



# The Impact of Using Cashless Transactions Among Malaysian Consumers Towards Payment Systems Performance

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**Abstract:** The rapid growth of technology has resulted in the changing of payment system methods. The increase in the use of technology in the payment systems is due to fulfilling the Industry Revolution 4.0's requirement. However, the lack of adoption and security are among several issues in the cashless transaction system. The objective of this research is to answer the research question which is to examine the relationship between the impact of cashless transaction and payment systems performance, to identify which antecedents of adoption are significant in the diffusion of cashless transaction in Malaysia, and to analyze the most impactful antecedent of the cashless transaction towards payment systems performance. This study focuses on the impact of using the cashless transaction on the payment performance system that occurs among Malaysian consumers. This research employed a quantitative research design by using survey questions and respondents were from 231 users of the cashless payment system in Sungai Buloh. Descriptive analysis was used and discussed in the quantitative findings. The findings of this research found that there is a significant relationship between the impact of cashless transactions towards payment systems performance and point out that facilitating condition was the most impactful factor.

**Keywords:** Cashless, Payment systems, Mobile payment, Cashless adoption

## 1. Introduction

Nowadays, the world is facing technological change. Every industry needs to adopt the Industrial Revolution 4.0 to become more competent and capable of sustainability in industries worldwide. According to Baena *et al.* (2017), the Industry 4.0 concept was born from the initiative of academics, industrialists, and the German government, with the goal of improving the country's manufacturing sector's competitiveness through the convergence of industrial production and information and communication technologies (ICT). The components used in Industrial Revolution 4.0 includes technologies such as the Internet of Things (IoT) and Services (IoS), Cyber-Physical Systems (CPS),

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Industrial Automation, Continuous Connectivity and Information, Cyber Security, Intelligent Robotics, PLM, Semantic Technologies, Industrial Big Data and Computer Vision (Baena *et al.*, 2017). In pursuit of the rapid growth of technology growth, the payment system has also been innovated in line with the Internet of Things (IoT) element in Industrial Revolution 4.0 which is a cashless system.

Cashless systems are where every purchase or payment is no longer physically made but uses digital transactions. According to de Almeida *et al.* (2018), since the early 1950s, there is a consensus that is being shaped about the concept of cashless as the future goals in society and this vision has led to a diverse alliance of interest among trade associations, technology suppliers, leading banks, industry commentators and consultants to make this vision a success. The increase in smartphone usage has contributed to the development of this cashless system. This is because most transactions are now carried out using smartphones as they are very easy and efficient. Because of these innovations, retailers, financial institutions, and telecommunications providers took the opportunity to expand the number of internet-enabled services that smartphone users have available (Humbani & Wiese, 2018).

### 1.1 Research Background

The cashless transaction was widely implemented in every country. The top countries implementing cashless transactions are Sweden, China and the United Kingdom (Johnson, 2017). In Sweden, 85% of the country has access to online banking and only 2% of the country's transactions consist of cash. More than half of all branches of the bank no longer handle cash. Seven out of ten customers say they can manage without cash and they predict that by 2025, all the merchants will stop accepting cash (Ingves, 2018). Meanwhile, in China, the cashless transaction is mostly dominated by Tencent's WeChat Pay or Alipay, which is owned by Alibaba and most of their payment method is using QR code (Johnson, 2017). This shows that this cashless method has evolved through various means with the development of technology in many countries around the world.

In Malaysia, a cashless transaction has been introduced and its use has grown rapidly throughout the country. This is closely related to the Industrial Revolution 4.0 development which emphasizes technology advancement in everyday life. Bank Negara Malaysia (BNM) reported that they have encouraged people to use at least the debit card and e-wallet cashless system to accelerate the country's migration to e-payment to save paper costs and improve the nation's payment system's performance (Pikri, 2019). Advancement of the technology greatly improves the performance of the payment system, which contributed to the acceptance of a variety of cashless applications for public convenience. Alipay and WeChat Pay are among the earliest cashless applications which were launched in Malaysia. Alipay has partnered successfully with big local banks such as Public Bank Berhad (PBB), Malayan Banking Berhad (MBB), Commerce International Merchant Bankers (CIMB) and Genting. Alipay is only available to tourists from China, meanwhile, WeChat Pay services were compatible with the WeChat messaging app, which has a strong existing user base of 20 million users in Malaysia in 2018 (Ali *et al.*, 2019). Recently, there are over 42 E-money licenses that have been granted by Bank Negara Malaysia which are consist of banks and non-banks organizations (Milo, 2019).

### 1.2 Problem Statements

The major issue in this research is the adoption of a cashless economy by consumers. According to BNM data and statistics, the implementation of mobile payment by consumers in Malaysia does not achieve the target in 2020 because consumers still prefer to use cash in their daily transactions. However, under BNM's Financial Sector Blueprint 2011-2020, BNM has set some targets for the transfer of cash transactions to electronic payment systems. The goals include increasing the number of e-payment transactions per capita from 44 to 200 transactions, and the checks from 207 million to

100 million per annum by more than half (Fitch Solution, 2019). According to Bank Negara Malaysia, 1.72 billion e-payment transactions worth RM13.9 billion were recorded between January and October 2019 (Baharuddin & Abu, 2020).

Security issues also are the most common issue faced by consumers when using the cashless system. According to Chahar (2013), theft and fraud, unauthorized access, and denial of service are the main security threats faced by the consumers and causing the consumers to avoid using this system. From January to October 2019, 8,313 cybercrime cases were reported to the police, with a loss of about RM300 million in Malaysia. During 2017, 10,203 such cases were reported, involving a loss of approximately RM184.2 million. Most scams are categorized as telecommunications scams, e-financial scams, 419 scams and e-commerce scams (Mallow, 2019).

### 1.3 Research Questions

- (i) What is the relationship between the impact of cashless transaction and payment systems performance?
- (ii) What are the antecedents of adoption that are significant in diffusion of cashless transaction in Malaysia?
- (iii) What are the most impactful antecedents of the cashless transaction towards payment systems performance?

### 1.4 Research Objectives

- (i) To examine the relationship between the impact of cashless transaction and payment systems performance.
- (ii) To identify which antecedents of adoption are significant in diffusion of cashless transaction in Malaysia.
- (iii) To analyse the most impactful antecedents of the cashless transaction towards payment systems performance.

### 1.5 Scope of the Study

This research is limited to the impactful antecedent of adoption that is significant in cashless transactions by analyzing the relationship between the impact of cashless transactions and payment system performance. This research involved 231 respondents that are using cashless transaction in Sungai Buloh. Sungai Buloh was chosen because the Sungai Buloh has emerged as one of Greater KL's fastest-growing areas with a wide choice of housing and amenities. Sungai Buloh also serves the MRT (mass transit) line 1, the Sungai Buloh-Kajang (SBK) line, and the KTM Commuter which connects the area to the KL city center and other parts of the Klang Valley (Khoo & Chan, 2019). The facility's development is also expected to increase the usage of cashless apps in Sungai Buloh residents' daily activities. According to the Department of Statistic Malaysia (2020), the population in Sungai Buloh is about 466,163 people in 2010 and expected to be increased in 2020.

### 1.6 Significance of the Study

This study was conducted because the use of cashless transactions has been widely used especially in developing areas such as Sungai Buloh especially during the Covid-19 crisis where the country needed contactless payments to prevent the spread of outbreaks. This study can benefit consumers and companies that make cashless transactions as their payment medium in their business to improve their service. This would also have affected the government as it would help to reduce the bureaucracy in any government payment transaction.

## 2. Literature Review

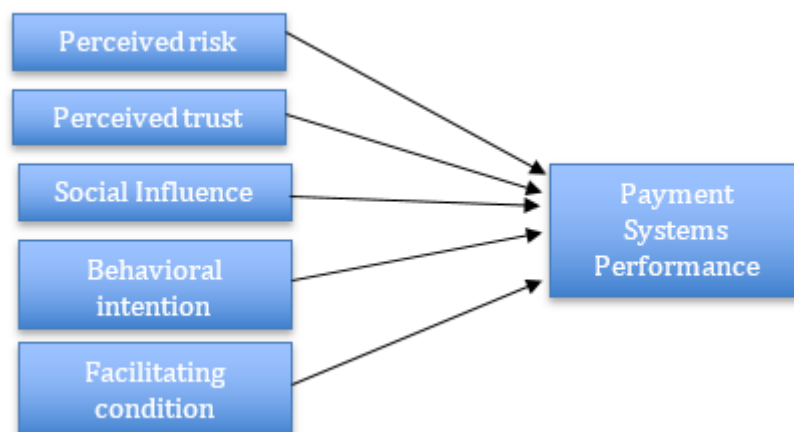
## 2.1 Payment System Performance

Payment systems consisting of instruments, banking procedures and a system of interbank funds transfer facilities to ensure the circulation of money (Bank Negara Malaysia, 2020). According to Badan and Igeria (2018), system payments are an essential component of a country's economy. In the US, about 158 billion purchases were made at about \$ 8.3 trillion in 2011 excluding payments made by businesses or the government. The payment system has also improved dramatically in terms of payment technology, which is the transfer of payments from paper to electronic payments. This payment system has many advantages over users, but adoption rates are very slow and less widely adopted by users around the world. The adoption of the cashless transaction gives an impact on the performance of the payment systems. Performance can be measured by the level of quality of service it delivers to consumers beginning with desirable levels which require improvement until the problem is resolved (Aghajani *et al.*, 2019).

## 2.2 Adoption of Cashless Transaction

In this research, Technology Acceptance Model (TAM) was adopted to identify the antecedent of adoption that are significant in the diffusion of cashless transactions. This model was developed by Davis (1989) and has been widely used to predict the individual user's acceptance of information systems and technology (Alagu *et al.*, 2015). The first model of TAM was introduced only in terms of perceived usefulness and perceived ease of use which is related to the user's attitude toward technology or behavioral intention (Venkatesh *et al.*, 2003). After that, Wu and Wang (2005) suggest additional variable is important to provide a more robust model. Therefore, the proposed model, TAM2 is introduced and takes into account the aspects of perceived risk and perceived trust. TAM2 was created to understand the responsiveness and response of users to new technologies used (Sullivan, 2016).

TAM and TAM2 models assume that consumers use only one type of technology and do not take into account the impact of the technology (Sullivan, 2016). Therefore, researchers have also adopted the UTAUT application to further strengthen the effectiveness of this study. The UTAUT model (Unified Theories of Acceptance and Use of Technology) as in Figure 1, contains four key concepts namely performance expectancy, effort expectancy, social influence and facilitating condition (Venkatesh *et al.*, 2003). This model is able to evaluate the user's ability to handle new technologies (Ahmed, 2014). The model also considers the effects of age, gender, experience and voluntariness of use on the four key concepts of this model. In this study, the variables used were perceived risk, perceived trust, social influence, behavioral intention and facilitating condition as they were associated with the impact of cashless transactions on payment systems performance (Figure 1).



**Figure 1: Variables adapted from TAM and UTAUT Model**

*(a) Perceived Risk*

Perceived risk was described as the ability to which the cashless transaction consumer believe that they are exposed to certain kinds of financial, social, psychological, physical or time risks (Sobti, 2019; Zhang *et al.*, 2012). Previous studies have indicated that perceived risk is an important element in the adoption of technology by consumers. Researchers focused on the impact between perceived risk and behavioral intent to use in a variety of contexts in electronic payment systems (Ozturk, 2016). In a study by Rouibah *et al.* (2016) that takes place in the Arab country, perceived risk will negatively affect consumer's trust in payment system performance. It gives a negative perception that the system will not satisfy the security requirements.

*H1: Perceived risk has significant relationship with payment system performance*

*(b) Perceived Trust*

Trust has been defined as a psychological state composing the intention to accept vulnerability based on expectations of the intentions or behavior of another (Wang *et al.*, 2015). In any transaction, trust plays an important role in exchange relationships containing uncertain threats because there is no assurance that vendors do not behave opportunistically at the expense of customers (Gefen *et al.*, 2003). Recent studies have also found that trust is a catalyst for enhancing the consumer's intention to engage in online transactions. It emphasizes the user's commitment to the use of the payment system (Rouibah *et al.*, 2016; Wang *et al.*, 2015).

*H2: Perceived trust has significant relationship with payment system performance*

*(c) Social Influence*

Social factors are described as the influence of opinion that causing other people to change their decisions (Venkatesh & Morris, 2000). Social influence involves deliberate and accidental attempts to alter the values, perceptions or actions of another person. It affects the thought of a person in using the cashless transaction in payment systems (Gass, 2015). According to Yang *et al.* (2012), social influence is one of the major factors in mobile payment adoption. In the context of this study, the use of cashless transactions is mainly used by smartphones, thus, social influence slightly affects the use of cashless transactions in the payment system. This may affect the payment systems performance.

*H3: Social influence has significant relationship with payment systems performance.*

*(d) Behavioral Intention*

According to Fishbein *et al.* (1977), the intention is how hard a person is willing to try and how much determination they plan to use against certain behavior. The researchers also define behavioral intention as the subjective likelihood of the persons that he or she will perform the behavior. According to Mamman *et al.* (2016), behavioral intentions are the important motivating variables that measure how much effort an individual is capable of making in order to perform the behavior. Based on the study of mobile banking adoption by Yu (2012), the antecedents that are affecting people in using mobile banking are focusing on performance expectancy, perceived financial cost, social influence, and perceived credibility. However, the behavior intention is just a factor that drives users to mobile banking. Hence, behavioral intention is the critical matter in giving impacts to payment systems performance (Mamman *et al.*, 2016).

*H4: Behavioural Intention has significant relationship with payment systems performance.*

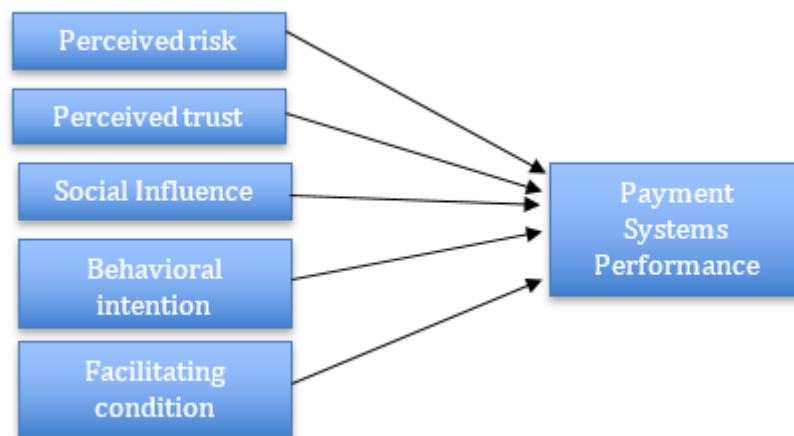
*(e) Facilitating Condition*

Facilitating condition is the extent to which consumers believe that there is the support of the use of the system by both the organizational and technical in their infrastructure (Venkatesh & Morris,

2000). Facilitating conditions are factors for the consumer in using the cashless transaction. According to the study by Badan and Igeria (2018), the effective use of smartphones as a facility in mobile learning by postgraduate students depends on how the facility can provide students with educational resources and technical infrastructure of the facilities for their optimal use. The result of the study shows that the improvement in the facilitating condition will lead to increased use of smartphones for mobile learning by postgraduate students. In the context of this research, facilitating conditions are very necessary for consumers to ensure that their cashless transactions are well managed and do not trigger problems such as security issues.

*H5: Facilitating condition has significant relationship with payment systems performance.*

### 2.3 Conceptual Framework



**Figure 2: Conceptual Framework**

### 2.4 Hypotheses Development

This research focused on the analysis of antecedent in the established TAM model. TAM model is a tool for measuring the adoption of technology information systems among consumers. For this research, variables from the TAM model have been adapted to identify the relationship between cashless transactions and payment systems performance. These are the hypotheses of this study:

*H1: Perceived risk has significant relationship with payment system performance*

*H2: Perceived trust has significant relationship with payment system performance*

*H3: Social influence has significant relationship with payment systems performance.*

*H4: Behavioral Intention has significant relationship with payment systems performance.*

*H5: Facilitating condition has significant relationship with payment systems performance.*

## 3. Research Methodology

### 3.1 Research Design

Research design is a method of research and is an instrument that builds a research study that combines all the essential components together (Berkhout *et al.*, 2015). In conducting this study, quantitative methods were used and used survey questions as instruments to collect information. Quantitative methods are more reliable and objective.

### 3.2 Research Process

This study begins with researchers identifying problems and issues related to the use of cashless transactions to consumers. The researcher then identified the key information and components associated with this study using search engine tools. The researcher also identifies the study area and the respondents that will be selected to conduct this study. Subsequently, the researcher selected the appropriate method for this study. Then, the method will be used to collect the data and run the analysis. Finally, the researcher will compile the results to be reported and draw conclusions from this study.

### 3.3 Data Collection Method

The research data will be collected using primary data. The data will be collected using survey questions. A set of standardized questions and answers will be given to the respondent regarding the usage of cashless transactions. The questions will be distributed using an online survey platform which is Google Form. The use of this platform will enhance and facilitate the process of acquiring data due to the ongoing issue of COVID-19 limiting the movement of researchers to physically distribute questionnaires. An online survey is advantageous to researchers because it is inexpensive compared to a paper-based survey. The response rate of online surveys is also higher because most of the respondents nowadays spend a lot of time using smartphones (Selm & Jankowski, 2006).

### 3.4 Population and Sampling Technique

The target population of this research is the resident of Sungai Buloh. The reason Sungai Buloh was chosen in this research because Sungai Buloh is one of the emerging and fastest-growing areas around Greater KL which has many choices of housing and amenities. According Department of Statistic Malaysia (2020), the population of residents in Sungai Buloh is about 446,163 people and expected to increase in 2020. Due to the Sungai Buloh growing rapidly in terms of facilities, the use of cashless transactions is expected to increase, especially at this point, pandemic crisis COVID-19 which is still ongoing and the need for this payment system to prevent the disease to spread.

The sample of this study is from the population of Sungai Buloh's residents. The main target respondents are the user of cashless payment system which consist of different age brackets, races, background etcetera. According to Krejcie and Morgan (1970), the suitable number of respondents is 382 respondents which are in line with the total population of Sungai Buloh town over 75000 people. However, only 231 respondents answer the survey question and collected in this research. The sampling technique used in this research is non-random sampling. Non-random sampling is a sampling technique that does not provide a basis for any opinion of probability and all the elements will have a chance to be included in the research sample. There are four types of non-random sampling which is convenience sampling, quota sampling, snowball sampling and judgmental sampling (Etikan, 2017). In this research, convenience sampling would be the best sampling technique use to distribute the questionnaire. This method was chosen because it is more suitable as the time to collect the data is limited as well as the big amount of sample size (Yong *et al.*, 2018).

### 3.5 Construct Measurement

For this research, the questionnaire will be divided into two sections is section A and B. Section A consists of the respondent's demographic information containing seven items in it. These items are gender, age, race, level of education, occupation, income per month and frequency using a cashless transaction system. While section B consists of questions related to the study of the impact of cashless payment transaction systems on performance. The items in section B were further divided into five dimensions namely perceived risk, perceived trust, social influence, behavioral intention and facilitating condition. The data will be analyzed by using SPSS software. The level of measurement

used for section A is nominal while for section B the level of measurement used is scale. For section B, 5-point Likert Scale is being used to measure the impact of the cashless transaction.

**Table 1: Construct measurement**

	Variables	Measurement	Scale
Demographic	Gender	Nominal	-
	Age	Nominal	-
	Races	Nominal	-
	Level of education	Nominal	-
	Occupation	Nominal	-
	Income per month	Nominal	-
	Frequency of using cashless transaction system	Nominal	-
Independent Variable	Perceived risk	Scale	5-point Likert Scale
	Perceived trust	Scale	5-point Likert Scale
	Social influence	Scale	5-point Likert Scale
	Behavioural intention	Scale	5-point Likert Scale
	Facilitating condition	Scale	5-point Likert Scale
Dependent Variable	Payment systems performance	Scale	5-point Likert Scale

### 3.6 Data Analysis

SPSS software is applied in this research to run and analyzed the data collected. SPSS (Statistical Package for the Social Science) is software that contains several programs that combine in a single package aimed at helping researchers to analyze data (Thomes, 2018). Descriptive analysis which consists of mean, percentage and the standard deviation is used to tabulate the data. Cronbach alpha was used to test the reliability, while Spearman's Correlation analysis and Regression analysis were used to test the hypotheses.

## 4. Results and Discussion

### 4.1 Results

There are 231 respondents involved in this research. These questionnaires were distributed by using Google Form and have been completed and collected for this research. The response rate of this questionnaire is 60.47 percent. SPSS was used in this research to determine the impact of cashless transactions among Malaysians on payment systems performance.

#### (a) Demographic

As much as 87 respondents in this research were male and the other 144 respondents were female. The percentage of respondents below 20 years old is 11.3%. The percentage of respondents 21 to 25 years old is 55.8%. The percentage of respondents 26 to 30 years old is 5.2%. The percentage of respondents from age 31 to 35 years old is 3.5%. The percentage of respondents age from 36 to 40 is 4.8%. The percentage of respondents age from 41 to 45 years old is 2.2%. The percentage of respondents 40 years old and above is 17.3%. The percentage of Malay respondents is 91.8%. Chinese percentage is 2.6%. Indian percentage is 2.6% and the others are 4.3%. The percentage of bachelor's degree is 57.6%. The percentage of a master's degree is 3.9%. The lower secondary level is 6.5%.



Higher secondary level and diploma both 9.5% respectively. The percentage of income per month below RM1000 is 51.1%. For the income of RM1001 to RM1999 the percentage is 16.5%. As much as 10.4% have an income of RM2000 to RM2999 per month. For the income of RM3000 to RM3999, the percentage is 5.6% and 16.5% have the income of RM4000 and above. The percentage of respondent used cashless transaction once a week is 45%. 20.3% used cashless transactions twice a week and another 20.3% also used cashless transactions three times a week. There are 3.9% used cashless transactions five times a week. The other 10.4% used cashless transactions every day. The result of this study is listed in Table 2.

**Table 2: Summary of respondent demographic**

	Frequency	Percent %
Gender		
Male	87	37.7
Female	144	62.3
Age		
Below 20 years old	26	11.3
21 to 25 years old	129	55.8
26 to 30 years old	12	5.2
31 to 35 years old	8	3.5
36 to 40 years old	11	4.8
41 to 45 years old	5	2.2
46 years old and above	40	17.3
Races		
Malay	212	91.8
Chinese	6	2.6
Indian	3	1.3
Other	10	4.3
Level of education		
Lower secondary	15	6.5
Higher secondary	22	9.5
Diploma	52	22.5
Bachelor's Degree	133	57.6
Master's Degree	9	3.9
Income per month		
Below RM1000	118	51.1
RM1001 to RM1999	38	16.5
RM2000 to RM2999	24	10.4
RM3000 to RM3999	13	5.6
RM4000 and above	38	16.5
Frequencies of using e-hailing service		
Once a week	104	45.0
Twice a week	47	20.3
Three times a week	47	20.3
Five times a week	9	3.9
Everyday	24	10.4

*(b) Central Tendencies and Standard Deviation*

Appendix A shows the central tendencies measurement of each of the constructs. The mean value of Perceived Risk is the range between 3.048 to 3.775, Perceived Trust range between 3.433 to 3.714, Social Influence range between 2.788 to 4.372, Behavioral Intention range between 3.641 to 3.844 and Facilitating Condition range between 3.169 to 4.117. From the result, it indicates that most of the respondents choose to disagree, neutral and agree. PR5 scores the highest standard deviation of 1.126

and PT2 scores the lowest standard deviation of 0.572. Appendix B shows the central tendencies of the dependent variable which is Payment Systems Performance. The mean values of this variable are 3.017. From this result, it indicates that most of the respondent choose neutral and agree. The highest standard deviation score is PSP5 of 1.042 and the lowest score is PSP4 of 0.669. Based on the result, it shows that the score of standard deviation for all variables is above 0.572 but below 1.126.

(c) *Normality Test*

Normality tests compared the scores of the sample to a normally distributed set of scores with the same distribution and standard deviation (Ghasemi & Zahediasl, 2012). Kolmogorov-Smirnov was used to test the normality of the data because the number of respondents is more than 50. Based on Table 3, all the variable shows not normal distribution because the critical value is less than 0.05. To get the normal data, the critical values must be more than 0.05 (Ghasemi & Zahediasl, 2012).

**Table 3: Result of normality test for all variable**

	Kolmogorov-Smirnov <sup>a</sup>		
	Statistic	df	Sig.
Perceived Risk	0.079	231	0.001
Perceived Trust	0.155	231	0.000
Social Influence	0.157	231	0.000
Behavioural Intention	0.169	231	0.000
Facilitating Condition	0.133	231	0.000
Payment Systems Performance	0.198	231	0.000

(d) *Reliability Test*

Reliability is the degree to which the instrument can yield reliable findings on similar subjects under similar conditions and can be assimilated with the accuracy of certain measurements (Ursachi *et al.*, 2015). Table 4 shows the Cronbach's alpha of the independent variables in this research. The total of measured items is 26 items for UTAUT dimensions. According to Hulin *et al.* (2001), the acceptable level of reliability is the alpha of 0.6 to 0.7 and if more than 0.8, it is a very good level. But, if it is more than 0.95, it does not necessarily mean good, but it might be redundant in the variable. Based on the table, there are five variables of UTAUT to identifying the impact of cashless transactions on payment systems performance. The Cronbach's Alpha for perceived risk is 0.671, perceived trust is 0.777, social influence is 0.703, behavioral intention is 0.838, facilitating condition is 0.725 and payment systems performance is 0.849. All the items adopted in the questionnaires for this research are reliable as all the Cronbach's Alpha have at least the minimum value of 0.6. The highest Cronbach's Alpha value is payment systems performance with the value of 0.849, whereas the lowest value is perceived risk with the value of 0.671.

**Table 4: Result of reliability test for variables of UTAUT**

Variables	Cronbach's Alpha	No. of item
Perceive risk	0.671	5
Perceived trust	0.777	5
Social Influence	0.703	3
Behavioural Intention	0.838	5
Facilitating condition	0.725	4
Payment systems performance	0.849	4

(e) *Hypotheses Testing*

Hypothesis testing is to determine the relationship between the independent variables and dependent variables in this research. Spearman's correlation analysis was used because the data distribution is not normal. Table 5 shows the result of Spearman's correlation analysis. Also, the impacts of cashless transactions correlated with the payment systems performance. The coefficient value of the result is between 0.238 to 0.683 where the perceived risk has a value of 0.238; perceived trust has a value of 0.513; social influence has a value of 0.477; behavioral intention has a value of 0.601 and facilitating condition has a value of 0.683. Based on this result, there is a strong positive relationship between the impact of cashless transactions and payment systems performance because the p-value is more than 0.05.

**Table 5: Spearman's analysis correlation**

Variables	Perceived Risk	Perceived Trust	Social Influence	Behavioural Intention	Facilitating Condition	Payment Systems Performance
Perceived Risk	1.000					
Perceived Trust	0.571	1.000				
Social Influence	0.115	0.404	1.000			
Behavioural Intention	0.298	0.425	0.446	1.000		
Facilitating Condition	0.243	0.397	0.381	0.553	1.000	
Payment Systems Performance	<b>0.238**</b>	<b>0.513**</b>	<b>0.477**</b>	<b>0.601**</b>	<b>0.683**</b>	1.000

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

## 4.2 Major Finding

### (a) Perceived Risk

The result shows the p-value is less than 0.05. therefore, the study rejects the null hypothesis and accepted the H1 hypothesis. This finding indicates that perceived risk has a significant relationship to payment systems performance.

*H1: Perceived risk has significant relationship with payment systems performance.*

*H0: Perceived risk has insignificant relationship with payment systems performance.*

### (b) Perceived Trust

The result shows the p-value is less than 0.05. therefore, the study rejects the null hypothesis and accepted the H1 hypothesis. This finding indicates that perceived trust has a significant relationship to payment systems performance.

*H1: Perceived trust has significant relationship with payment systems performance.*

*H0: Perceived trust has insignificant relationship with payment systems performance.*

### (c) Social Influence

The result shows the p-value is less than 0.05. therefore, the study rejects the null hypothesis and accepted the H1 hypothesis. This finding indicates that social influence has a significant relationship to payment systems performance.

*H1: Social influence has significant relationship with payment systems performance.*

*H0: Social influence has insignificant relationship with payment systems performance.*

*(d) Behavioral Intention*

The result shows the p-value is less than 0.05. therefore, the study rejects the null hypothesis and accepted the H1 hypothesis. This finding indicates that behavioral intention has a significant relationship to payment systems performance.

*H1: Behavioral Intention has significant relationship with payment systems performance.*

*H0: Behavioral Intention has insignificant relationship with payment systems performance.*

*(e) Facilitating Condition*

The result shows the p-value is less than 0.05. therefore, the study rejects the null hypothesis and accepted the H1 hypothesis. This finding indicates that facilitating condition has a significant relationship to payment systems performance. The summary of hypothesis testing is shown in Table 6.

*H1: Facilitating condition has significant relationship with payment systems performance.*

*H0: Facilitating condition has insignificant relationship with payment systems performance.*

**Table 6: Summary of hypothesis testing**

Hypothesis	P value (sig.)	Hypothesis
Perceived risk has significant relationship with payment systems performance	0.018	Accepted
Perceived trust has significant relationship with payment systems performance	0.000	Accepted
Social influence has significant relationship with payment systems performance	0.007	Accepted
Behavioural intention has significant relationship with payment systems performance	0.000	Accepted
Facilitating condition has significant relationship with payment systems performance	0.000	Accepted

#### 4.3 Discussion

*(a) Objective 1*

Based on Table 5, Spearman's correlation analysis was used to examine the relationship between the impact of cashless transactions and payment systems performance. The result shows that all the impacts of cashless transactions have a strong positive relationship towards payment systems performance. This is because the correlation of all p-value of the variables is ranges between 0.473 to 0.695, which is more than 0.05.

*(b) Objective 2*

The theory UTAUT model was used in this study to explain the research framework on the antecedent of the impact of cashless transactions. Based on Table 5, all five antecedents (perceived

risk, perceived trust, social influence, behavioral intention, facilitating condition) are significant in the diffusion of cashless transactions in Malaysia. Researchers can conclude that facilitating condition is the most significant in the diffusion of cashless transactions in Malaysia.

*(c) Objective 3*

Based on Table 5, Spearman's correlation analysis has been used to analyze the most impactful antecedent of the cashless transaction toward payment systems performance. The most impactful antecedent is facilitating condition because the correlation of this antecedent is the highest (0.683) among five other antecedents in this research. The researcher also found out that perceived risk has the lowest correlation (0.238) and needs to be improved.

#### 4.4 Implication of the Study

*(a) Theory Implication*

In this study, UTAUT has been used to explain the overall research framework on the impact of cashless transactions on payment systems performance. This can give new insight to future research to conduct similar topics as this study can be a reference for them. This study also can be a guideline to any related research purpose, especially for the cashless transaction as it is the rapid technology that has widely developed in Industrial 4.0 era.

*(b) Managerial Implication*

Based on the result, this study may be able to give benefit to the cashless service providers and also entrepreneurs that are interested to develop cashless application services in Malaysia. The variables in this study can be guidelines to the cashless service provider to improve their current services. This can enhance the digital payment rate and increase the economic growth in our country.

## 5. Conclusion

In conclusion, the purpose of this research is to identify the impact of cashless transactions on payment systems performance. The variable used in this research is perceived risk, perceived trust, social influence, behavioral intention and facilitating condition. A total of 231 questionnaires has been collected and it was conducted in Sungai Buloh, Selangor. The analysis used in this research is descriptive analysis, reliability, correlation analysis and regression analysis.

From the result, the researcher found out that the variables (perceived risk, perceived trust, social influence, behavioral intention, facilitating condition) has a significant relationship with payment systems performance because the p-value of all the variables in Spearman's correlation analysis is more than 0.05. Researchers can determine that facilitating condition is the most impactful antecedent of cashless transaction towards payment systems performance.

This study can give insight to cashless service providers to improve their services. Besides that, it can be a guideline for an entrepreneur that is interested in developing cashless application.

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**Appendix A: Mean and standard deviation of independent**

<b>Perceived Risk</b>				
		Mean	Std. Deviation	N
PR1	I fear sending my confidential info via the cashless payment system	3.182	1.031	231
PR2	The likelihood of frauds in using cashless transaction is low	3.048	1.120	231
PR3	I believe that the providers will protect my transactions and privacy information	3.775	0.758	231
PR4	I believe that using cashless payment transaction is not riskier than traditional payment method	3.195	0.992	231
PR5	I hesitate to use cashless payment transaction modes for fear of making mistakes I cannot correct.	3.165	1.126	231
<b>Perceived Trust</b>				
		Mean	Std. Deviation	N
PT1	I believe the cashless payment system is trustworthy	3.714	0.778	231
PT2	I believe the cashless payment system provides good experience	4.052	0.572	231
PT3	I believe the cashless payment system is not opportunistic	3.433	0.925	231
PT4	I believe the cashless payment system keeps its promise and commitments	3.727	0.722	231
PT5	I believe the cashless payment system vendors consider customer profit as top priority	3.533	0.779	231
<b>Social Influence</b>				
		Mean	Std. Deviation	N
SI1	People on my workplace/college think I should use cashless payment system	3.628	0.875	231
SI2	It is current trend to use cashless payment system modes	4.372	0.666	231
SI3	It is current trend to use cashless payment system modes hence I would use it	3.675	1.010	231
SI4	Mass media and social media have influence on my decision to use cashless payment	3.675	0.975	231



	system			
SI5	People who use cashless payment system have a high profile	2.788	1.040	231
<b>Behavioural Intention</b>				
		Mean	Std. Deviation	N
BI1	I will use cashless payment system frequently in the next 12 months	3.641	0.976	231
BI2	I plan to use cashless payment system more frequently for paying bills in the next 12 months	3.827	0.911	231
BI3	I predict I would use cashless payment system more frequently for my day-to-day purchases in next 12 months	3.706	0.942	231
BI4	I intend to use mobile payment modes more frequently for sending and receiving money in the next 12 months	3.844	0.856	231
<b>Facilitating Condition</b>				
		Mean	Std. Deviation	N
FI1	My living and working environment support me to use cashless payment system	3.762	0.844	231
FI2	I have internet at all times to use cashless payment system	4.013	0.892	231
FI3	Most of the merchants from whom I buy goods/services do not accept cashless payment system	3.169	1.027	231
FI4	Cashless payment system modes are not compatible with my existing mobile phone	3.952	0.861	231
FI5	I have knowledge necessary to use cashless payment system	4.117	0.722	231

### Appendix B: Mean and standard deviation of dependent variables

<b>Payment Systems Performance</b>				
	Variables	Mean	Std. Deviation	N
PSP1	The cashless payment system enhances the method of payment in my daily transaction	4.013	0.682	231
PSP2	The cashless payment system will directly increase productivity	4.017	0.704	231
PSP3	The cashless payment system enables me to accomplish task more quickly	4.229	0.700	231
PSP4	The cashless payment system will bring greater convenience	4.247	0.669	231
PSP5	The cashless payment system will reduce my effectiveness in managing my payment transaction	3.017	1.042	231

