

Thailand E-Finance Transformation

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ABSTRACT

Due to the COVID-19 pandemic and Thailand government policy, Thailand is heading to cashless society in the near future. Thus, the researcher was looking into financial factors that may involve or drive Thailand e-finance so that we can be cashless society in the future. In order to prove all assumptions, this research was used to investigate the factors that can affect to Thailand e-finance transformation. The data used in this research were secondary data from Bank of Thailand from January 2017- July 2022 which will be used in the quantitative analysis. The independent variables were the values of e-money, payment cards, internet banking, and mobile banking. The dependent variable was the value of e-payment. The regression analysis was used to analyze the relationship between the independent and dependent variables. The results found that e-money, payment cards, internet banking, and mobile banking affect to e-payment at the statistical significant level of 0.05. R square is at .979.

Keywords: E-payment, E-money, Payment Cards, Internet Banking, Mobile Banking

INTRODUCTION

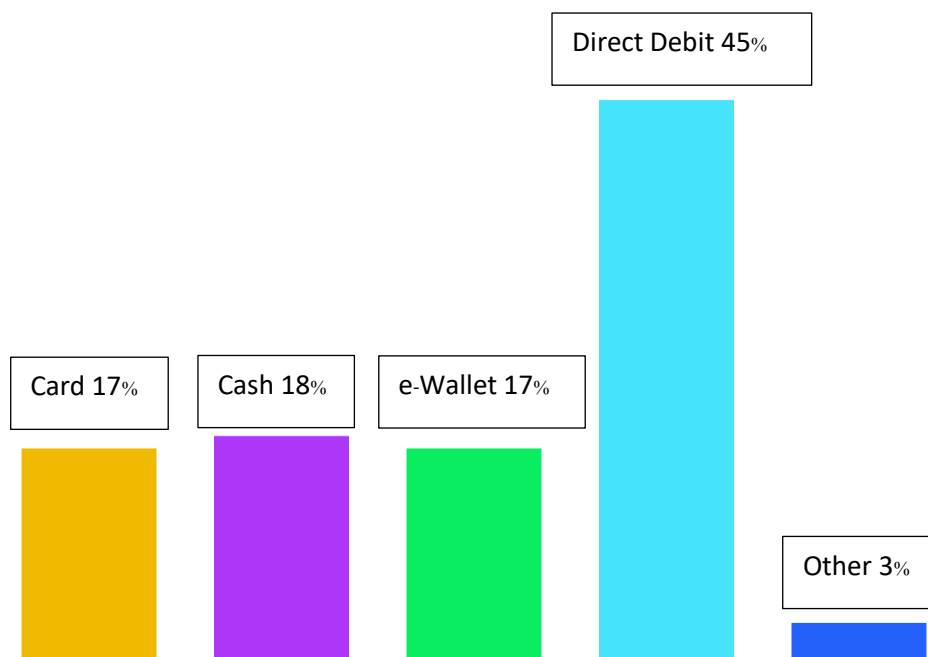
Covid-19 pandemic hit every part of the world including Thailand. Almost every country faced economic recession. Thailand is one of the countries that closed our country. Many companies had to shut down their operation and even their businesses. Most of them worked from home. School started to have online class via the internet and many meeting applications. Actually, people stopped going out because they were afraid of the germs. Even for the cash, some people washed every bills before using them. In 2017, Thailand E-Payment Trade Association: TEPA was established with 16 members that agree to use QR Code Standard for their services via E-Wallet and E-money. Both government and private sector has been using E-payment via credit/debit cards, mobile banking, and E-wallet to move forward cashless society.

Nowadays, there are many new financial technologies via online internet. E-payment system plays an important role in the banking and finance industry. The emerge of e-payment system in Thailand are from the following reasons:

1. Covid-19 pandemic situation. Covid-19 pandemic changed people to new normal lifestyle and drive their behaviors to be online instead of offline. Thus, e-commerce market is blooming in Thailand. People orders food and products via the internet or

- mobile commerce.
2. National E-Payment Master Plan. The goal of the Thai government is to develop a cashless payment system as well as to boost electronic commerce (e-commerce) transactions. Thailand used a digital push strategy to boost the usage of e-payment and m-payment systems. As a plan to reduce banknotes, the government promotes the use of mobile and internet banking increasing more than 140 % from 2012 to 2016 (Bloomberg.com, 2017).
 3. New Financial Technologies. Fintech in Thailand are growing so fast since the revolution of mobile payment. The development of E-payment will enable other types of fintech services such as payment, lending, personal wealth management, and insurance

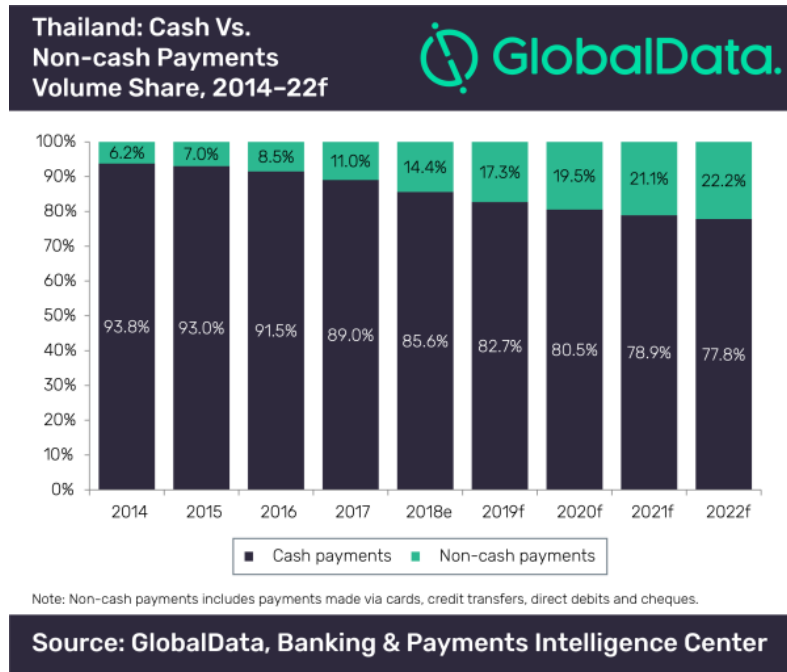
There are various e-payment systems such as smartcards, debit and credit cards, e-wallets, e-cheques, and e-cash. The increase in e-commerce transaction would lead to the rise in m-payment transactions.



Rapyd 2020 Asia-Pacific eCommerce and Payments Study

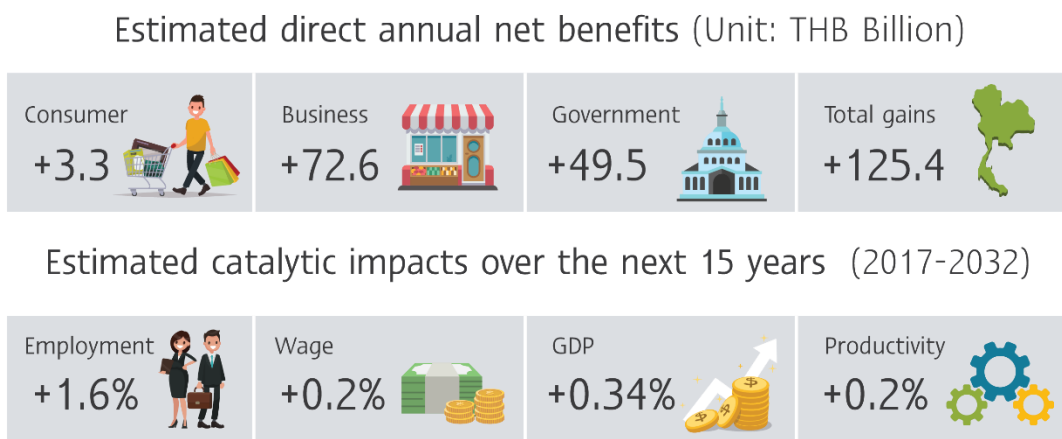
Source: <https://go.rapyd.net/thailand>

Figure 1: Most Popular Payments Method in Thailand



Source: <https://www.globaldata.com/media/banking/thailands-national-e-payment-master-plan-has-opened-door-to-less-cash-economy-says-globaldata/>

Figure 2: Thailand Cash vs. Non-Cash Payments



Source: Cashless city report by VISA retrieved from <https://www.scbeic.com/en/detail/product/4211>

Figure 3: Estimated annual net benefits experienced by Bangkok if it moved to cashless society

According to Figure 1-3, E-payment is very essential to Thailand. It can increase Gross Domestic Product (GDP), productivity, wages, and employment rates, etc. All participants which are consumers, businesses, and government will also get benefits from E-payment. The researcher then gathered all the information about E-payment and found that E-payment Transformation is changing Thai customer behaviors. Point-of-Sales (POS) is another channel that encourage E-payment. Many restaurants and department stores start to refuse to use cash and just receive E-payment.

Thus, the researcher would like to do a research on Thailand e-payment transformation in order to see Thailand e-finance systems and developments so the government or other business will be able to use the proper payment system in doing business. The results could also be beneficial for future financial development. The academic and researcher would be able to use the results of this paper to prove the theories of do further researches involved any variables that was used in this research.

OBJECTIVES OF STUDY

1. To study e-payment transformation in Thailand
2. To investigate e-money, payment cards, internet banking, and mobile banking
3. To identify factors that affect to e-payment system in Thailand

LITERATURE REVIEW

E-payment systems: E-payment system were adopted by many countries especially the developed nation. E-payment systems were developed in 1990s as alternative payment channels to make payment over internet and to develop e-commerce (Shaikh et al., 2017). People are convenient to pay anywhere and anytime.

E-money: Electronic money is introduced for the facilitation of e-commerce and for small value transactions. E-Money is defined by the European Central Bank as “an electronic store of monetary value on a technical device that may be widely used for making payments to undertakings other than the issuer without necessarily involving bank accounts in the transaction, but acting as a prepaid bearer instrument” (ECB blue book, 2001).

Payment cards: Payment cards are a tool of non-cash payments. They are more flexible than checks and a cash payment system. People can safely access to their money anywhere, at any time. There are several types of bank cards, including ATM cards, debit cards, and credit cards (Ryan, 2012).

Internet banking: Internet banking or online banking changed client's behavior and benefit the bank in several ways. People can save time and fare performing banking activities online at home (Mols, 1998).

Mobile Banking: Mobile banking or m-banking is an extension of internet banking which offers many financial services via the mobile phone. (Silparcha, 2017).

Commodity Theory which is one of the theory of money showed that E-money signaled for some of the obsolesce in the radical transformation of the conception of money (Papadopoulos, 2017).

CONCEPTUAL FRAMEWORK

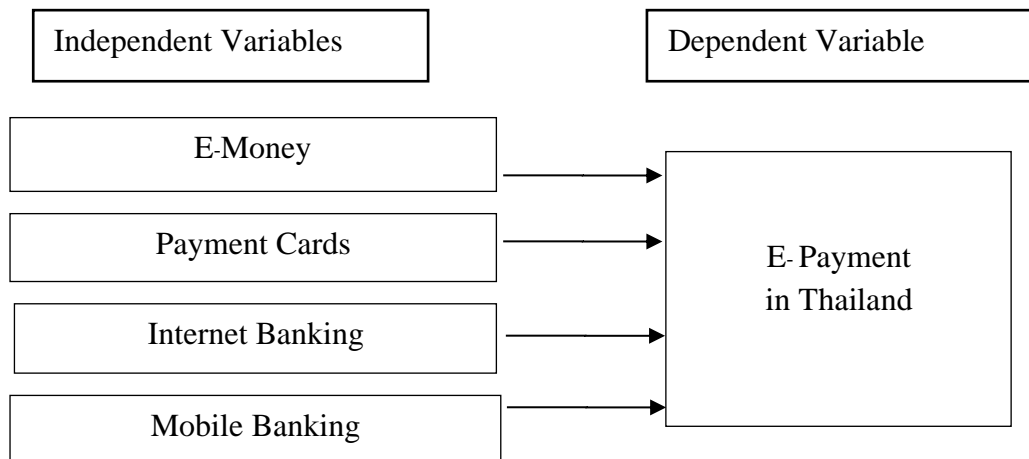


Figure 4: Conceptual Framework

HYPOTHESES

- H₁: The value of e-money affects to the value of e-payment in Thailand.
- H₂: The value of payment cards affects to the value of e-payment in Thailand.
- H₃: The value of internet banking affect to the value of e-payment in Thailand.
- H₄: The value of mobile banking affect to the value of e-payment in Thailand.

RESEARCH METHODOLOGY

This study used quantitative research. Second data research was used to gather information regarding Thailand payment systems. Information were collected from reliable online source which is Bank of Thailand. Multiple academic articles and journals were also studied to better understanding and reviews. The monthly data from January 2017-July 2022 was used to investigate Thailand mobile payment systems. Those data were the value of e-money, payment cards, internet banking, mobile banking, and e-payment. The independent variables are the value of e-money, payment cards, internet banking, and mobile banking. The dependent variable is the value of e-payment. The statistic application was used to analyze the hypotheses using multiple linear regressions method.

DATA ANALYSIS

The data collection used the monthly data for 67 months from January 2017 to July 2022. Data analysis was conducted using a computerize software package. The mean and standard deviation are as mentioned in Table 1.

Table 1: Descriptive Statistics

Descriptive Statistics			
	Mean	Std. Deviation	N
E-Payment	1022231.64	627693.420	67
E-Money	167655.18	50126.304	67
Payment Cards	66117.01	11904.102	67
Internet Banking	2029.16	316.237	67
Mobile Banking	2844.63	1658.921	67

Table 2 tells about the model summary. From this table, we can see that the relationship among E-Money, Payment Cards, Internet Banking, Mobile Banking and E-payment is very important ($R^2 = .980$). This result indicates that the regression line fit the data very well. From R^2 value, it suggests that 98% of E-Payment can be explained by E-Money, Payment Cards, Internet Banking, and Mobile Banking.

Table 2: Model Summary

Model Summary ^b							
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	F Change	Sig. F Change	Durbin-Watson
1	.990 ^a	.980	.979	90446.079	779.193	.000	.616

a. Predictors: (Constant), Mobile Banking, Internet Banking, Payment Cards, E-Money

b. Dependent Variable: E-Payment

From Table 3, the results of the ANOVA test $F=779.193$, $P<0.05$, the value of significance amounts to .000, which is less than (.005) that imply independent variable and dependent variable are statistically associated.

Table 3: ANOVA

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	25496745388782.875	4	6374186347195.719	779.193	.000 ^b
	Residual	507190580786.533	62	8180493238.492		
	Total	26003935969569.406	66			

a. Dependent Variable: E-Payment

b. Predictors: (Constant), Mobile Banking, Internet Banking, Payment Cards, E-Money

In accordance with the results of Multiple Linear Analysis, the value of R square is 0.980, this model showed the four independent variables can interpret 98% of the variability of the dependent variable.

From Table 4, the topic of coefficient is about the relation between independent and dependent variable. First, the value of significance is .001 so that is less than (0.05), H_1 is accepted. The coefficient between the independent variable e-money and the dependent variable e-payment is .277 that means if the number of e-money is high so the number of e-payment will higher too. This result demonstrates the Hypothesis 1: The value of e-money affects to the value of e-payment in Thailand.

Afterwards, the value of significance is .000 so that is less than (0.05), H_2 is accepted. The coefficient between the independent variable payment cards and the dependent variable e-payment is -.210, that means the independent variable has negatively relationship with the dependent variable. This result demonstrates the Hypothesis 2: The value of payment cards affects to the value of e-payment in Thailand.

Next, the value of significance is .001 so that is less than (0.05), H_3 is accepted. The coefficient between the independent variable internet banking and the dependent variable e-payment is .109, that means if the value of internet banking is higher therefore, the value of e-payment will higher likewise. This result demonstrates the Hypothesis 3: The value of internet banking affect to the value of e-payment in Thailand.

Lastly, the value of significance is .000 so that is less than (0.05), H_4 is accepted. The coefficient between the independent variable mobile banking and the dependent variable e-payment is .827, that means if the number of mobile banking is high so the number of e-payment will also higher. This result demonstrates the Hypothesis 4: The value of mobile banking affect to the value of e-payment in Thailand.

Table 4: Coefficients

Coefficients ^a					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	-155352.058	125999.192		-1.233	.222
E-Money	3.462	1.022	.277	3.388	.001
Payment Cards	-11.092	2.906	-.210	-3.818	.000
Internet Banking	217.027	62.378	.109	3.479	.001
Mobile Banking	312.904	24.181	.827	12.940	.000

a. Dependent Variable: E-Payment

Afterwards, the outcomes of hypotheses testing are presented. Four key hypotheses are tested to determine the predictive strength of each of the relationship. According to the standardize coefficient data, the overall results indicate that, mobile banking has the highest effect to e-

payment followed by e-money, payment cards and internet banking. The hypotheses test can be accepted. Coefficients enable construction of the linear regression equations that can be derived to describe this relationship. The unstandardized regression equations of the relationship among E-Money, Payment Cards, Internet Banking, Mobile Banking and E-payment can be defined as follow:

$$\text{E-Payment} = -155352.058 + 3.462(\text{E-Payment}) + (-11.092) (\text{Payment Cards}) + 217.027 (\text{Internet Banking}) + 312.904 (\text{Mobile Banking})$$

CONCLUSIONS

Overall, the objectives of the research were effectively accomplished. The findings offered some important insights that could be applied to the financial decisions for both financial institution and businesses in setting financial and strategic policies.

Table 5: Results of the Hypothesis Testing

H ₁ : The value of e-money affects to the value of e-payment in Thailand.	Accept
H ₂ : The value of payment cards affects to the value of e-payment in Thailand.	Accept
H ₃ : The value of internet banking affect to the value of e-payment in Thailand.	Accept
H ₄ : The value of mobile banking affect to the value of e-payment in Thailand.	Accept

DISCUSSION AND RECOMMENDATIONS

The hypotheses results can be summarized as follows:

H₁: The value of e-money affects to the value of e-payment in Thailand.

H₂: The value of payment cards affects to the value of e-payment in Thailand.

H₃: The value of internet banking affect to the value of e-payment in Thailand.

H₄: The value of mobile banking affect to the value of e-payment in Thailand.

These findings were consistent with the expected outcomes. Banks can use the results of this research to improve their new financial technology that can improve their e-payment systems and offer a wide range of services.

The transformation of e-finance can start from the e-payment system to other new financial technology. As we can see from the past that there will be new instruments, tools, devices, or applications that can be used to integrated our banking and financial services in the future. The E-Payment transformation will facilitate the developments of new types of payment instruments.

Government should set agenda for new financial technology using E-Payment as a tools. Thus, the master plan should abide by the regulation of financial services among ASEAN countries.

FUTURE RESEARCH

The recommendation for future research is involved in financial areas as follows:

1. Future research can use other factors such as economic factors to prove the relationship with e-payment.
2. The researchers can conduct quantitative analysis using questionnaire to see the behaviors of Thai people in using e-payment systems.
3. The financial institutions and business can develop the new instrument for e-payment system using the opinions and comments from the research.

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