THE DETERMINING FACTORS INFLUENCING CONSUMER'S INTENTION TO USE E-PAYMENT IN PUBLIC BUS IN JOHOR BAHRU

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DEDICATION

This report is dedication to my beloved parent, dearest families, respected teachers and lecturers, and fellow friends, who taught me the best knowledge, kindness, and perseverance. In the hope that this research can contribute the body of knowledge and toward the nation building. This report is also dedicated to my beloved mother and father, who taught me that even the worst hardship is upon you, you can face it. Always have a positive and grow mindset and never give up. It all begins with a little hope and idea, which transform into reality.

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ABSTRACT

In the past decade, the use of electronic payment or e-payment in Malaysia has grown rapidly and to the extend it overtook conventional cash payment. E-payment has facilitated consumers to perform a smoother transaction process. According to Bank Negara Malaysia, Malaysia's consumers are not willing to migrate to e-payment. The reluctancy among consumer to adopt e-payment technologies caused a major obstacle. Given the situation, the challenge is to understand the passenger's behaviour reluctancy and their intention to adopt e-payment in public bus. In this study, the researcher aims to study the significant factors that influence the consumer's intention to use e-payment in the public bus. The proposed framework was developed by extending the Technology Acceptance Model (TAM) framework with the Theory of Reason Action (TRA). This study the relationship between Ease of use, Perceived Usefulness, Perceived Security, Attitudes on e-payment, and Perceived Cost. The study area of this research at Johor Bahru District. In this study, Johor Bahru district is defined an area within Majlis Bandaraya Johor Bahru and Majlis Bandaraya Iskandar Puteri jurisdiction area. A total data of 203 respondents were collected though online questionnaire. At 95 percent confidence level, the survey applying Person's correlation, Multiple regression analysis and hypothesis testing to identify the significance factor and the passenger's intention. Finally, the study had identified that Perceived ease of use, Perceived usefulness, and Attitude were found to be significant factor that determine intention to use e-payment in the public bus in Johor Bahru.

ABSTRAK

Sejak dekad yang lalu, penggunaan pembayaran elektronik (e-pembayaran) di Malaysia telah berkembang pesat sehingga mengatasi nisbah pembayaran tunai konvensional. E-pembayaran telah memudahkan pengguna untuk melakukan proses transaksi dengan lebih lancar dan selamat. Menurut Bank Negara Malaysia, pengguna Malaysia masih tidak bersedia untuk menggunakan e-pembayaran. Keengganan dalam kalangan pengguna untuk menggunakan teknologi e-pembayaran antara halangan besar untuk syarikat memanfaatkan e-pembayaran. Oleh itu, ia penting untuk memahami punca-punca keengganan penumpang dan niat mereka untuk menggunakan e-pembayaran di dalam bas awam. Dalam kajian ini, penyelidik akan mengkaji faktor-faktor penting yang mempengaruhi niat pengguna untuk menggunakan e-pembayaran di dalam bas awam. Kerangka kerja yang dicadangkan dikembangkan dari kerangka *Technology Acceptance Model (TAM)* dan *Theory of Reason Action (TRA)*. Kajian ini dilakukan untuk memahami hubungan antara Kemudahan penggunaan, Tanggapan Faedah Penggunaan, Tanggapan terhadap Keselamatan, Sikap terhadap e-pembayaran, dan Tanggapan Kos. Kawasan penyelidikan adalah di Daerah Johor Bahru. Dalam kajian ini, daerah Johor Bahru didefinisikan sebagai kawasan dibawah pentadbiran Majlis Bandaraya Johor Bahru dan Majlis Bandaraya Iskandar Puteri. Sebanyak 203 data responden telah dikumpulkan melalui sebaran borang soal selidik secara atas talian. Dengan tahap keyakinan 95 peratus, kajian ini menggunakan Korelasi Person's, *Multiple regression analysis* dan pengujian hipotesis untuk mengenal pasti faktor penting yang mempengaruhi niat penggunaan penumpang. Kajian ini mendapati, Kemudahan penggunaan, Tanggapan Faedah Penggunaan dan Sikap terhadap e-pembayaran, merupakan faktor penting yang menentukan niat untuk menggunakan e-pembayaran di dalam bas awam di Johor Bahru.

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LIST OF ABBREVIATIONS

AOE	-	Attitudes on E-payment
APAD	-	Agensi Pengangkutan Awam Darat
ATM	-	Automated Teller Machine
CTS	-	Common Ticketing System
EOU	-	Perceived Ease of use
ETC	-	Electronic Toll Collection operator
IMBRT	-	Iskandar Malaysia Bus Rapid Transit
IT	-	Information Technologies
KL	-	Kuala Lumpur
KTM	-	Keretapi Tanah Melayu
MBIP	-	Majlis Bandaraya Iskandar Puteri
MBJB	-	Majlis Bandaraya Johor Bahru
MLR	-	Multiple Linear Regression
OMO	-	One-man Operator
PAJ	-	Perbadanan Pengangkutan Awam Johor
PC	-	Perceived Cost
POU	-	Perceived Usefulness
PS	-	Perceived Security
TAM	-	Technology Acceptance Model
TRA	-	Theory of Reason Action
UTAUT	-	Unified Theory of Acceptance and Use of Technology
VIF	-	Variance Inflation Factor

LIST OF SYMBOLS

α	-	Significance level
n	-	Sample size
p	-	The population proportion
z	-	The normal test statistic
X	-	Independent variable(s)
Y	-	Dependent variable
ε	-	random error
ρ	-	Population correlation coefficient
r	-	Sample correlation coefficient

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CHAPTER 1

INTRODUCTION

1.1   Research Background

Technological advancement in payment systems had allowed people around the globe to experience a faster, smoother, and efficient lifestyle. This growth had led to the development of a modern payment system called electronic payment or e-payment system. E-payment is define as a kind of payment that does not include paper or any physical cheque in the transaction (Wei, 2017). The birth of a new mode of payment had played a significant role in every sector, including transportation which offers the user a more convenient and efficient mechanism in comparison with the traditional paper cash or coins. One of the main components of efficient public transport is the integration of the fare and ticketing system. Fare and ticketing can influence travel behaviour and the intention to use public transportation (Št'astná et. al, 2015).

One of the options to enhance the fare and ticketing system is e-payment. Blythe (2004) stated that in comparison with the traditional paper ticket or magnetic card, e-payment is a more effective, convenient, and more durable option. E-payment option like smart card had proved its efficiency because it is reliable, and very convenient to carry due to its small size. The rise in online shopping, mobile ownership, and internet penetration has caused a decline in cash transactions with more consumers opting for e-payment (Ng, 2016). From 2002 to 2012, it is reported that the shared of payment cards and e-payment had increased from 52% to 72% (Ooi Widjaja, 2016). As technology advancement, there is no doubt, e-payment is making a ripping effect not just from the business perspective but consumers as well. Today, there are many types of e-payments mechanisms use in public transportation around the world. This includes debit cards, credit cards, smart cards, and even mobile payments.

However, many consumers in Malaysia are not willing to migrate to e-payment due to a lack of awareness of cashless payment according to Bank Negara Malaysia (2009). Some studies even suggest that one of the main reasons people are not ready to use e-payment is because of security and trust concerns (Al-majali & Bashabsheh, 2016; Nag & Gilitwala, 2019). Moreover, the technological innovation is relatively new and can be hard to comprehend especially to those who have lack experience.

The reluctance among consumer to adopt e-payment technologies had a major obstacle to the businesses owner that want to take advantages of the services (Sidek, 2015). In a market study done by Prosser (2014) in the United Kingdom, it was discovered that one in six consumers will not proceed with the transaction if the card payment is unaccepted. Reuters in 2020 reported that Malaysia's annual total digital payment is projected to grow 10.8% per year and account for about RM 60 billion by 2023. Pritchard et al (2015) stated that for transit operators to move into a digital system, one of the potential challenges is customer experience. The relationship between new technologies and consumers' needs may be exposed to many indirect factors that influence their behaviour to adopt e-payment.

1.2   Problem Statement

The e-payment system has been part of Malaysia's payment ecosystem, especially in the transportation sector. In 1997, Touch 'n Go Sdn. Bhd had introduced an e-payment card to enhance the quality of the services. In Malaysia, Touch N Go providing the Common Ticketing System (CTS) and the sole operators for Electronic Toll Collection (ETC) operator and the. In 2011, Rapid KL in collaboration with Touch N GO, they had introduced the smart ticketing system at their respective public transportation network. The new ticketing system allows a passenger to transfer and seamless, reduces waiting time, and environmentally friendly. Although the e-payment system is had been around for quiet sometime in Malaysia, Johor Bahru is lagging to incorporate e-payment in the city's public transportations system.

With the development of technologies and an increasing numbers of electronic payment merchants in Malaysia, the influence of e-payment become more crucial. In addition, there are many factors that can influence the consumer's willingness to use e-payment especially in the public transportation system. In public transportation, a smoother and easy payment method also affects the passenger's behaviours intention to use cashless transaction. In 2023, Iskandar Malaysia Bus Rapid Transit (IMBRT) is scheduled to launch with the Integrated Common Payment System (ICPS). The implementation of IMBRT will pave the way for e-payments like the smart cards and mobile payments. However, without a proper study on e-payment from the passenger perspective, might lead to bus becoming less attractive as modes of transportation.

The current fare payment method in Johor Bahru are cash transactions and smart cards. Bas Muafakat Johor is the only bus that use fully smart card (Kad Muafakat Johor) while CausewayLink using both smart card (ManjaLink) and cash transaction. Others bus like City Bus, Maju and S&S are still using cash payment only. When using cash transactions, passengers are facing problems such as taking extra time on queuing, paying, and changing transaction. These problems can be resulted in reduced service performance and disturbing the travel times for the passenger. The manual cash collection system is prone to human error and miscalculation. The usage of cash transactions can lead to the bus operator's revenue shortfall. Besides that, some operators in Johor Bahru are reluctant to embrace the technology of the cashless method like a smart card.

Some operators still using cash transactions is which far from the latest payment option technology like contactless payment, which is more convenient to the passengers, seamless, and efficient. Most of Johor Bahru's bus operators are using a "one-man operation" (OMO) system, where the passenger needs to ask the driver before boarding the bus. Although OMO has been introduced more than fifteen years, the system is still operating with the same procedure without any substantial improvement (Moktar, 2011). On the other hand, a study was done by Bank Negara Malaysia (2009) found, many customers are not willing to migrate to e-payment due to a lack of awareness on e-payment. Some studies even suggest that one of the main

reasons people are not ready to use e-payment is because of security and trust concerns. Moreover, many factors can contribute to the usage of e-payment by an individual.

Even though, study indicate that e-payment is on a growing trend in Malaysia, with many service providers are established (Wei, 2017), there are fewer initiatives done by the bus operators to migrate from cash transactions to e-payment system. On top of that, the current e-payment are disintegrated between each other. This mean consumer needs to have multiple smart cards to complete their journey and enjoy the benefit (Loo et al., 2015). Consequently, the passengers will turn away from the public bus, and this will not benefit the bus operator in the Johor Bahru region.

Given the situation above, the challenge is to identify the critical factors that potentially influence the intention of passengers to use the e-payment in a public bus in the Johor Bahru region. As such, understanding these significant determinants will be crucial for stakeholders in public buses in seeking to take advantage of e-payment. Hence, improving passenger's experiences and improve operational efficiency. This qualitative method would be able to provide information to stakeholders on how to address the current e-payment system as an alternative means of payment.

1.3   Aim

This study aims to identify the determining factors influencing passenger's intention to use e-payment in the public bus in Johor Bahru.

1.4   Research Objectives

The research objectives for this research are:

(a)   To list factors that potentially relate to the passenger's intention to use e-payment in public transport.

(b)   To identify the significant factors that relate to the passenger's intention to use e-payment in the public bus in Johor Bahru.

(c)   To determine the relationship between significant factors and passenger's intention to use e-payment in public bus in Johor Bahru.

1.5   Research Questions

The following are the research questions:

(a)   What are the factors that may relate to the passenger's intention to use e-payment?

(b)   What are the significant factors that relate to the passenger's intention to use e-payment in the public bus in Johor Bahru?

(c)   What is the relationship between significant factors and the passenger's intention to use e-payment in public bus in Johor Bahru?

1.6 Research Gap

This research attempts to fill the gap between past research on the public transportation system, which only focused on commuters in Klang Valley area. Moreover, limited studies that were conducted on e-payment system in Malaysia as well as the Johor Bahru area. This research helps to determine the determinant factors that influences passenger's intention to use e-payment in public bus from passengers' point of view rather than operators. Consequently, tackling the existing transportation issues. This study will enhance the public bus services payment method, which will make Johor Bahru public bus more effective and efficient.

1.7 Research Hypothesis

Based on the literature reviews, research hypotheses are developed, tested, and examined. The null hypothesis (H_0) represents that, there is no significant relationship between the bus passengers' intention with e-payment in public bus. Meanwhile, the alternative hypothesis (H_1) refers, there is a significant relationship between bus passengers' intention to use e-payment in public bus. Therefore:

$$H_{0:} \rho = 0$$
$$H_1 : \rho \neq 0$$

Where ρ is the correlation between factors and the intention to use e-payment.

1.8   **Significance of study**

The development of technologies had a significant impact on our public transportation system. The traditional payment method might not be feasible and sustainable for the whole operation of the public transport system. This research will contribute to assisting the public transportation's stakeholders to understand better the factor that influences to the consumers' needs and concerns regarding e-payment in public transport. Moreover, this research can be used for future research as a guideline to study the factors that potentially influence the passenger's intention in a different city in Malaysia's for comparison purposes. E-payment has become a part of our daily life and will become the necessary mode of payment in public transportation in moving towards a sustainable future.

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