by Davis (1989), is based on the Theory of Reasoned Action (TRA) and the Theory of Planned Behaviour (TPB), two highly researched intention models that have been successful in predicting technology acceptance behaviour (Barry and Jan, 2018; Nasri and Charfeddine, 2012). The extended TAM model incorporates perceptions of usefulness (PU), perceived ease of use (PEU), behavioural intention (BI), and actual system use (ASU).

Online payment systems have become more widely used as a result of e-commerce's explosive growth. These systems are essential for enabling convenient and safe transactions. Customer satisfaction and the general success of online businesses are directly impacted by the effectiveness of these payment systems. This theoretical framework seeks to investigate how online payment systems' effectiveness and the Technology Acceptance Model (TAM) relate to one another and, ultimately, how that relationship affects customer satisfaction.

The TAM, or Technology Acceptance Model, is a well-known theoretical framework that explains why users accept and use technology. Perceived utility (PU) and perceived ease of use (PEOU) are its two main constructs. PU is the degree to which a user thinks that utilising a technology will improve their performance, whereas PEOU is the degree to which a user thinks that using a technology is simple.

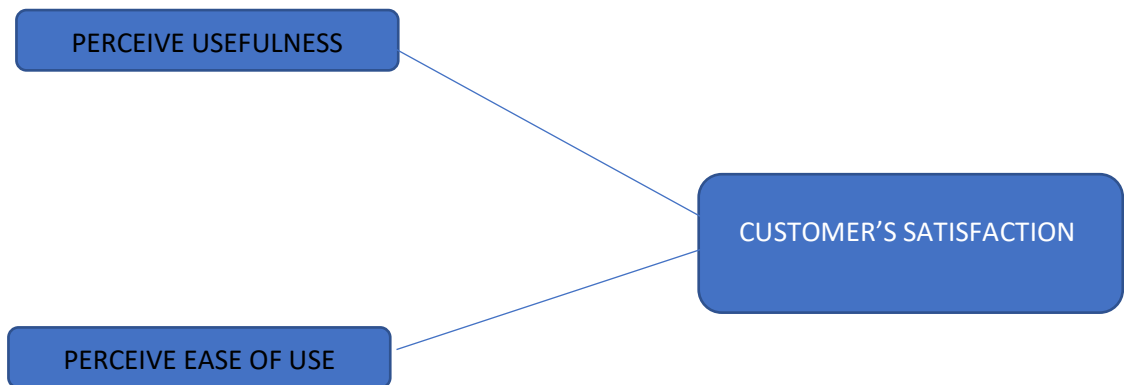


Figure 1: Conceptual Framework

## 2.5 Research Hypothesis

Based on previous literature reviews and the objective of this study, the following hypotheses were formulated:

H1= There is a positive relationship between perceive usefulness and customer's satisfaction.

H0 = There is no positive relationship between perceive usefulness and customer's satisfaction.

H2= There is a positive relationship between perceive ease of use and customer's satisfaction.

H0 = There is no positive relationship between perceive usefulness and customer's satisfaction.

## **CHAPTER 3**

### **RESEARCH METHODOLOGY**

#### **3.0 INTRODUCTION**

In this chapter, the researcher will examine a particular methodology or approach to data collection and gathering relevant to this research, taking into account each variable. To get a test that is accurate and dependable, the researcher may employ and combine a number of methodologies. By studying and conducting research, researchers could broaden their perspective and acquire the skills necessary to address real-world issues. Researchers usually employed quantitative methodologies to finish their research projects when conducting studies. The best approach could be chosen by the researcher to help with the data collection process. This chapter concludes with a thorough description of the data analysis instruments that the researcher used to gather information for this thesis.

#### **3.1 RESEARCH DESIGN/STRUCTURE**

For a more thorough understanding, the researcher may be able to obtain an overview of the research from the researched design. The researched design could be considered as a vital part of understanding the researcher's overall strategy in doing research since it indicates how the researcher answers researched questions in order to

reach researched aims (Saunders et al. 2016). The study was quantitative and descriptive in nature. Primary and secondary data sources had both been gathered.

Thus, investigating the effect of an online payment system on customer satisfaction was the strategy's aim for this study. As a result, in this research, a descriptive study design with a standardized questionnaire form was employed to collect all necessary data. The approach of this descriptive method was to characterize and validate the features and facts that potentially influence customer satisfaction. In addition to the research, quantitative methodology was utilized to build a structured questionnaire and define the statistical hypotheses that corresponded to the analysis questions. Primary and secondary data sources had both been gathered.

The surveyed methods were enabling a large population of respondents to be gathered standardized information and made a direct comparison possible (Saunders et. Al, 2016). The researcher could gain a good understanding of the conclusion reached by the data analysis. As a result, descriptive design was appropriate for this researched compared to exploratory design or explanatory design because descriptive design was a theory that employs a method of observation and measurement of studied without controlling or manipulating any form variable.

## **3.2 DATA COLLECTION METHOD**

### **3.2.1 LIBRARY RESEARCH/ SECONDARY DATA COLLECTION**

Secondary data refers to any content or information that has been extracted from an already existing publication. This information is available, among other

places, in a wide variety of sources, such as books, articles from newspapers and journals, articles from databases, and reports, to name just a few. As a student at the institution Teknikal Melaka Malaysia, one can use their identification to access the relevant information that is available on the website of the institution as well as in publications such as periodicals and books that can be checked out from the university library. This material can be obtained both online and in hard copies. In addition, in order to research any and all related information and databases, one may use the Google scholar website alongside with the Google search engine.

### **3.2.2 FIELD RESEARCH/PRIMARY DATA COLLECTION**

For the purposes of this research, it was decided that the questionnaires would be distributed to selected respondents over the internet. The questionnaires are designed to be distributed to Malaysian young people. Respondents who currently reside in Malaysia will be chosen at random, and questionnaires will be distributed in a random order. After that, data will be collected, and data will be analyzed using research procedures such as SPSS. The findings from primary data will be addressed in conjunction with the findings from secondary data, which includes material gathered from sources such as books, newspaper articles, journal articles, databases, and reports.

### **3.3 SAMPLING**

#### **3.3.1 SAMPLING TECHNIQUE**

Even though they are not frequently used, Saunders et al. (2016) state that there are two types of sampling techniques that can yield either a probability sample or a representative sample. The people you're trying to reach already know what probability samples are, and most cases are usually the same. Chance or probability can be used to describe probability readings. Respondents might find it hard to fill out the form from the researcher, but in order to reach the goal of the sample, they have to. Researchers can use the questionnaire to learn more about the characteristics of the target group. The probability sample also has parts that are simple, systematic, laminated, and clustered.



#### **3.3.2 SAMPLING SIZE**

Generally, the sample size refers to the number of participants or observations included in a studied. According to Hoelter 1983 recommend a minimum sample size was 200 respondents. As the researcher was aware that the population of UTEM student is 12 000 for undergraduate student (Super User, 2020), the researcher used Krejcie and Morgan's theory table, which stated that 375 respondents were required to answer the questionnaire to represent students in Malaysia. Researchers assumed that having more respondents would help them obtain more accurate data. For most studies, the sample size should be more than 30 but less than 500, according to Sekaran (2003). Therefore, it could be said that the sample used in this investigation was appropriate.



The focus of this research study was on the impact of online payment system efficiency on customer satisfaction among UTEM students. The UTEM population is utilized to choose target responders, who must be Malaysian students. As a result, the questionnaire will be designed for the 375-person target group of UTEM respondents. The required sample size for researchers is shown in the table below, as established by Krejcie and Morgan (1970 Table).

<i>N</i>	<i>S</i>	<i>N</i>	<i>S</i>	<i>N</i>	<i>S</i>
10	10	220	140	1200	291
15	14	230	144	1300	297
20	19	240	148	1400	302
25	24	250	152	1500	306
30	28	260	155	1600	310
35	32	270	159	1700	313
40	36	280	162	1800	317
45	40	290	165	1900	320
50	44	300	169	2000	322
55	48	320	175	2200	327
60	52	340	181	2400	331
65	56	360	186	2600	335
70	59	380	191	2800	338
75	63	400	196	3000	341
80	66	420	201	3500	346
85	70	440	205	4000	351
90	73	460	210	4500	354
95	76	480	214	5000	357
100	80	500	217	6000	361
110	86	550	226	7000	364
120	92	600	234	8000	367
130	97	650	242	9000	368
140	103	700	248	10000	370
150	108	750	254	15000	375
160	113	800	260	20000	377
170	118	850	265	30000	379
180	123	900	269	40000	380
190	127	950	274	50000	381
200	132	1000	278	75000	382
210	136	1100	285	100000	384

Note.—*N* is population size. *S* is sample size.  
Source: Krejcie & Morgan, 1970

Figure 2: Sample size by Krejcie and Morgan (1970)

### 3.3.3 LOCATION SAMPLING

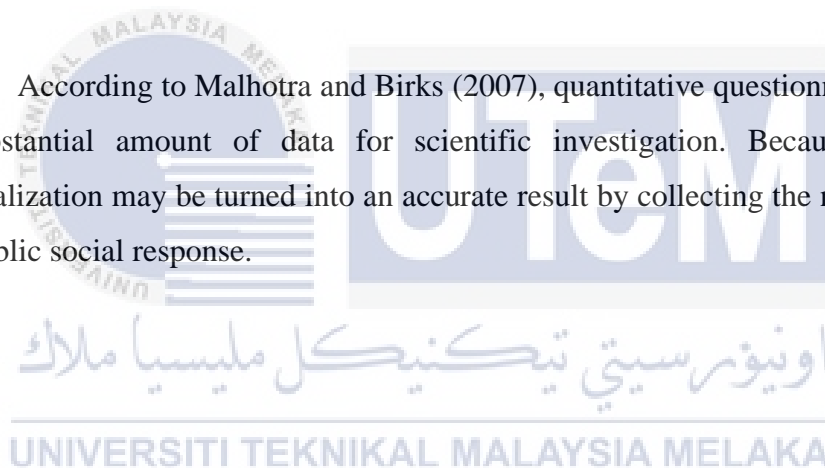
UTEM is the location where this research is being carried out. The researcher distributed a questionnaire to this group in order to collect information about the impact of online payment system efficiency towards customer satisfaction.

### **3.4 RESEARCH METHODOLOGY**

#### **QUANTITATIVE**

Quantitative strategy was taken in the conduct of this research. Quantitative methods of data analysis allow for the generation of statistical findings based on a significant quantity of quantitative information. The findings that were obtained via the use of quantitative methods were said to have a good degree of validity, accuracy, and reliability by Ooi et al (2015). The plan for the survey research approach for the quantitative research was established, and the research itself will be carried out by means of the questionnaire.

According to Malhotra and Birks (2007), quantitative questionnaires can give a substantial amount of data for scientific investigation. Because of this, a generalization may be turned into an accurate result by collecting the necessary facts on public social response.



### **3.5 QUESTIONNAIRE DEVELOPMENT**

In order to collect primary data for this study, a quantitative approach was utilized through a survey. The questionnaire was created using Google Forms, which was simple and affordable in comparison to a manual paper survey. It might be sent to the intended recipient as a link or URL. Another option for the researcher would be to just use social media sites like Facebook, WhatsApp, and Twitter to share this questionnaire. It might streamline the process and cut down on the amount of time needed to distribute the questionnaire, count the results, and analyze the data.

The questionnaire can be split down into three sections: sections A, B, and C within the context of this study. There are two sections to the questionnaire's first component: Part 1 and Part 2. Background-setting demographic and geographic questions were posed to respondents. For instance, the respondent's age, gender, and educational attainment were all questioned in Part 1 of this section. The effectiveness of the online payment system is covered in Part 2. The relationship between the independent and dependent variables is covered in Sections B and C.

Table 3.1: Shows the questionnaires design

Section	Questionnaires
A	Respondent background
B	Independent Variable(Perceived Usefulness, Perceived Ease of Used)
C	Dependent variable (customer satisfaction)

Based on the questionnaire design, respondents will utilize a Likert Scale with 1 to 5 marks to indicate how strongly they agree or disagree with the question statement. It made it easier for respondents to answer the question, and the researcher did not want to pressure respondents with having to think of their own terms. The most appropriate and relevant questions for this research will be selected.

Table 3.2: shows the Likert Scale

<p>Strongly Disagree <span style="float: right;">→</span> Strongly Agree</p>				
1	2	3	4	5

Table 3.3: shows the scale of measurement

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

### 3.5.1 PILOT TEST

In order to determine whether the questionnaire was accepted or not based on the sample size to carry out a pilot test and pre-test on questionnaire, the researcher in this study would first distribute the questionnaire to 30 respondents before spreading it to 374 respondents. In relation to this, the researcher would receive feedback and determine whether the questionnaire needed to be updated or continued. Subsequently, the completed questionnaire was released.

### 3.6 DATA ANALYSIS

In this study, the data was entered into the statistical package for social science (SPSS) version 29, which was used to analyze and assess the completed questionnaires. The data was entered into the computer to accomplish this. One of the many benefits of using SPSS is that it can offer effective data management, a multitude of options, and better output organization. Some of the analysis techniques that were applied to make sense of the data were the descriptive analysis, the reliability and validity analysis, and the Pearson correlation.

### 3.6.1 DESCRIPTIVE ANALYSIS

The descriptive analysis was used to conduct a comparative and descriptive analysis of the variables of central tendency and dispersion. According to Saunders et al. (2012), descriptive statistics can be used to describe the distribution of data values towards the trend center. These statistics include the mode, median, and dispersion, among others. Descriptive statistics can also be used to assess the trend center. In most cases, frequency and percentage are used in descriptive analysis to describe the targeted respondents' demographic features.

### 3.6.2 PEARSON CORRELATION ANALYSIS

Saunders et al. (2012) said that the correlation coefficient is utilized to determine the degree to which two numerical variables are linked in a linear fashion. The researcher decided to use Pearson correlation in order to evaluate how strongly independent variables are correlated with dependent variables. The range of the coefficient ( $r$ ) is from plus one to minus one, with plus one representing a positive correlation and minus one representing a negative correlation. The result of 0 indicated that there was no connection between the two variables being considered. If the correlation is higher, then the link that exists between the two variables is going to be more significant (Hair et al., 2008).

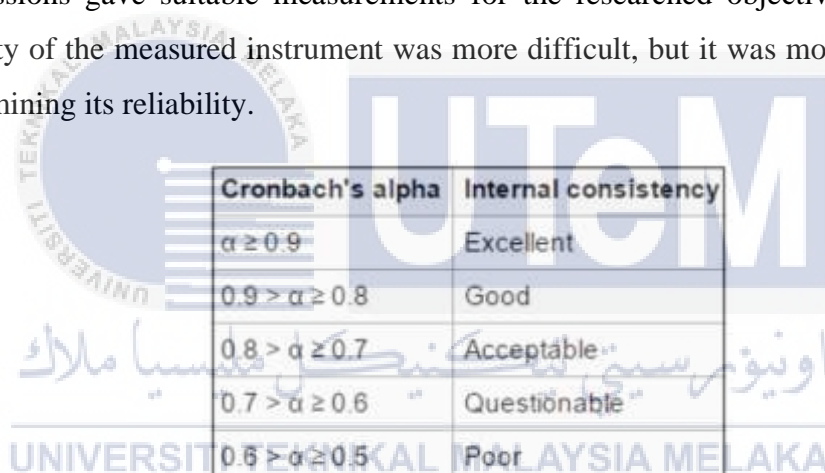
Correlation Coefficient Value ( $r$ )	Direction and Strength of Correlation
-1	Perfectly negative
-0.8	Strongly negative
-0.5	Moderately negative
-0.2	Weakly negative
0	No association
0.2	Weakly positive
0.5	Moderately positive
0.8	Strongly positive
1	Perfectly positive

**Figure 3:** Correlation Strength

### 3.6.3 RELIABILITY AND VALIDITY ANALYSIS

For researchers conducting quantitative studies, the validity and reliability analyses were essential to ensuring the highest level of research quality. In order to verify internal consistency of reliability for the dependent variable and each of the independent variables, a reliability test was used in this study. All of the study's variables should also be correlated and share the same underlying structure.

The accuracy and precision of the measure are referred to in the validity test. The consistency and quality of measurements allow researchers to acquire credible output data. Validity tests were utilized in this study to determine whether the scale's expressions gave suitable measurements for the researched objective. Testing the validity of the measured instrument was more difficult, but it was more crucial than determining its reliability.



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

**Figure 4:** Cronbach Alpha consistency

### 3.7 CHAPTER SUMMARY

This chapter had discussed a lot of researched methodology. First, the researcher introduced the researched methodology and then moved on to other topics to discuss, such as researched design, researched strategy, and so on. This chapter demonstrated the significance of researched methodology to the researcher in this studied.

## CHAPTER 4

### DATA ANALYSIS AND DISCUSSION

#### 4.0 INTRODUCTION

The Statistical Package for the Social Sciences is known as SPSS. The complete set of survey questionnaires in this chapter was analyzed using SPSS software version 23. The researcher sent out surveys to the respondents from whom this data was collected. Using an online Google Form, the researcher gathered data for the study from 266 respondents. The link was then shared via social media and online channels, including Facebook, Instagram, and WhatsApp. The data analysis process starts with the pilot test and proceeds through descriptive, correlation, regression, reliability, and other analyses of the data. The analysis's SPSS output is shown in the following data. The Pearson Correlation Coefficient and Multiple Regression Analysis Multiple will be explained by the researcher in this chapter.

#### 4.1 ANALYSIS OF PILOT TEST

Pilot testing is the process of optimizing the questionnaire to ensure that both answering the questions and recording the data will be smooth for the respondents.

#### 4.1.1 VALIDITY OF PILOT TEST

The validity test allows the researcher to assess the accuracy of the questions in the questionnaire distributed to 30 respondents. The researcher distributed the questionnaire through Google Forms among students in Utem Melaka. For 30 respondents' critical value (N-2), so CR 28 = 0.374.

**Table 4.1** Validity of pilot test for Perceived Usefulness

Variable	Indicator/Item	Correlation Value	Critical Value (Level of significance 0.05)	Validity
Perceived Usefulness	Question 1	0.854	0.374	Valid
	Question 2	0.861	0.374	Valid
	Question 3	0.824	0.374	Valid
	Question 4	0.789	0.374	Valid
	Question 5	0.892	0.374	Valid

**Table 4.2** Validity of pilot test for Perceived Ease of use

Variable	Indicator/Item	Correlation Value	Critical Value (Level of significance 0.05)	Validity
Perceived ease of use	Question 1	0.671	0.374	Valid
	Question 2	0.766	0.374	Valid
	Question 3	0.817	0.374	Valid
	Question 4	0.807	0.374	Valid
	Question 5	0.716	0.374	Valid



**Table 4.3** Validity of pilot test for Customer Satisfaction

Variable	Indicator/Item	Correlation Value	Critical Value (Level of significance 0.05)	Validity
Customer Satisfaction	Question 1	0.842	0.374	Valid
	Question 2	0.516	0.374	Valid
	Question 3	0.834	0.374	Valid
	Question 4	0.763	0.374	Valid
	Question 5	0.824	0.374	Valid

According to Tables 4.1, 4.2, 4.3, all the questions in this study are valid. This condition occurs. This condition occurs when all values are greater than the assigned critical value. The critical values were determined based on the number of respondents in the pilot test. Respondents are represented as N as information, and  $N = (30 - 2) = 28$  is 0.374 which value from the table of Critical Value= R table.

#### 4.1.2 RELIABILITY OF PILOT TEST

After collecting 30 responses from the pilot test, the questionnaire's reliability was evaluated using SPSS software. Cronbach's Alpha was calculated based on the reliability analysis to assess the consistency of responses across questions by obtaining a value of 0.60 or higher.

**Table 4.4** Reliability of pilot test

Variable	Cronbach's Alpha	N of Item	Reliability
Perceived Usefulness	0.898	5	Reliable
Ease of use	0.807	5	Reliable
Customer Satisfaction	0.809	5	Reliable

Table 4.5 displays the SPSS result; the reliability was performed on 20 items from the survey questionnaires. The reliability revealed that the questionnaire items were reliable because the Cronbach Alpha value was above 0.70, which me the acceptable value of 0.60. As a result, the outcome was acceptable and reliable, and the data collection process can be continued.

## 4.2 RESULT DISSEMINATION QUESTIONNAIRE

**Table 4.5** Result Dissemination Questionnaire

<b>Evidence</b>	<b>Total</b>
Distributed questionnaire	267
Receive questionnaire return	267
Response rate	100%
No returned questionnaire	-
Incomplete questionnaire	1
Total analyzed qualified questionnaire	266

In the online survey for this thesis, 267 participants were initially involved. However, 84 respondents were excluded from the analysis due to incomplete responses to demographic questions. Among these exclusions, 1 participant were specifically removed because their questionnaire submissions were incomplete, and not using online Payment system.

## 4.3 RESULT AND ANALYSIS

### 4.3.1 VALIDITY ANALYSIS

The validity analysis with which a method measures what it is intended to measure is referred to as its validity. One sign that a measurement is valid is high

reliability. If a method is unreliable, it is most likely invalid. Validity analysis helps the researcher to evaluate the accuracy of questions in the questionnaire that was distributed to the 266 respondents. The researcher distributed the questionnaire through Google Forms among Utem students. For 266 respondents' critical value (N-2), so CR 264 = 0.124.

**Table 4.6** Validity Analysis of Perceived Usefulness (IV 1)

Variable	Item	Value	Critical Value	Validity
Perceived Usefulness	To what extent do you believe that using the Online Payment System will enhance your ability to efficiently manage payments and improve customer satisfaction?	0.735	0.124	Valid
	How much do you think the Online Payment System will increase your productivity when processing payments and contribute to higher customer satisfaction?	0.806	0.124	Valid
	To what degree do you expect that the system will improve the convenience of making payments and positively impact customer satisfaction?	0.754	0.124	Valid
	Do you think the system will be beneficial in terms of providing you with easy access to payment services and, in turn, enhancing customer satisfaction?	0.778	0.124	Valid
	How likely is it that using this system will lead to better coordination of payment processes and result in improved customer satisfaction?	0.790	0.124	Valid

Source: Data developed by the researcher

**Table 4.7** Validity Analysis of Perceived Ease to Use (IV 2)

Variable	Item	Value	Critical Value	Validity
Perceived Ease to Use	How easy is it for you to learn how to use the Online Payment System and its features?	0.644	0.124	Valid
	Do you find the system to be user-friendly and intuitive in terms of processing payments?	0.754	0.124	Valid
	To what extent do you believe the system's interface is straightforward and easy to navigate when managing payments?	0.771	0.124	Valid
	How comfortable do you feel using the system to make payments and enhance customer satisfaction?	0.762	0.124	Valid
	Is it easy for you to understand the steps involved in using the system for processing payments and how it impacts customer satisfaction?	0.735	0.124	Valid

Source: Data developed by the researcher

**Table 4.8** Validity Analysis of Customer Satisfaction (DV)

Variable	Item	Value	Critical Value	Validity
Customer Satisfaction	Overall, how satisfied are you with the online payment system efficiency?	0.778	0.124	Valid
	The online payment system is reliable and available when you need it.	0.757	0.124	Valid
	Transactions are processed quickly and efficiently.	0.770	0.124	Valid
	The system provides clear and helpful information during the payment process	0.765	0.124	Valid
	I rarely encounter errors or issues when using our online payment system	0.809	0.124	Valid

Source: Data developed from the researcher

According to Tables 4.6,4.7 and 4.8, all the questions in this study are valid. This condition occurs. This condition occurs when all values are greater than the assigned critical value. The critical values were determined based on the number of respondents in the pilot test. Respondents are represented as N as information, and  $N= (266-2=264)$  is 0.124 in which value from the table of Critical Value= R table.

### 4.3.2 RELIABILITY ANALYSIS

According to Nunnally (1978), Cronbach's Alpha was used to determine the scales' reliability above the 0.7 reference value. A confirmatory variable analysis was carried out to determine the rankings' convergent and divergent validity. Cronbach's Alpha is a lower bound used to assess the reliability of a psychometric test and is expected to be observed as a linear correlation between two measures evaluating the same construct. Cronbach Alpha can be expressed as a percentage of the number of test items as well as the average intercorrelation between variables.

### 4.3.3 RELIABILITY ANALYSIS FOR ALL ITEM

**Table 4.9** Reliability statistics

<b>Reliability Statistics</b>		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.921	.921	15

Table 4.9 present the result of Cronbach's Alpha is 0.921 which is significantly higher than 0.70 for all variables (independent and dependent) and compute to test the reliability of research based on 30 items in the questionnaire. Therefore, this result indicate that considered excellent reliability and according to Malhotra (2012), the

measurement of reliability in this research will use Cronbach Alpha where the value of  $\leq 0.60$  is considered not reliable. If the value was more than  $\geq 0.70$ , the data was considered as highly acceptable.

**Table 4.10:** Reliability Analysis of Each Variable

Variable	Number of Item	Cronbach's Alpha	Result
Perceived Usefulness (PU)	5	0.830	Good
Perceived Ease of Used (PE)	5	0.785	Good
Customer Satisfaction (CS)	5	0.833	Good

Table 4.10 above shows the reliability analysis of the Cronbach's Alpha for each value the independent variables and the dependent variable of the analysis was more than 0.70 which mean that the results was considered excellent. The alpha value for Perceive Usefulness ( $\alpha=0.830$ ), Perceived Ease of Used ( $\alpha=0.785$ ), and customer satisfaction ( $\alpha=0.833$ ) as stated in the table.

#### 4.4 DEMOGRAPHIC ANALYSIS

**Table 4.11** Gender

Gender	Frequency	Percent
Male	141	53
Female	125	47
Total	266	100%

Table above shows the information of genders and age which are obtained from the survey among 266 respondents. The findings show that 53% (n=141) were male and 47% (n=125) were female respondents.

**Table 4.12 Age**

Age	Frequency	Percent
Below 20	10	3.8
21-30	252	94.7
31-40	4	1.5
Total	266	100

Table 4.12 above present the age of respondent that divided into 3 categories which are below 20, 21-30, and 31-40. The highest age group that responds to the survey is between 21-30 years old 94.7% (n=252). The lowest age group that responds to the questionnaire is the respondents whose age are 31-40. In this category, there was only four respondents responding the survey.

**Table 4.13 Race**

Race	Frequency	Percent
Malay	211	79.3
Chinese	27	10.2
Indian	28	10.8
Total	266	100%

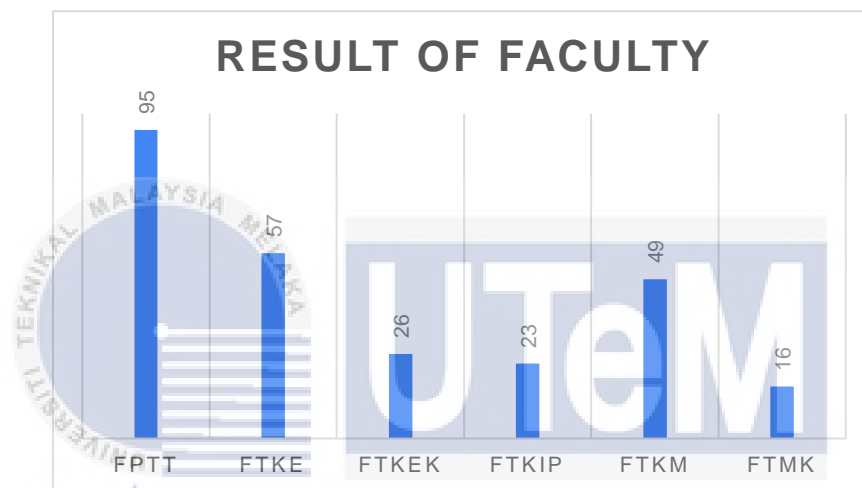


**Figure 5: Race**

Figure 4.13 shows the races of respondents that took part in this survey. Based on the pie chart above, there were 79.3% (n=211) of the Malay respondent while 10.2% (n=27) were Chinese respondents and 10.5% (n= 28) were Indian participated in this survey.

**Table 4.14** Faculty

Faculty	Frequency	Percent
FPTT	95	35.7
FTMK	16	6
FTKIP	23	8.6
FTKEK	26	9.8
FTKE	57	21.4
FTKM	49	18.4
Total	266	100%



**Figure 6:** result of faculty

The table reveals the distribution of students across various faculties, with (FPTT) having the highest representation at 35.7% (n=95), followed by (FTKE) with 21.4% (n=57), FTKM with 18.4% (n=49), FTKEK 9.8% (n=26), and FTKIP with 8.6% (n=23). (FTMK) has the lowest percentage at 6% (n=16). In total, the data includes 266 students that has responds to the survey.

**Table 4.15** Have Experience Using Online Payment System

Experience	Frequency	Percent
Yes	266	99.6
No	1	0.4
Total	267	100%



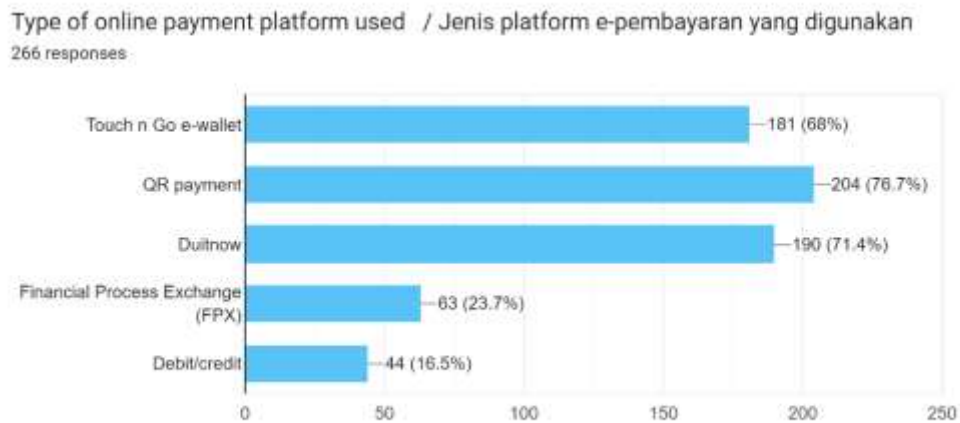
Table 4.15 summarises the respondents' experience with online payment systems, revealing that a convincing majority (99.6%) of the sample of 266 people have used online payment systems. Only a small percentage (0.4%) of respondents (one person) indicated a lack of experience with online payment systems. The significant amount of experience suggests that the surveyed individuals are familiar with online payment systems, which is an important factor to consider when exploring related themes or factors within the research context.

**Table 4.16** How frequent using online payment system in a week

<b>How frequent using online payment system in a week</b>	<b>Frequency</b>	<b>Percent</b>
Less than 3 times a week	21	7.9
3 to 5 times	93	35
More than 5 times	151	56.8
I do not use online payment system frequent	1	0.4
Total	266	100%

Table 4.16 contains information on how frequently respondents use online payment systems on a weekly basis. "More than 5 times," "3 to 5 times," "Less than 3 times a week," and "I do not use online payment systems" are among the categories. There are 35% using online payment systems three to five times per week and a 56.8% using them more than five times per week, the majority of respondents said they used them frequently. Furthermore, 7.9% said they used online payment methods fewer than three times per week. Just 0.4% of respondents, a very small percentage, said they do not use online payment system frequently. These results underscore the importance of online payment systems in the financial transactions of the surveyed individuals by indicating a broad and frequent integration of these systems into their daily lives.

#### 4.17 Type of online Payment Platform Used

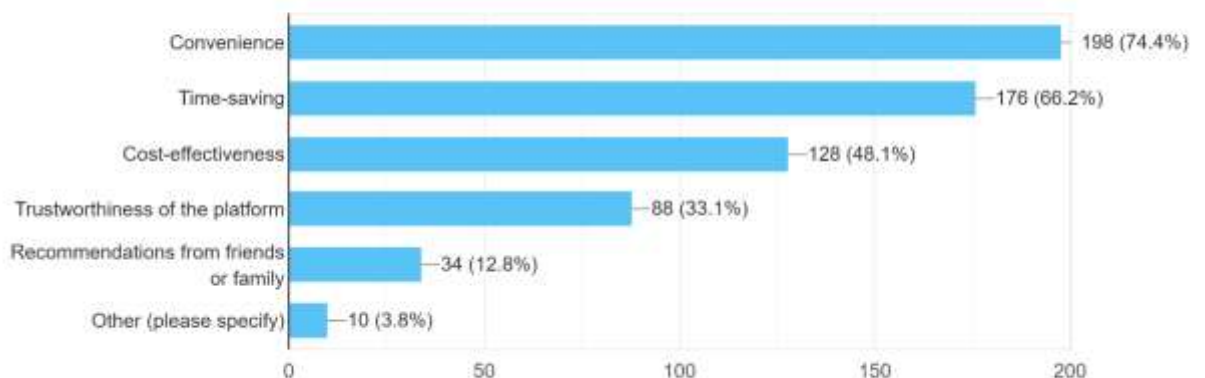


**Figure 7** Type of online Payment Platform Used

Figure above shows that type of online payment platform used by the respondent. From figure above we can see that most of the respondent prefer using QR payment to perform purchased followed by Touch n Go e-wallet, Duitnow and FPX online. The use of debit or credit card are the least choices from 266 respondent that answered the survey.

#### 4.18 Factors that influence decision to use online payment system

What factors would influence your decision to use an online payment system? (Select all that apply) Faktor-faktor apa yang akan mempengaruhi...aran dalam talian? (Pilih semua yang berkenaan)  
266 responses



**Figure 8** Factors that influence decision to use online payment system

The figure 4.18 above illustrates the factors that influence respondent's decision to use online payment system which is convenience, time saving, cost effectiveness, trustworthiness of the platform, recommendation from friends and family and others. The result shows that convenience was the biggest factor that respondent choose the most with 198 of them respond followed by time saving(176), cost effectiveness(128), trustworthiness to the platform(88), and recommendation from family and friends(34). The other 10 respondent believe that there are other factors that influence them to use online payment system that researcher not states in the survey.



## 4.5 DESCRIPTIVE ANALYSIS

### 4.5.1 MEAN SCORE ANALYSIS FOR VARIABLE

Mean score analysis is used to determine and inform characteristics of a particular question or concern. Data obtained with quantitative and statistical techniques used to summarize the details. This variable data will show through minimum, maximum, mean, and standard deviation. The researcher was using a Five-point Likert Scale to measured 15 number of items that form from the questionnaire.

### 4.5.2 PERCEIVED USEFULNESS

Table 4.19 Descriptive Analysis PU

Perceived Usefulness	N	Minimum	Maximum	Mean	Std. Deviation
1. To what extent do you believe that using the Online Payment System will enhance your ability to efficiently manage payments and improve customer satisfaction?	266	1.00	5.00	4.4812	.73819
2. How much do you think the Online Payment System will increase your productivity when processing payments and contribute to higher customer satisfaction?	266	2.00	5.00	4.3647	.71011

3. To what degree do you expect that the system will improve the convenience of making payments and positively impact customer satisfaction?	266	1.00	5.00	4.4549	.68394
4. Do you think the system will be beneficial in terms of providing you with easy access to payment services and, in turn, enhancing customer satisfaction?	266	2.00	5.00	4.4286	.69809
5. How likely is it that using this system will lead to better coordination of payment processes and result in improved customer satisfaction?	266	2.00	5.00	4.5038	.66303
Valid N (listwise)	266				

Table above illustrates the scale of minimum rating for each item was 1 while the scale of maximum rating was 5. The results in above also shows the highest mean value of “Perceived Usefulness” factor was 4.503 with the item “How likely is it that using this system will lead to better coordination of payment processes and result in improved customer satisfaction?” and its standard deviation value is 0.663. This shows that the online payment system is easy and good to use. The item “To what extent do you believe that using the Online Payment System will enhance your ability to efficiently manage payments and improve customer satisfaction?” showed the value of mean of 4.48 and the standard deviation was 0.738. Besides, the item on “To what degree do you expect that the system will improve the convenience of making payments and positively impact customer satisfaction?” had a mean value of 4.45 and standard deviation of 0.683. Item on “Do you think the system will be beneficial in terms of providing you with easy access to payment services and, in turn, enhancing customer satisfaction?” showed the value of mean 4.42 and standard deviation 0.698. Lastly, the item “How much do you think the Online Payment System will increase your productivity when processing payments and contribute to higher customer satisfaction?” had the lowest value of means which were 4.36 with the standard

deviation 0.710. The average low mean of the outcomes show that the online payment systems is reliable and it needs to be improved by the service provider.

#### 4.5.2 PERCEIVED EASE OF USED

Table 4.20 below shows the minimum rating scale for each item was 1 while the maximum rating scale was 5. The results from table 4.5 presents that the item on “Is it easy for you to understand the steps involved in using the system for processing payments and how it impacts customer satisfaction? has the highest mean value which is 4.58 and the standard deviation was 0.604 followed by the second-highest mean of item on “How comfortable do you feel using the system to make payments and enhance customer satisfaction?” where the mean value was 4.50 with its standard deviation 0.651. Moreover, the item on “How much do you think the Online Payment System will increase your productivity when processing payments and contribute to higher customer satisfaction?” had mean 4.43 with a standard deviation which were 0.623. The item “To what extent do you believe the system's interface is straightforward and easy to navigate when managing payments?” have 4.42 mean with 0.691 standard deviation while the item “Do you find the system to be user-friendly and intuitive in terms of processing payments?” have the lowest mean which is 4.39 and the standard deviation is 0.660.

**Table 4.20** Descriptive Statistics PEU

Perceived Ease of Used	N	Minimum	Maximum	Mean	Std. Deviation
1. How easy is it for you to learn how to use the Online Payment System and its features?	266	2.00	5.00	4.4286	.62387
2. Do you find the system to be user-friendly and intuitive in terms of processing payments?	266	2.00	5.00	4.3985	.66093

3. To what extent do you believe the system's interface is straightforward and easy to navigate when managing payments?	266	1.00	5.00	4.421 1	.69184
4. How comfortable do you feel using the system to make payments and enhance customer satisfaction?	266	1.00	5.00	4.503 8	.65155
5. Is it easy for you to understand the steps involved in using the system for processing payments and how it impacts customer satisfaction?	266	3.00	5.00	4.582 7	.60401
Valid N (listwise)	266				

#### 4.5.3 CUSTOMER SATISFACTION

Table 4.21 Descriptive Statistics CS

	N	Minimum	Maximum	Mean	Std. Deviation
1. Overall, how satisfied are you with the online payment system efficiency?	266	2.00	5.00	4.402 3	.68943
2. The online payment system is reliable and available when you need it.	266	2.00	5.00	4.454 9	.63233
3. Transactions are processed quickly and efficiently	266	2.00	5.00	4.466 2	.69008
4. The system provides clear and helpful information during the payment process.	266	2.00	5.00	4.533 8	.59620

5. I rarely encounter errors or issues when using our online payment system.	266	1.00	5.00	4.4624	.79176
Valid N (listwise)	266				

Table 4.21 above shows the result of descriptive statistics for customer satisfaction factor. The table above has shown the minimum rating scale was 1 while the maximum rating scale is 5. Above result revealed that the highest mean (4.53) is the items “The system provides clear and helpful information during the payment process.” with the standard deviation 0.596. Next, the items on “Transactions are processed quickly and efficiently” had the mean value 4.47 with standard deviation 0.690. The items on “I rarely encounter errors or issues when using our online payment system” had the mean value 4.46 with the standard deviation 0.791. Next, the items on “The online payment system is reliable and available when you need it” had the mean value 4.45 with standard deviation 0.632. Lastly, the item “Overall, how satisfied are you with the online payment system efficiency?” had the least mean which is 4.40 with standard deviation 0.689. From the outcomes above, it shows that majority of the respondents are satisfied with the online payment system and agreed that it is useful.



#### 4.6 CORRELATION ANALYSIS OF ALL VARIABLES

##### Pearson Correlation Analysis

When measuring each factor at a provisional or proportional level, a Pearson's correlation coefficient provides information about the size, direction, and quality of the bivariate connections between them. General guidelines regarding the quality of connections and the extent of the coefficients were provided by Hair et al. (2007).



#### 4.6.1 CORRELATION BETWEEN INDEPENDENT VARIABLE AND DEPENDENT VARIABLE

**Table 4.22:** Overall Correlation Result of All Variables

		PU	PE	CS
PU	Pearson Correlation	1	.685**	.737**
	Sig. (2-tailed)		.000	.000
	N	266	266	266
PE	Pearson Correlation	.685**	1	.768**
	Sig. (2-tailed)	.000		.000
	N	266	266	266
CS	Pearson Correlation	.737**	.768**	1
	Sig. (2-tailed)	.000	.000	
	N	266	266	266

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

The correlation between perceived usefulness and perceived ease of use, two independent variables, and the dependent variable, customer satisfaction with the online payment system, is shown in Table 4.22 above. The correlation coefficient results indicate a significant value of  $r = 0.737$  for perceived usefulness and  $r = 0.768$  for other variables. As a result, the independent and dependent variables have a strong correlation, with a high coefficient range of  $\pm 0.70$  to  $\pm 0.90$ .

#### 4.7 HYPOTHESIS TESTING

This hypothesis makes use of every independent variable that could affect consumers' satisfaction with online payment systems, such as perceived usefulness

and ease of use. The hypothesis that was first proposed in Chapter 3 is the focus of the researcher's interpretation of the significant value in the hypothesis testing. The significance value, whether greater or less than 0.05, will be compared in order to test the result presented in table 4.23.

#### **4.7.1 THE RELATIONSHIP BETWEEN PERCEIVED USEFULNESS TOWARDS CUSTOMER SATISFACTION**

H1= There is a positive relationship between perceive usefulness and customer's satisfaction.

H0 = There is no positive relationship between perceive usefulness and customer's satisfaction.

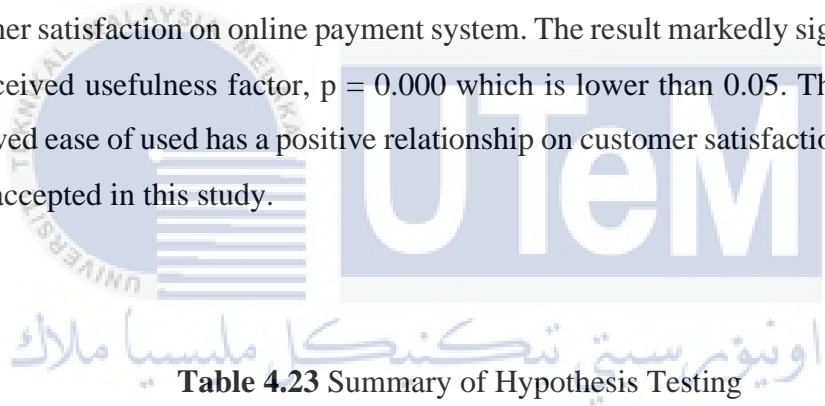
The result revealed the relationship between perceived usefulness towards customer satisfaction on online payment system. The result markedly significant value of perceived usefulness factor,  $p = 0.000$  which is lower than 0.05. This shown that perceived usefulness has a positive relationship on customer satisfaction. As a result, H1 is accepted in this study.

#### 4.7.2 THE RELATIONSHIP BETWEEN PERCEIVED EASE OF USED TOWARDS CUSTOMER SATISFACTION

H2= There is a positive relationship between perceive ease of use and customer's satisfaction.

H0 = There is no positive relationship between perceive ease of use and customer's satisfaction.

The result revealed the relationship between perceived ease of used towards customer satisfaction on online payment system. The result markedly significant value of perceived usefulness factor,  $p = 0.000$  which is lower than 0.05. This shown that perceived ease of used has a positive relationship on customer satisfaction. As a result, H2 is accepted in this study.



**Table 4.23** Summary of Hypothesis Testing

Hypothesis	Title	Result
1	There positive relationship between Perceived Usefulness towards customer satisfaction.	Accepted p-value= .000 ( $p < 0.05$ )
2	There positive relationship between Perceived Ease to Use towards customer satisfaction.	Accepted p-value= .000 ( $p < 0.05$ )

#### 4.8 MULTIPLE REGRESSION ANALYSIS (MRA)

This study employs a method that describes the variation in the dependent variable by utilizing multiple independent variables. The relationship between independent variables (perceived usefulness and perceived ease of use) and dependent variables (customer satisfaction) is explained in part by multiple regression analysis. An equation will be used to illustrate the regression analysis' findings.

**Table 4.24 :** Model Summary Multiple Regression Analysis

##### Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.820 <sup>a</sup>	.673	.671	1.51689

a. Predictors: (Constant), PE, PU

According to Table 4.24, the overall summary of findings indicated a positive R-value. Multiple regression coefficients ( $R = 0.820$ ) show a high degree of correlation. The R-value of more than  $\pm 0.80$  indicates a strong and positive relationship. The R square value in this model is 0.673, indicating that the independent variables (Perceived Usefulness and Perceived Ease of Use) influence the dependent variable (customer satisfaction) by 67.3%, while the remaining factor or causes ( $100\% - 67.3\% = 32.7\%$ ) are influenced by other factors or causes not discussed in this study.

**Table 4.25 : Regression Analysis on ANOVA**

ANOVA <sup>a</sup>						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1246.684	2	623.342	270.904	.000 <sup>b</sup>
	Residual	605.154	263	2.301		
	Total	1851.838	265			

a. Dependent Variable: CS

b. Predictors: (Constant), PE, PU

The results of the ANOVA table 4.25 show that the dependent variable (customer satisfaction) was significantly influenced by both of the independent variables (perceived usefulness and perceived ease of use), with a significant value of  $p = 0.000$ , which is less than the significance level of 0.05, and an F-test value of 270.904.

**Table 4.26 : Regression Analysis on ANOVA Coefficients**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	1.342	.911		1.473	.142
PU	.390	.047	.398	8.217	.000
PE	.551	.054	.495	10.229	.000

a. Dependent Variable: CS

Table 4.26 presenting the Beta values which mean individual independent variables relation on dependent variables. The results in the table above specify that  $B1 = 0.390$ , and  $B2 = 0.551$  respectively to all independent variables. Based on the

table, Perceived Ease of Used has the highest B value ( $B=0.551$ ,  $t=8.217$ ,  $p < 0.05$ ) among other variables and largest relation on the customer satisfaction. This showed that 55.1% variation in customer satisfaction cause due to the factor Perceived Ease of Used. Lastly, the lowest B value is the factor of Perceived Usefulness which is 0.390 with a variation of 39.0%, ( $t=8.217$ ,  $p < 0.05$ ). Hence, the outcome B value that the independent variable which is perceived Usefulness and perceived ease of used was creating a significant input for the prediction model.

The relation can be identified as the following equation from Table 4.26 above analysis

$$Y = b_0 + b_1X_1 + b_2X_2$$

Where:

Y = Customer Satisfaction on Online Payment System

$b_0$  = Regression Constant

$X_1$  = Perceived Usefulness

$X_2$  = Perceived Ease of used

$b_1$   $b_2$  = Regression Coefficient

$$Y (\text{Customer Satisfaction on Online Payment system}) = 1.342 (\text{Constant}) + 0.390 (\text{Perceived Usefulness}) + 0.551 (\text{Perceived Ease of Used})$$

#### 4.10 SUMMARY

In conclusion, 266 participants completed a questionnaire and contributed information for this investigation. In order to establish the goals of the research study, the researchers analyze the data that was gathered and discuss each of the findings in this chapter. For this study, researchers used multiple regression analysis, descriptive analysis, Pearson correlation coefficient, and hypothesis testing, among other data analysis techniques. Chapter 5 offers a thorough discussion.



## CHAPTER 5

### CONCLUSION AND RECOMMENDATION

#### 5.0 INTRODUCTION

The researcher provided an explanation and concise overview of the research findings. Subsequently, this chapter highlight more into the discussion of the results of hypothesis testing and explores the implications of the research, define the challenges faced during the exploration. Furthermore, recommendations for future research are presented following the completion of data analysis. In light of this, the study question and objectives are thoroughly examined in this chapter.



#### 5.1 SUMMARY OF FINDINGS

This summary is usually included in the conclusion or discussion section of a research paper, thesis, or report. Its purpose is to highlight the main discoveries, trends, or patterns discovered during the research process, providing readers with a quick and clear understanding of the study's outcomes without delving into the detailed methodology or data analysis. It essentially distills the most important information from the findings to provide a snapshot of what the research has revealed.

In this study, a total of 267 questionnaires were distributed among potential participants. However, the usable sample size for analysis comprised only 266



respondents. The reduction in the sample size can be attributed to various factors, including incomplete questionnaires and non-response from some participants.

The study continues with the analysis for the result that have been collected from all respondent briefly using descriptive analysis for demographic and mean score for each question from the survey, validity and reliability analysis for both pilot test and actual data from the survey and multiple regression analysis to determine the relationship between independent variable(perceived usefulness and perceived ease of use) and dependent variable(customer satisfaction).

## **5.2 JUSTIFICATION OF RESEARCH OBJECTIVE**

Using SPSS software, the first research objective accomplished through descriptive analysis. This study's findings illustrate the relationship between independent variable (perceived usefulness and perceived ease to use) and customer satisfaction, which is represented as the dependent variable. There was a significant relationship between independent variables and the dependent variable, according to the findings of this study.

### **5.2.1 FULFILLMENT OF FIRST RO 1**

**To analyze the relationship between perceived usefulness and customer satisfaction.**

Previous chapter 4 was discussing about the data analysis that overcome with the positive relationship between perceived usefulness and customer satisfaction. Therefore, based on the findings construct which is data analysis, the outcome found

that factor perceived usefulness was a significant value which is lower than 0.05. As a result, H1 is accepted in this study.

Besides, according to coefficient analysis findings that have been obtained from the data analysis, perceived usefulness to customer satisfaction showed that it was a statistically significant relationship between both variables ( $\beta = 0.039$ ,  $p = 0.000$ ). The p-value is less than 0.05. It means website design has a significantly affected the customer satisfaction. Hence, it shows that the respondents in this study think that perceived usefulness has influence on the customer satisfaction towards online payment system among Utem student. An online payment system perceived as useful is associated with higher satisfaction among users.

Beyond statistical significance, it's important to consider the practical implications. The findings suggest that improvements or enhancements in the perceived usefulness of the online payment system can lead to a more satisfying experience for Utem students. This information can guide practical interventions or improvements in the system to better meet user needs.

In conclusion, the study provides solid evidence that perceived usefulness significantly contributes to customer satisfaction in the context of online payment systems among Utem students. These findings may have practical implications for system designers, administrators, and policymakers seeking to improve user satisfaction and experience with online payment services.

### 5.2.1 FULFILLMENT OF SECOND RO 2

**To analyze the relationship between perceived ease of use and customer satisfaction.**

The findings reveal a significant positive relationship between the perceived ease of use of online payment system and customer satisfaction. This is consistent with the hypothesis asserting a positive relationship between perceived ease of use and customer satisfaction. The p-value that is lower than 0.05 ( $p = 0.000$ ) reinforces the statistical significance of this relationship. Perceived Ease of use has showed a moderate correlation between adoption where the value .768. The correlation coefficient of 0.768, considered a high correlation, reflects the strength and direction of the relationship between the perceived ease of use and the customer satisfaction of online payment system.

The online payment system is much more user-friendly than traditional methods when it comes to ease of use. Its interface makes it easy to perform transactions, which guarantees a seamless and effective user experience. The app's ability to store payment information and transaction history adds another impact as it simplifying the payment process as an entire process.

Positive user experiences, driven by perceived ease of use, contribute to long-term user loyalty. User retention and acquisition are positively impacted by satisfied users, who are more likely to stick with the system and possibly even recommend it to others.

### 5.3. IMPLICATION OF RESEARCH

#### 5.3.1 THEORETICAL IMPLICATION

Theoretical implications frequently call for the conceptualization of the manner in which online payment systems enhance consumer satisfaction. Here, the interaction between user psychology and the abstract design concepts of payment systems is the main focus. One of the most important aspects is the perceived usefulness. Customers are likely to be more satisfied if they realise that using an online payment method makes shopping easier by making it faster and more efficient to finish a purchase. A system that is viewed as helpful and saves time will have a high user satisfaction rating.

The next factor that we take into consideration is the perceived ease of use. Customers are more likely to use a payment method freely and repeatedly if it is less complicated than the one they are already using. The likelihood of a customer being satisfied with their experience is increased when the payment can be done in a few simple steps, with instructions that are easy to understand, and without the requirement of providing unnecessary details. If clients see an online payment system as user-friendly and simple to use their happiness with the transaction process is likely to grow, hence enhancing the likelihood of repeat usage.

### 5.3.2 PRACTICAL IMPLICATION

The term "practical implications" refers to the utilisation of payment systems in real-world scenarios and the direct influence that these systems have on the level of satisfaction experienced by customers.

#### Multiple Payment Methods

Offering many payment choices helps customers with their different wants and needs, making it easier for them to complete a transaction. Some examples of this are credit cards, which are more standard, Apple Pay and Google Wallet, which are newer digital wallets, and even PayPal and cryptocurrencies. Negotiating with different payment providers, adding their services to the online platform, and regularly updating the system to include new payment technologies as they come out are all parts of the actual implementation.

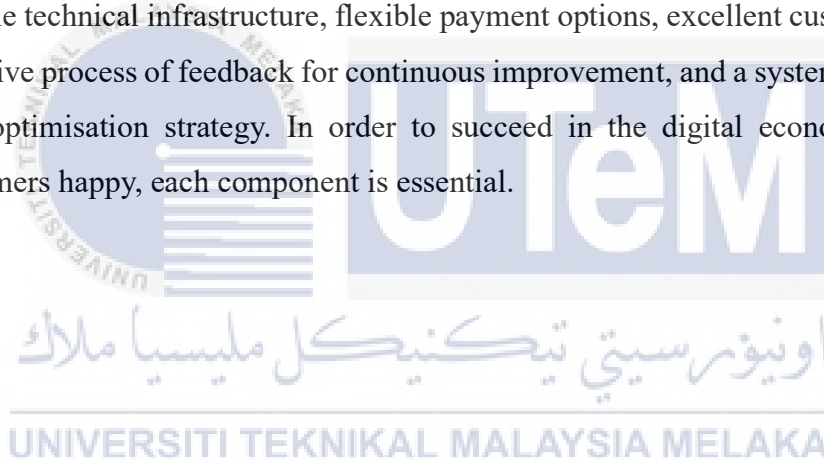
#### Customer Support for Processing Payments

Regarding payment processing, providing good customer service means teaching employees how to deal with a variety of problems, such as helping a customer through the payment process and handling issues like chargebacks or transactions that were not authorised. In addition, this includes making sure that self-help tools like Frequently Asked Questions (FAQs) and Troubleshooting Guides are well-designed and easy to find. The ability to offer real-time help through live chat can be very helpful when working with money matters.

## **Improvement Strategies Based on Feedback**

Businesses can learn how customers feel about the payment process with the use of a dynamic feedback system. This can be accomplished by keeping an eye on social media, sending out questionnaires after a transaction, or collecting direct feedback. The next stages must be to gather this feedback and then analyse it for trends and to identify problem areas. It is essential to continue this process of improvement in order to adjust to evolving consumer demands and behaviours.

In summary, the practical implications of developing a good online payment system are considerable. They require careful user experience design, a secure and reliable technical infrastructure, flexible payment options, excellent customer service, an active process of feedback for continuous improvement, and a system that relies on data optimisation strategy. In order to succeed in the digital economy and keep customers happy, each component is essential.



### **5.4 LIMITATION OF RESEARCH**

While the study establishes a correlation between perceived ease of use and perceived usefulness to customer satisfaction, it may not definitively establish causation. The relationship might be influenced by other unexplored variables that could be addressed in future research. Moreover, the results of the study are predicated on a particular demographic group, such as Utem students, or a particular sample size. It's possible that the findings can't be applied to a larger population, so care should be taken when using them in other situations.

The study may not consider for rapid technological changes or advancements that could impact the variable (perceived usefulness, perceived ease of use and customer satisfaction). Future studies might explore the adaptability of the online payment system to evolving technologies. Moreover, the study might be constrained by time limitations, impacting the depth of data collection, analysis, and the exploration of additional variables. A more extensive timeframe could allow for a more comprehensive investigation.

Lastly, the study is limited to a single method of data collection, which is surveys. Integrating multiple methods could improve the study's validity and provide a more comprehensive understanding of the relationship under investigation.



## 5.5 RECOMMENDATION FOR FUTURE RESEARCH

At the time the researcher studied only two variable which is perceived usefulness, and perceived ease to use. In the future can add variables to respondents like perceived trust and security to determine others impact that relate to customer satisfaction on online payment systems.

Next, researcher can examine how well online payment systems adapt to new technologies. Examine how these systems evolve to include new features, security measures, and user interfaces, as well as how these changes affect user perceptions and satisfaction. The researcher also can conduct comparative studies between online payment systems and traditional payment methods to learn about the advantages and disadvantages of each. This could provide useful information about why users perceive online payment systems to be more user-friendly.

The researcher suggested taking enough time to locate various geographic areas. As things stand, the only places to find researchers are in and around Utem, Melaka. Researchers can expand the scope in the future to take into account the opinions of more people. In order to obtain higher quality and more significant results from the research being conducted, it is advised that the sample size and study duration be increased as bonuses.

## 5.6 CONCLUSION

This chapter's discussion highlights on the conclusions drawn from the data analysis covered in Chapter 4. Consequently, a definitive conclusion can be made: the essential data analysis and literature review support the entire research project. This comprehensive approach has practical implications in addition to making it easier to



generate new contributions to the body of existing knowledge. Executing the suggestions for further investigation could potentially result in significant benefits.

Important conclusions were drawn from the study, which examined the effect of online payment systems on customer satisfaction. The theories positing that customer satisfaction would be positively impacted by online payment systems' perceived utility (PU) and perceived ease of use (PEOU) have been validated.

Evidence from the data analysis suggests that perceived usefulness is a critical factor; customers who find online payment systems beneficial to their needs tend to report higher satisfaction levels. This relationship underscores the importance of developing payment systems that not only meet the functional requirements of users but also enhance the overall experience by being beneficial in the context of their daily transactions.

Moreover, perceived ease of use emerged as a substantial influencer on customer satisfaction. Payment systems that are user-friendly and require minimal effort to navigate contribute to positive user experiences, thereby increasing the likelihood of continued use and satisfaction. It was observed that even a system with numerous features will not satisfy customers if they find it cumbersome to use.

While both independent variables have shown significant relationships with the dependent variable, customer satisfaction, it is perceived usefulness that exhibits a slightly stronger bond. This suggests that while ease of use is necessary, the actual benefits and utility provided by the payment system take precedence in determining customer satisfaction.

## REFERENCES

Abdulrahman, Ameena, et al (2020). Journal Of Critical Reviews The Impact Of Quality E-Payment System On Customer Satisfaction. <https://www.jcreview.com/admin/Uploads/Files/61f2a881133024.44895981.pdf>

Barrett-Maitland, N., Barclay, C., & Osei-Bryson, K. M. (2016). Security in social networking services: a value-focused thinking exploration in understanding users' privacy and security concerns. *Information Technology for Development* 22(3), 464–486.

Chukwu, Origin K, Ubah C, Njideka E.(2021).International Journal of Scientific and Management Research, (2021), 30-48, 04(05).

Edu Nation: Many choices in pursuing studies after secondary school. (2023). Retrieved June 17, 2023, from The Edge Malaysia website: <https://www.theedgemaalaysia.com/article/edu-nation-many-choices-pursuing-studies-after-secondary-school>.

“Factors Affecting E-Payment Acceptance by Customers: An Empirical Study in the Kingdom of Bahrain. Emerald Insight, Competitiveness Review: An International Business Journal, vol. ahead-of-print ,no. ahead-of-print, 2022, p. -, [www.emerald.com/insight/content/doi/10.1108/CR-09-2022-0133/full/html](http://www.emerald.com/insight/content/doi/10.1108/CR-09-2022-0133/full/html), <https://doi.org/10.1108//CR>.

Halim, H., Basar, S. A., Hamzah, H., Sukrri, N. N. A. N. M., & Bhuiyan, A. B. (2023). CUSTOMER SATISFACTION ON E-BANKING SERVICES AMONG UNIVERSITY STUDENTS IN MALAYSIA. *Asian Finance & Banking Review*, 7(1), 1-9. <https://doi.org/10.46281/asfbr.v7i1.1916>

Ijeoma, C., Okpara, J., Akujor, C. & Mbah, J. (2020). Electronic banking and customer satisfaction in Imo state. *EJBMR, European Journal of Business and Management Research*, 5(6), 1-9.

Jou, Y.-T., Charmine Sheena Saflor, Klint Allen Mariñas, Young, M., Yogi Tri Prasetyo, & Satria Fadil Persada. (2022). Assessing Service Quality and Customer Satisfaction of Electric Utility Provider's Online Payment System during the COVID-19 Pandemic: A Structural Modelling Approach. 11(22), 3646–3646. <https://doi.org/10.3390/electronics11223646>.

Karim, W., Haque, A., Ulfy, M. A., Hossain, A., Anis, Z. (2020). Factors Influencing the Use of E-wallet as a Payment Method among Malaysian Young Adults.(JIBM) Journal of International Business and Management. <https://doi.org/10.37227/jibm-2020-2-21>.

Mohammed , A. B. (2018). Selling smartphones to generation Z: understanding factors influencing the purchasing intention of smartphone. International Journal of Applied Engineering Research, 13(6), 3220-3227.

Nizam , F., Hwang , H. J., & Valaei, N. (2018, July ). Measuring the Effectiveness of E-Wallet in Malaysia. 3rd IEEE/ACIS International Conference on Big Data, Cloud Computing, and Data Science Engineering (pp. 59-69). Springer, Cham.

Nnamani, M. & Makwe, S. (2019). Impact of electronic banking on customer satisfaction. IDOSR Journal of Science and Technology, 4(1): 23-35.

Renee, Michelle, and D Ching. Challenges and Opportunities of Electronic Payment Systems in the Philippines. 2017. <https://www.dlsu.edu.ph/wp-content/uploads/pdf/conferences/research-congress-proceedings/2017/HCT/HCT-I-006.pdf>.

San, W. H., Von, W. Y. ., & Muhammad Imran Qureshi. (2020). The Impact of E-Service Quality on Customer Satisfaction in Malaysia. *Journal of Marketing and Information Systems*, 3(1), 46–62. <https://doi.org/10.31580/jmis.v3i1.1452>

Saunders, M., Lewis, P. and Thornhill, A. (2016) Research Methods for Business Students. 7th Edition, Pearson, Harlow. - References - Scientific Research Publishing. (2016). Retrieved June 12, 2023, from Scirp.org website: [https://www.scirp.org/\(S\(351jmbntvnsjt1aadkposzje\)\)/reference/ReferencesPapers.aspx?ReferenceID=2397725](https://www.scirp.org/(S(351jmbntvnsjt1aadkposzje))/reference/ReferencesPapers.aspx?ReferenceID=2397725).

Super User. (2020). Fast Fact. Retrieved June 21, 2023, from Utem.edu.my website:

<https://www.utem.edu.my/en/background/fastfact.html#:~:text=As%20a%20focused%20university%2C%20UTeM,nearly%202020%2C600%20graduates%20since%202005.>

Ukoha, I., Henri-Ukoha, A., Ibeagwa, O., Essien, U., Osuji, M. (2017). Determinants Of Rural Farmers Preference For Cash-less Transactions In Imo State. RAAE, 1(20), 16-19. <https://doi.org/10.15414/raae.2017.20.01.16-19>

Wong Yoke San, Wong Yee Von, & Muhammad Imran Qureshi. (2020). The Impact of E-Service Quality on Customer Satisfaction in Malaysia. 3(1), 46–62. <https://doi.org/10.31580/jmis.v3i1.1452>

Yo, P., Kee, D., Yu, J., Hu, M., Jong, Y., Ahmed, Z., ... & Nair, R. (2021). The Influencing Factors Of Customer Satisfaction: a Case Study Of Shopee In Malaysia. EEA, 12(39). <https://doi.org/10.25115/eea.v39i12.6839>.

Yaokumah , W., Kumah , P., & Okai , E. A. (2017). Demographic influences on e-payment services. Journal of E-Business Research, 13(1), 44-65.

## Appendices

### Questionnaire



### **Faculty of Technology Management and Technopreneurship**

### **IMPACT OF ONLINE PAYMENT SYSTEM ON CUSTOMER SATISFACTION**

Dear Mr./Ms.,

My name is Muhammad Khairul Imran bin Ramli, a final year student that are currently undertaking Bachelor of Technology Management with Honours (Innovation) at University Teknikal Malaysia Melaka (UTeM). Currently, I am conducting a research which entitled "Impact of Online payment System Efficiency on Customer Satisfaction". The main purpose of this research is to identify the impact affecting the online payment system efficiency on customer satisfaction.

This questionnaire is divided into three parts: Section A is respondent's demographic profile; Section B is the Impact of online payment Systems and Section C. All the information provided by respondents will be strictly confidential and just used for academic research purpose. Your willingness and cooperation to complete this survey is highly appreciated.

Thank you.

**Any question as regards to this survey, please do not hesitate to contact:**

Muhammad Khairul Imran bin Ramli

Faculty of Technology Management and Technopreneurship

Universiti Teknikal Malaysia Melaka (UTeM)

Email: [khairulimran104@gmail.com](mailto:khairulimran104@gmail.com)

## Section A: Demographic Profile

### *Bahagian A: Profil Demografik*

This section consists of questions regarding your background information. Please tick (✓) the appropriate answer in the box provided.

Bahagian ini mengandungi soalan mengenai maklumat latar belakang anda. Sila tandakan (✓) jawapan yang sesuai di petak yang disediakan.

1. Gender / Jantina

Male / *Lelaki*

Female / *Perempuan*

2. Age / Umur

Below 20 / *20 ke bawah*

21-30

31-40

3. Race / Bangsa

Malay / *Melayu*

Indian / *India*

Chinese / *Cina*

Others / *Lain-lain*: \_\_\_\_\_

4. Faculty/fakulti

FPTT

FTMK

FTKIP

FTKEK

FTKE

FTKM

Others / Lain-lain: \_\_\_\_\_

5. Do you have any prior experience using online payment systems?

Yes / *Ya*

No / *Tidak*

6. How frequently do you used online payment system in a week?

Less than 3 times / Kurang daripada 3 kali

3 to 5 times / 3 hingga 5 kali

More than 5 times / Lebih daripada 5 kali

I do not used online payment frequent/ Saya tidak menggunakan system bayaran online kerap

7. Type of online payment platform used / Jenis platform e-pembayaran yang digunakan

Touch n Go e-wallet

QR payment

Duitnow اونيور سيتي تيكنيكل مايكرومارك

Financial Process Exchange (FPX) UNIVERSITI TEKNIKAL MALAYSIA MELAKA

Debit/credit

8. What factors would influence your decision to use an online payment system? (Select all that apply) Faktor-faktor apa yang akan mempengaruhi keputusan anda untuk menggunakan sistem pembayaran dalam talian? (Pilih semua yang berkenaan)

Convenience / Kemudahan

Time-saving / Jimat masa

Cost-effectiveness / Berkesan dari segi kos

Trustworthiness of the platform / Kebolehpercayaan platform


- Recommendations from friends or family / Cadangan dari rakan atau keluarga
- Other (please specify) / Lain-lain (sila nyatakan): \_\_\_\_\_

**Section B: Impact of online payment system efficiency on customer satisfaction**

**Bahagian B: Kesan kecekapan sistem pembayaran online kepada kepuasan pelanggan**

This section aims to gather the opinions of respondents regarding the impact of online payment system efficiencies on customer satisfaction. Please indicate your level of agreement using a Likert scale and mark (✓) the appropriate answer.

Bahagian ini bertujuan untuk mengumpul pendapat responden mengenai kesan kecekapan sistem pembayaran online kepada pelanggan. Sila nyatakan tahap persetujuan anda dengan menggunakan skala Likert dan tanda (✓) jawapan yang sesuai.

				
Strongly Disagree				Strongly Agree
1	2	3	4	5

<b>A. Perceived Usefulness /</b>						
No		1	2	3	4	5
1	To what extent do you believe that using the Online Payment System will enhance your ability to efficiently manage payments and improve customer satisfaction?					



	<i>Sejauh manakah anda percaya bahawa penggunaan Sistem Pembayaran Dalam Talian akan meningkatkan keupayaan anda untuk menguruskan pembayaran dengan cekap dan meningkatkan kepuasan pelanggan?</i>					
2	How much do you think the Online Payment System will increase your productivity when processing payments and contribute to higher customer satisfaction? <i>Sejauh manakah anda percaya bahawa Sistem Pembayaran Dalam Talian akan meningkatkan produktiviti anda semasa memproses pembayaran dan menyumbang kepada peningkatan kepuasan pelanggan?</i>					
3	To what degree do you expect that the system will improve the convenience of making payments and positively impact customer satisfaction? <i>Sejauh manakah anda menjangkakan bahawa sistem ini akan meningkatkan keselesaan semasa membuat pembayaran dan memberikan impak positif kepada kepuasan pelanggan?</i>					
4	Do you think the system will be beneficial in terms of providing you with easy access to payment services and, in turn, enhancing customer satisfaction? <i>Adakah anda berpendapat bahawa sistem ini akan memberikan manfaat dalam memberikan akses mudah kepada perkhidmatan pembayaran dan seterusnya meningkatkan kepuasan pelanggan?</i>					
5	How likely is it that using this system will lead to better coordination of payment processes and result in improved customer satisfaction? <i>Sejauh manakah kemungkinan penggunaan sistem ini akan membawa kepada peningkatan koordinasi proses pembayaran dan hasilkan peningkatan kepuasan pelanggan?</i>					

#### B. Perceived Ease of Use


No		1	2	3	4	5
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1	<p>How easy is it for you to learn how to use the Online Payment System and its features?</p> <p><i>Seberapa mudah bagi anda untuk belajar cara menggunakan Sistem Pembayaran Dalam Talian dan fitur-fiturnya?</i></p>					
2	<p>Do you find the system to be user-friendly and intuitive in terms of processing payments?</p> <p><i>Adakah anda mendapati sistem ini mudah digunakan dan intuitif dalam pemprosesan pembayaran?</i></p>					
3	<p>To what extent do you believe the system's interface is straightforward and easy to navigate when managing payments?</p> <p><i>Sejauh manakah anda percaya antara muka sistem ini adalah mudah difahami dan mudah dinavigasi ketika menguruskan pembayaran?</i></p>					
4	<p>How comfortable do you feel using the system to make payments and enhance customer satisfaction?</p> <p><i>Seberapa selesa anda merasa menggunakan sistem ini untuk membuat pembayaran dan meningkatkan kepuasan pelanggan?</i></p>					
5	<p>Is it easy for you to understand the steps involved in using the system for processing payments and how it impacts customer satisfaction?</p> <p><i>Adakah mudah bagi anda untuk memahami langkah-langkah yang terlibat dalam menggunakan sistem ini untuk memproses pembayaran dan bagaimana hal ini mempengaruhi kepuasan pelanggan?</i></p>					

## SECTION C: CUSTOMER SATISFACTION

### Bahagian C: Penggunaan Sebenar Sistem Pembayaran Dalam Talian

This section assesses respondents' actual use of the online payment system. Please indicate your level of experience using a Likert scale and mark (√) the appropriate response. Bahagian ini menilai penggunaan sebenar responden terhadap sistem pembayaran dalam talian. Sila nyatakan tahap pengalaman anda dengan menggunakan skala Likert dan tandakan (√) jawapan yang sesuai.

				
Strongly Disagree				Strongly Agree
1	2	3	4	5

No	(Lescevic et al., 2013; Mei, 2019; Venkatesh et al., 2003)	1	2	3	4	5
1	Overall, how satisfied are you with the online payment system efficiency? <i>Secara keseluruhan, seberapa puas anda dengan kecekapan sistem pembayaran dalam talian?</i>					
2	The online payment system is reliable and available when you need it. <i>Sistem ini adalah boleh dipercayai dan tersedia bila anda memerlukannya.</i>					
3	Transactions are processed quickly and efficiently. <i>Transaksi diproses dengan cepat dan cekap.</i>					
4	The system provides clear and helpful information during the payment process. <i>Sistem ini memberikan maklumat yang jelas dan membantu semasa proses pembayaran.</i>					

5	<p>I rarely encounter errors or issues when using our online payment system.</p> <p><i>Saya jarang menghadapi ralat atau masalah semasa menggunakan sistem pembayaran dalam talian kami.</i></p>					
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Thank You For Your Time And Cooperation.

Terima Kasih Atas Masa Dan Kerjasama Anda.



## Gantt Chart

**Appendix 1: Gantt Chart For Final Year Project 1**

Activities	Week														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
FYP Brief	■														
Confirm Title and Supervisor	■	■													
Modification and confirmation of research topic			■												
Identify research objectives and research questions				■											
Identify Conceptual framework, problem statement and background of study					■										
Find information for literature review						■	■	■	■	■	■				
Completed for chapter 1															
Completed for chapter 2															
Completed for chapter 3											■	■	■		
Revised report before presentation													■		
Viva Presentation for FYP 1														■	
Correction of FYP 1															■
Submission of FYP 1															■

## Appendix 2: Gantt Chart For Final Year Project 2

Activities	Week														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
FYP Brief															
Questionnaire Development															
Pilot Test															
Collect Data															
Analyze the data															
Chapter 4															
Chapter 5															
Revised report before presentation															
Viva Presentation for FYP 2															
Submission of full thesis															