Article

Unlocking Rural Economy Growth through Digital Economy: Study of Online Payment Acceptance among Rural Retailers in Kelantan.

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Abstract – Digital economy has become an essential key to unlocking rural economic growth in Malaysia with the launch of the Malaysia Digital Economic Blueprint (MyDIGITAL) by the government in February 2021. Online payment is a vital component of the digital economy and should be feasible even in rural areas since more than 80% of rural households had access to mobile broadband in 2019. Nevertheless, many are still using cash-based payments to make purchases. Thus, this study aims to observe online payment acceptance, particularly in Kelantan, from the rural retailers' perspective. The Unified Theory of Acceptance and User of Technology (UTAUT) was applied by observing three determinants of behavioural intention to adopt online payment and a quantitative research method, i.e. questionnaire distribution via social media (Facebook) to 384 respondents, was used. The results were analysed using descriptive analysis, reliability test, and Pearson's correlation analysis. Among the three variables examined, only two significantly affected rural retailers' behavioural intention to adopt online payment, namely security and performance expectancy. With this information, the government could prepare more targeted, proactive design interventions (e.g., training, marketing, etc.) for rural retailers who are reluctant to use online payment. Hopefully, this research can help online payment services offered in rural areas and the implementation of MyDIGITAL to unlock rural economic growth. Besides, the aim is to inspire future researchers to continue this study with more extensive and complex research.
Keywords: Digital Economy, Online Payment, UTAUT, Rural economy.

1. Introduction

The Malaysian government has foreseen the digital economy to become an essential key to unlocking rural economy growth with the formation of MyDIGITAL i.e. Malaysia Digital Economic Blueprint in 2021 (Economic Planning Unit, Prime Minister's Department, 2021). Even though only 11.7% of Malaysian rural households have access to fixed broadband, another 80.4% have access to mobile broadband (DOSM, 2019). In 2018, Malaysia's digital economy was valued at RM 267.7 billion, contributing around

18.5% to the national economy. The e-commerce sector contributed 43% to the digital economy, valued at RM 115.5 billion (MDEC, 2019). This value has become even higher post-COVID-19. According to JP Morgan, business-to-consumer e-commerce has strong growth with a compound annual growth rate (CAGR) of 17% to 2023 (J.P. Morgan, 2020).

Online payment is a type of electronic payment for the real-time payment offered by a third-party payment interface between banks (Yang, 2017). The online payment system is an integrated term that describes the unique characteristics of delivery via a digital multi-channel. Online payment could be mobile payment, electronic cash, electronic finance, online banking, etc. The electronic payment system has evolved over the past few decades due to the increasing spread of online banking and e-commerce. As technology develops further globally, electronic payment systems and merchant services devices will grow. According to Bank Negara Malaysia statistics, online payment transactions had increased from RM 668,785.3 per capita in 2018 to RM 669,414.0 per capita in 2019. Online payment increases, strengthens, and ensures increasingly safe online transactions, while the use of cheques and cash transactions will decrease.

Behavioural intention refers to the motivating factors that influence action. The greater the desire to conduct the action, the more probable the behaviour is to be committed. Behavioural intention also denotes how a person has formulated deliberate choices to practise or not such behaviour in the future (Warshaw & Davis, 1985). Thus, there is a relationship between the impact of online payment and the behavioural intention of rural retailers. Nonetheless, no study has examined how online payment affects the behavioural intention of rural retailers in Kelantan. Therefore, this study aims to observe online payment acceptance in Kelantan, from the rural retailers' perspective.

The online payment system enables the adoption of payments for internet transactions. Over the last few decades, the online payment system has gradually developed due to the rapid spread of internet-based banking and shopping. The rise of online payment systems and payment processing devices will occur as technology evolves further globally. According to a Rakuten Insight survey on online payment usage, approximately 91% of Malaysian respondents indicated that they performed a transaction using online payment methods. Only 6% of the respondents have not used it. Online payment services are usually operated by third-party firms, such as PayPal, DuitNow, and Maybank2upay. By getting a small percentage of any transaction or by making deals with organisations that need to make a large volume of transactions, these businesses earn a profit.

The present study emphasises the impact of online payment on rural retailers in Kelantan. Online payment might not only help rural retailers, but it could also affect them. This study aims to define the variables behind online payment and the retailers' behavioural intention. The research examines three independent variables' (security, performance expectancy, and transaction fraud) association with retailers' behavioural intention towards online payment in Kelantan.

1.1. Significance of the Study

Currently, numerous rural merchants still use cash-based payments to make purchases. Furthermore, there is a lack of studies on online payment from the rural retailers' perspective. Examining these variables can indicate how they impact behavioural intention, which could then facilitate the adoption of online payment among rural retailers in Kelantan. Consequently, this might contribute to the implementation of MyDIGITAL to unlock rural economic growth via digital economy.

Furthermore, this research will support financial institutions in developing and offering online payment services, which rural retailers will easily accept. Lastly, future researchers can be inspired to continue this study with a more extensive and complex investigation. The Unified Theory of Acceptance and Use of Technology (UTAUT) is adopted as the existing conceptual paradigm and applied to this study. This research continues from a previous study but has narrowed the focus to the rural retailers' perspective. Three independent variables' (security, performance expectancy, and transaction fraud) relationship with behavioural intention towards online payment will be examined.

2. Literature Review

2.1. Rural Area

Rural areas are in the countryside with low population density (Chormy, 2011) and usually receive limited government development support. Besides, rural areas are known to lack infrastructure with low population income (Cook, 2011). Although the definitions of urban and rural have been used for over a century, defining a clear line between urban and rural is very complex. According to the United States Census Bureau (2016), the definition of rural is all areas and population that are not categorised as urban since it is easier to define urban, which is usually based on population density and other measures of dense development.

2.2. The Unified Theory of Acceptance and Use of Technology (UTAUT)

UTAUT is a popular concept that predicts technology acceptance and use by integrating eight previous famous theoretical models. The models are the theory of reasoned action (TRA), the technology acceptance model (TAM), the motivational model (MM), the theory of planned behaviour (TPB), a model combining TAM and TPB (C-TAM-TPB), the model of PC utilisation (MPCU), the innovation diffusion theory (IDT), and the social cognitive theory (SCT) (Venkatesh et al., 2003). The UTAUT model assesses the probability of success of the technology by understanding the drivers of use; therefore, proactive steps can be taken for users who are reluctant to use the technology (Venkatesh et al., 2003). In this study, the UTAUT model was adopted and applied using three independent variables and one dependent variable.

2.3 *Security*

Security can be defined as protecting transaction and customer data from internal and external fraud. Rural retailers worry about making transactions and paying electronically as well as the possibility that their data will be stolen. Safety remains one of the most significant and well-researched fields within the payment system literature (Abrazhevich, 2004). Additional online payment protocols might be added or improved to increase the confidence in online payment.

H^1: Security has a positive relationship with rural retailers' behavioural intention towards online payment.

2.4 Performance Expectancy

Venkatesh, Thong and Xu (2016) have described the variable expected performance as the degree to which employee performance will improve through technological innovations. Another study has defined performance expectancy as when an individual believes that using technological innovations would enhance his or her performance (Jambulingam, 2013). Venkatesh et al. (2016) incorporated five principles from different models into constructing performance expectations i.e. perceived usefulness, extrinsic motivation, work fitness, perceived benefits, and outcome expectations.

H_2: Performance expectancy has a positive relationship with rural retailers' behavioural intention towards online payment.

2.5 Transaction Fraud

In the payment sector, fraud is the fraudulent use of personal data for a transaction without the consent of the actual issuer. Transaction fraud occurs when fraudulent cards or data have been used to perform unauthorised payments. Moving to real-time transactions presents major security problems for banks, traders, and account holders alike. Moreover, a faster transaction speed increases the probability of non-detected fraudulent activity. E-payment transaction fraud is a global problem in every nation and market (Fernandes, 2013).

H_3: Transaction fraud has a positive relationship with rural retailers' behavioural intention towards online payment.

2.6 Behavioural Intention

Behavioural intention is defined as the intention of a person to act. It is the direct component of an individual's actual behaviour since the relationship between intention and behaviour depends on the premise that human beings make decisions based on their knowledge (Wahyuningsih, 2013). Adapa and Valenzuela (2014) mentioned that consumers perceived the technological capabilities based on their understanding of the online transaction management process. For example, a retailer feels that a bank service has the capacity, skills, and expertise to provide an effective transaction service. As such, it is more likely that retailers will follow the recommended guideline and have increased trust in online transactions, which will positively affect online transaction payments.

Online payment has always been compared with traditional cash payment. This consumer behaviour of comparing various payment systems has also been suggested by research focused on the natural environment. Therefore, differentiating online payment from cash payment is crucial. It must be established if the physical representation of cash itself will influence the spending behaviour of a person. The experimental design controls are the order effects, usage pattern, and price familiarity of the commodity to minimise the influence of payment forms.

2.7 Theoretical Framework
Figure 1 illustrates the theoretical framework of this study, showing the impacts of online payment on rural retailers in Kelantan. There are two types of variables, i.e. independent (security, performance expectancy, and transaction fraud) and dependent (behavioural intention).

Figure 1: The Theoretical Framework of the Study.
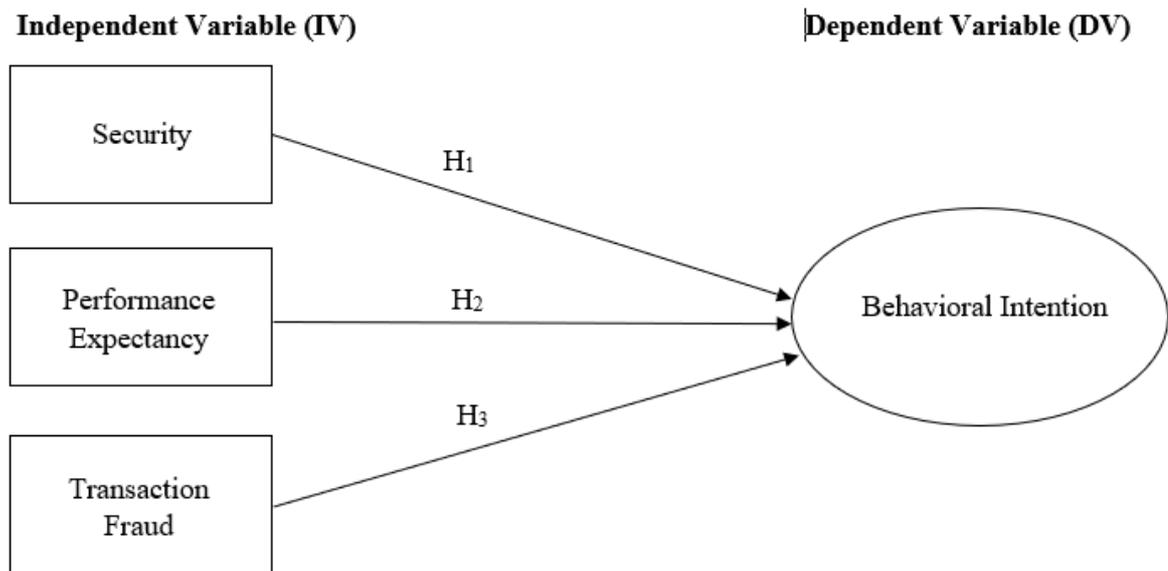
3   Methodology of the Study

3.1 Research Design
In this study, the quantitative research method was employed to collect the primary data. Then, further analysis was performed to ensure that the data were reliable and accurate for the study. This research was designed to collect information about the variables affecting the behavioural intention towards online payment among rural retailers in Kelantan.

3.2 Population
Study populations can be defined based on geographical area, age, sex, and additional attributes and variables such as occupation, religion, and ethnic group (Banerjee et al., 2007). In this research, the target population was rural retailers in Kelantan.

3.3 Sample Size
In general, the sample size represents the number of units selected from which data will be collected. In this research, the sample size was 384. Large sample size can yield study results that are better and more precise (Israel, 1992).

3.4 Data Collection
Primary data are data collected from first-hand experiences, such as through a questionnaire. Meanwhile, secondary data are data collected from published sources in any media, such as the internet. The questionnaire used in this research was distributed through a social media site (Facebook) to obtain the primary data. This questionnaire was not distributed to the public but only sent to chosen eligible respondents, i.e. rural retailers in Kelantan.

3.5 Sampling
Probability sampling can produce results that are more accurate and credible than non-probability sampling as it reflects the characteristics of the entire population. Nevertheless, large sample size is required, and it is hard to identify each qualified respondent. Therefore, a simple random sampling technique was used in this research, where each person was randomly selected as the respondent (Jha, 2015).

3.6 Research Instrument
This study's questionnaire was bilingual, i.e. prepared in English and the Malay language. English was chosen because it is an international language. Meanwhile, the Malay language was selected because the target respondents lived in the rural area in Kelantan. The questions in this questionnaire were adopted and adapted from several sources, as listed in Table 1.

Table 1: Source of the questionnaire

Section	Description	Source	No. of Items
A	Demographic Profile of the Respondent	–	–
B	Security	Qinghe, Wenyuan and Kaiming (2014)	5
	Performance Expectancy	Junadi[a] (2015)	5
	Transaction Fraud	Teoh, Chong, Lin and Chua (2013)	5
C	Behavioural Intention	Junadi[a] (2015)	5
		Total	20

3.7 Data Analysis Technique
After collecting the 384 sets of questionnaires, the qualified data were analysed using the Statistical Product and Service Solutions (SPSS) software. The statistical analysis for the study included descriptive analysis, validity and reliability analysis, and Pearson's correlation analysis.

4   Findings and Discussion

4.1 Demographic Profile of the Respondents
The respondents' demographic profile included gender, age, race, highest education level, average income, online payment usage, online payment platform recognition, and sector involvement. Most of the respondents were males, which constituted 62% (n=238) of the total respondents. The rest were female respondents (38%, n=146). In terms of the respondents' age, most of them were aged between 41 and 50 years old (41.7%, n=160). This was followed by 31–40 years old respondents (23.4%, n=90), 51–60 years old respondents (17.7%, n=68), and 21–30 years old respondents (14.8%, n=57). The lowest percentage of respondents were aged 61 years old and above (2.3%, n=9). Next, the majority of the respondents who answered the questionnaire were Malays at 59.4% (n= 228), followed by the Chinese at 31% (n= 119), and lastly, the Indians at 9.6% (n= 37). For education level, most respondents possessed a diploma (52.1%, n=200). Meanwhile, 22.1% (n=85) had the Malaysian Higher School Certificate (*Sijil Tertinggi Persekolahan Malaysia, STPM*), 15.4% (n=59) had the Malaysian Certificate of Education (*Sijil Persekolahan Malaysia, SPM*), and 10.4% (n=40) possessed a bachelor's degree. The majority of the respondents earned an average income of RM 3,001 – RM 4,000 (51.6%, n=198). Next were respondents with an average income level of RM 4,001 and above (24.2%, n=93), RM 2,001 – RM 3,000 (20.3%, n=78), RM 1,001 – RM 2,000 (2.3%, n=9), and RM 0 – RM 1,000 (1.6%, n=6).

Furthermore, all the respondents (n=384) used online payment platforms to receive payment. Several online payment platforms were recognised by the respondents. Most of them recognised the online payment platform Paypal (44.3%, n=170). This was followed by the Financial Process Exchange (FPX) payment platform (38.5%, n=148), Razerpay online payment platform (7.8%, n=30), iPay88 online payment platform (3.9%, n=15), senangPay online payment platform (2.3%, n=9), eGHL online payment platform (2.1%, n=8), and lastly, Stripe online payment platform (1.0%, n=4). Among the 384 respondents, 44.8% (n=172) were in the food and beverage sector, followed by retail and lodging. The percentage of respondents in both sectors was 18.8% (n=72) and 14.6% (n=56), respectively. For the travel and tourism sector, it was 9.6% (n=37), while 8.3% (n=32) of respondents were in the health sector and 3.9% (n=15) were in the education sector.

4.2 Descriptive Analysis
The descriptive analysis tested 20 items according to their variable. The computed mean and standard deviation of the variables are tabulated in Table 2.

Table 2: Summary of Central Tendency for all the Variables

Variable	Mean	Std. Deviation
Security	3.9682	.72676
Performance Expectancy	3.9995	.74195
Transaction Fraud	3.6484	.61065
Behavioural Intention	4.0005	.67580

Table 2 presents a summary of the central tendency results for all the variables. Behavioural intention obtained the highest mean, whereas transaction fraud had the lowest mean. These variables were the rural retailers' focus on adopting online payment in their business.

4.3 Validity and Reliability Test

The reliability analysis includes the fact that the framework of its assessment must accurately reflect the scale. The feature of the reliability analysis that researchers can use is that similar results can be obtained when two calculated results are equivalent to each other in the system which is being evaluated. According to Kline (1999), the acceptable value of alpha for reliability analysis is 0.8 in intelligence tests and 0.7 in the case of power tests.

Table 3: Reliability Test of the Independent and Dependent Variables

	No. of Items	Cronbach's Alpha	Result
Security	5	0.867	Excellent
Performance Expectancy	5	0.824	Excellent
Transaction Fraud	5	0.676	Good
Behavioural Intention	5	0.872	Excellent

Table 3 shows that Cronbach's alpha values for variables security, performance expectation, transaction fraud, and behavioural intention are above 6.0. Hence, it can be concluded that all the study items were consistent and reliable. The table also provides the results of the reliability test. The value range for the questionnaire was above the acceptance level, i.e. between 0.676 and 0.872. The first independent variable, security, was excellent in terms of reliability (5 items; $\propto= 0.867$). Next, for performance expectancy, Cronbach's alpha was 0.824 with five items, which was also excellent. The third variable, transaction fraud, was acceptable in terms of reliability (5 items; $\propto= 0.676$). Lastly, the dependent variable, behavioural intention, was excellent in terms of reliability (5 items; $\propto= 0.872$). Based on this analysis, it can be assumed that all the items in this study were accurate and consistent.

4.4 Pearson's Correlation Analysis

Pearson's correlation analysis measures the strength of the relationship between two variables, which are IV and Dependent Variable (DV). In this study, the significant relationship between the dependent variable (behavioural intention) and independent variables (security, performance expectancy, and transaction fraud) was measured. The value of r (correlation) varies from –1 to +1. When the value of r = +1, there is a perfect positive linear relationship, and when the value of r = –1, there is a perfect negative linear relationship. If the value of r is '0', it means that there is no correlation.

Table 4: Pearson's Correlation Analysis Results

		SE	PE	TF	BI
SE	Pearson Correlation	1	.720**	.554**	.717**
	Sig. (2-tailed)		.000	.000	.000
	N	384	384	384	384
PE	Pearson Correlation	.720**	1	.628**	.713**
	Sig. (2-tailed)	.000		.000	.000
	N	384	384	384	384
TF	Pearson Correlation	.554**	.628**	1	.644**
	Sig. (2-tailed)	.000	.000		.000
	N	384	384	384	384
BI	Pearson Correlation	.717**	.713**	.644**	1
	Sig. (2-tailed)	.000	.000	.000	
	N	384	384	384	384

**Correlation is significant at the 0.01 level (2-tailed).
NOTE: Security (SE), Performance Expectancy (PE), Transaction Fraud (TF), Behavioural Intention (BI)

Table 4 shows a significant linear association between security and behavioural intention ($p < 0.001$). The observed coefficient of correlation r was 0.717, indicating a positive good linear relationship. Besides, there was a significant linear association between performance expectancy and behavioural intention ($p < 0.001$). The observed coefficient of correlation r was 0.713, also indicating a positive good linear relationship. Lastly, there was a significant linear association between transaction fraud and behavioural intention ($p < 0.001$). The observed coefficient of correlation r was 0.644, representing a positive but poor linear relationship.

4.5 Hypothesis Summary

Table 5: Summary of the Hypothesis Results

Hypothesis No.	Hypothesis Statement	Result	Significant Value
H_1	Security has a positive relationship with rural retailers' behavioural intention towards online payment.	Accepted	0.000
H_2	Performance expectancy has a positive relationship with rural retailers' behavioural intention towards online payment.	Accepted	0.000
H_3	Transaction fraud has a positive relationship with rural retailers' behavioural intention towards online payment.	Accepted	0.000

Since the p-value should be less than 0.005 in this analysis, security, performance expectancy and transaction fraud were accepted. Table 5 shows the acceptance of all the hypotheses of this study. The relationship between security and the rural retailers' behavioural intention towards online payment was significantly positive, hence, H_1 was accepted. It was accepted because the p-value was 0.000, i.e. less than 0.005. For the second hypothesis, the p-value was 0.000, therefore, H_2 was also accepted since performance expectancy had a significant positive relationship with rural retailers' behavioural intention towards online payment. Lastly, for the third hypothesis, the p-value was 0.000, which was below the acceptable value. Thus, H_3 was accepted since transaction fraud had a significant positive relationship with rural retailers' behavioural intention towards online payment.

5 Discussion

As shown in Table 4, there is a significant relationship between security and behavioural intention towards online payment among rural retailers in Kelantan since customers have different experiences and preferences. Therefore, they adopt different attitudes towards the safety of online transactions. This study concurs with the previous study conducted by Guan and Hua (2003), which have stated that the key issues for clients who use online payment systems are protection and trustworthiness, and these are closely connected. Even though clients use online payment systems in their daily transaction, they are afraid of the possibility of the leaking of personal information. They should know that there are more benefits when online payment is used, and they can reduce the risk of employee theft and the danger of being robbed of cash.

Performance expectancy also demonstrated a significant relationship with the behavioural intention of rural retailers in Kelantan to accept online payment because of its ease of use and productivity. The survey results indicated that the consumers considered the online payment platform to be very easy to use. The platform can show their account

balance, however, the payment portal must be prompted to respond. Finally, the target customers may be of different age groups and gender. Thus, since it is necessary to shift from the cash system culture to online payment, the online payment method should be clear, and there should be detailed instructions starting from the user account login until the payment has been made.

On the other hand, transaction fraud showed a poor positive relationship with the rural retailers' behavioural intention to adopt online payment due to the various problems that concern rural retailers. The results indicated that most respondents did not trust the online payment system, and the risk of transaction fraud associated with online payment was low. This study concurs with a previous study (Fernandes, 2013), which has stated that fraud in e-payment transactions has become a persistent challenge to merchants. It is difficult to completely eradicate the risk of fraud, but fraud can be minimised by taking timely steps. To effectively tackle fraud, merchants and financial institutions must take the required steps. Fraud prevention means taking measures to prevent fraud from happening, and when fraud prevention fails, retailers must quickly take steps to identify and deter the fraud as soon as possible. Prevention of fraud requires risk preparation, detection, and avoidance.

6   Conclusion and Recommendations

This research has several practical implications. First, the government should create a new policy on online payment, which will regulate the usage of online payment in the community. The online payment's acceptance by merchants and customers has been delayed by the lack of online banking and e-commerce requirements. Additionally, compared to an organisation that recognises that government policies and actions are not encouraging, an organisation's perception of the government's commitment to developing online payment policies and regulations will affect its adoption of online payment. Likewise, in online payment, government support is expected to be the primary influence on online payment adoption by companies. For instance, government policies that provide sufficient infrastructure, adequate financial support, and reasonable incentives to support online payment creation would influence companies' propensity to adopt online payment. Furthermore, training by government agencies or training providers to train the rural retailers can be provided to spread the benefit of online payment and manage the concern regarding the security issue.

The community should keep up with the current trend of society, which is more concerned about the effectiveness of the online payment platform, especially its performance. People, particularly those using technologies such as smartphones and the internet, are still on the verge of experiencing social change. To catch up with the present time, they should build a positive impression of the easy usage of the online payment system.

7. Limitations of the Study

This research has several limitations, which are the sample size, pandemic, and time. Some of the rural retailers in Kelantan did not know about the online payment platforms available in Malaysia. Besides, COVID-19 created a limitation to conduct the research. The Malaysian government had issued the movement control order, which prevented the researcher from directly contacting the respondents. Since there will be changes in the technology, income level, and expenses from time to time, another limitation in conducting this research is time.

8. Suggestions for Future Research

Based on the study's limitations, future studies need to expand the study area and collect information from both the management and employees. Moreover, future studies should group the respondents' firms into small and medium companies.

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