Introduction to Mobile Cash Technology: Will People be able to adopt it someday? A study of Mobile Cash Technology using UTAUT2 Model

[1*]Riana Rusmauli Bakkara, [2]Dwi Sunu Kanto, [3]Noverdi Bross

[1]Trilogi University, Jakarta, Indonesia
[2]Trilogi University, Jakarta, Indonesia
[3]Trilogi University, Jakarta, Indonesia

Abstract: **Indonesia is one of the country with the high level of technological development, and also has the potential to become the largest digital marketplace in Asia. Lifestyles are also change along with the development of technology, including any forms of payment. Payments are also change from cash money to digital (electronic) money as an effect from technology development. This study test the effect of Content, Faciliting Conditions, Trusts, and Habit to Intention to Use and Usage Behavior through Age and Gender from Mobile Cash (MC) Technology Adoption. This study is using Partial Least Square Structural Equation Modelling (PLS-SEM) to analyze the data, and using Unified Theory of Acceptance and Use of Technology 2 (UTAUT2) model for research design.**

Keywords: **Age, Contents, Effort Expectancy, Facility Conditions, Gender, Habits, Hedonic Motivation, Performance Expectancy, Price Value, Social Inluence.**

I. INTRODUCTION

Indonesia is one of the country with the high level of technological development, and also has the potential to be the largest digital marketplace in Asia. Lifestyles are also change along with the development of technology. High public interest in using the internet and the development of digital technology are moving so fast that it changes lifestyle and world economy. Innovation develops quickly and dynamically encourages people to be creative and innovative. Development of digital world is also followed by changes in payment system. Payment systems are also change periodically from cash money to digital (electronic) money as an effect from technology development. Central Bank of Indonesia provide has shown a significant increase about the number of electronic money as a payment system. According to Central Bank of Indonesia, until end of May 2016, there are more than 38 million copies of electronic money owned by Indonesian citizens with the total amount of transaction for more than 587 billions Indonesian currency.

The rapid growth of electronic money is driving all industry to develop their products and services that supports electronic payment system. Along with the rapid growth of electronic money and increasing public interest in non cash transactions, Finnet Indonesia (Finnet), is a company that supports gateway payment system, is also participate in electronic finance industry through their Mobile Cash (MC) Technology. MC is a mobile-based-payment system by using electronic money as their source of fund. To using this service, user only need to download Finnet Mobile Cash application on their mobile phone. User can directly used this payment system after activation and reload their balance through several banking channel.

By January through March 2018, Finnet have 1.650, 1.730, 1.930 registered member and 350, 456, 535 active user, respectively. This indicates that Finnet only have small percentage of active user. Finnet has been implementing their MC Technology since 2011, however it is found that there is a huge gap between the number of registered and active user,

compared with the potential of digital marketplace. Since MC is a technology-based financial service, there exist a necessary adoption process by user to see how much the MC concept can be fully accepted. This study help identify some important factor that could be able to drive the society to be an active user of MC Technology.

UTAUT2 model were formulated based on integration of acceptance of technology model and theory model that has eight important elements from previous study as follows: Theory of Reasoned Action (TRA), Technology Acceptance Model (TAM), Motivational Model (MM), Theory of Planned Behavior (TPB), Gabungan TAM dan TPB (C-TAMTPB), Model of PC Utilization (MPCU), Innovation Diffusion Theory (IDT) dan Social Cognitive Theory (SCT) [1][2]. UTAUT model aims to explain someone's intention to accept and become a user of a technology based on multiple factors. However in 2012, the UTAUT2 Model was introduced, this model was modified and developed from previous model. The UTAUT2 Model can study the level of acceptance from user's perspective [3].

A. Problem Statement:

This study have multiple problem statement as follows:

1. Based on UTAUT2 model, what are the factors that affect user intention and behavior while adopting MC Technology?

2. How much user assess MC Technology to multiple factors that associate with UTAUT2 Model?

3. Are age and gender differences affect multiple factors that associate with UTAUT2 Model?

4. Is proposed research model in this study will be able to predict user's intention to accept MC features?

B. Research Design:

1. Research Framework:

This study is using Finnet's Mobile Cash services as framework. However more detailed on research framework can be seen in figure 1 below.
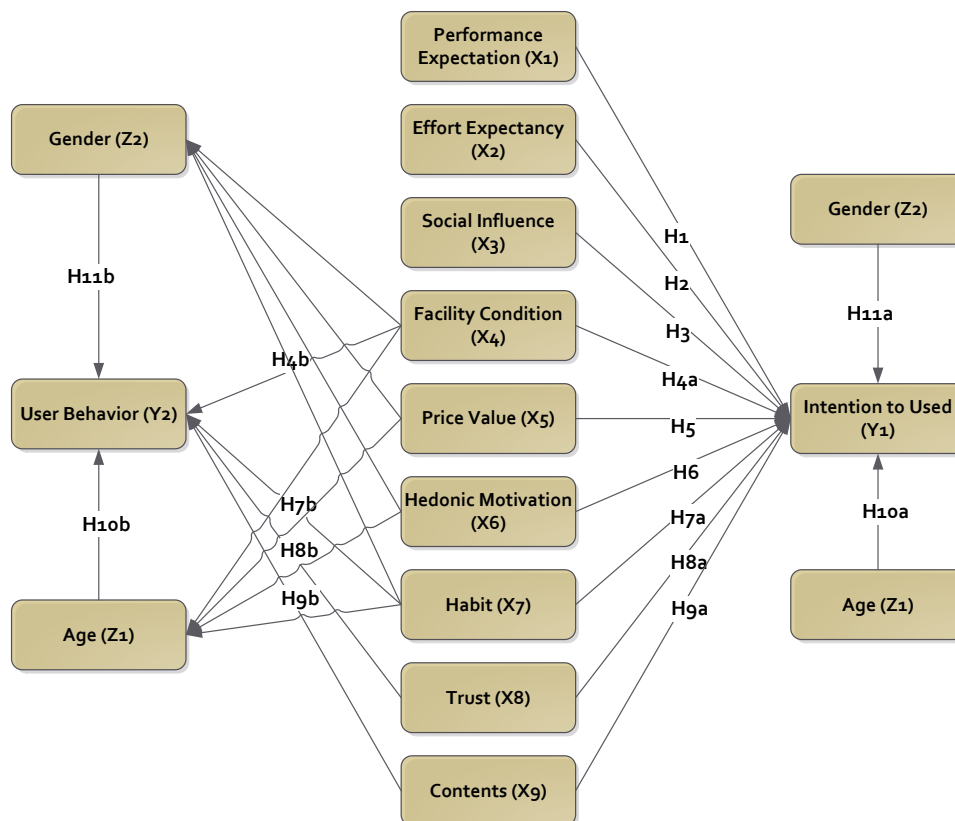

Fig 1: Overall Research Framework

2. Population, Sample Selection, and Dataset:

The population in this study is 1.000 registered and activer MC user that has been using MC transaction for at least once in a month. Sample selection in this study is 369 user based on Krecjie's sample calculation technique [4]. Data used in this study is collected by using questionnaire as a result from the 369 user.

3. Variables:

This study is using two dependent variable such as Intention to Used (Y_1) and User Behavior (Y_2), and two moderate variable such as Age (Z_1) and Gender (Z_2). And also a total of nine independent variables are used in this study which is Performance Expectation (X_1), Effort Expectancy (X_2), Social Influence (X_3), Facility Condition (X_4), Price Value (X_5), Hedonic Motivation (X_6), Habit (X_7), Trust (X_8), and Contents (X_9).

4. Data Validity, Analysis, and Hypothesis Testing:

This study is using UTAUT2 Model and PLS-SEM for data analysis. The data analysis in this study is divided into two parts, first is Outer Model and Inner Model evaluation. Outer Model is evaluate by using Composite Reliability. While Inner Model is evaluate by using Q-Square Test. Hypotesis are test by using Path Coefficient value.

II. RESULTS AND FINDINGS

A. Outer Model Evaluation:

In this study, the outer model is evaluated by using Composite Reliability value. The constuct is said to be reliable if the Composite Reliability value is over 0.700.

TABLE: I

Construct	Composite Reliability	Construct	Composite Reliability
A	1,000	HM	0,937
CN	0,918	IU	0,984
CN * A	0,977	IU * G	0,996
CN * G	0,966	PE	0,953
EF	0,969	PE * A	0,993
EF * A	0,996	PV	0,856
FC	0,899	SI	0,946
G	1,000	TS	0,943
HB	0,945	TS * A	0,991
HB * A	0,990	TS * G	0,982
HB * G	0,985	UB	0,983

Table I provide the result of composite reliability test. It can be shown that all construct have composite reliability value above 0.700, this indicates that all indicators and constructs are reliable.

B. Inner Model Evaluation

The inner model is evaluated by using Q-Square Test. The result is said to be significant if t-statistic value is over t-table value, in this case, t-table would be 1.960 (95% significant level).

TABLE: II

NO	Variable	Path Coefficient	t-Statistics	t-Table	Remarks
1	A -> IU	0,372	1,444	1,960	Not Significant
2	CN -> IU	0,262	2,168	1,960	Significant
3	CN * A -> IU	(0,227)	0,832	1,960	Not Significant

4	EF -> IU	0,196	0,986	1,960	Not Significant
5	EF * A -> IU	0,183	0,358	1,960	Not Significant
6	FC -> IU	(0,109)	1,337	1,960	Not Significant
7	G -> IU	0,021	0,717	1,960	Not Significant
8	HB -> IU	0,347	2,171	1,960	Significant
9	HB * A -> IU	(0,533)	1,555	1,960	Not Significant
10	HM -> IU	0,111	1,249	1,960	Not Significant
11	PE -> IU	0,249	1,554	1,960	Not Significant
12	PE * A -> IU	(0,304)	0,715	1,960	Not Significant
13	PV -> IU	(0,028)	0,398	1,960	Not Significant
14	SI -> IU	(0,079)	1,357	1,960	Not Significant
15	TS -> IU	0,214	1,369	1,960	Not Significant
16	TS * A -> IU	0,508	1,215	1,960	Not Significant
17	A -> UB	(0,050)	1,674	1,960	Not Significant
18	CN -> UB	0,365	2,553	1,960	Significant
19	CN * G -> UB	(0,283)	1,150	1,960	Not Significant
20	FC -> UB	(0,146)	3,044	1,960	Significant
21	G -> UB	(0,185)	0,966	1,960	Not Significant
22	HB -> UB	(0,110)	0,822	1,960	Not Significant
23	HB * G -> UB	0,062	0,247	1,960	Not Significant
24	IU -> UB	0,322	1,493	1,960	Not Significant
25	IU * G -> UB	0,865	2,257	1,960	Significant
26	TS -> UB	0,371	2,064	1,960	Significant
27	TS * G -> UB	(0,500)	1,576	1,960	Not Significant

Table II provide the Q-square test result. It can be shown that from the total of 27 hypothesis, only 6 can be accepted. The construct is said to have a significant effect when the t – statistics value is over the t – table value.

C. R – Squared

The magnitude of the effect on the endogenous latent construct is represented by the R^2 value in each endogenous latent construct. R^2 functions to explain the ability of independent variables to the dependent variable. The higher the R^2 value, the greater the ability of the independent variable can explain the dependent variable.

TABLE: III

Construct	R^2 Value
IU	0,759
UB	0,783

The construct Intention to Use (IU) and User Behavior (UB) has R^2 value for 0.759 and 0.783, respectively. This result indicates that 75.9% from IU can be explained by Contents (CN), Age (A), Contents and Age (CN*A), Effort Expectacy (EF), Effort Expectacy and Age (EF*A), Facility Condition (FC), Gender (G), Habit (HB), Habit and Age (HB*A), Hedonic Motivation (HM), Performance Expectacy (PE), Performance Expectacy and Age (PE*A), Price Value (PV), Social Influence (SI), Trust (TS), dan Trust and Age (TS*A). And 78.3% from UB can be explained by Age (A), Content (CN), Content and Gender (CN*G), Facility Condition (FC), Gender (G), Habit (HB), Habit and Gender (HB*G), Intention to Use (IU), Intention to Use and Gender (IU*G), Trust (TS), and Trust and Gender (TS*G).

III. CONCLUSION

Based on table II above, the conclusion is, from multiple hypothesis that were test in this study, only H_{9a}, H_{9b}, H_{7a}, H_{4b}, H_{8b}, and H_{11b} are accepted. And the rest of the hypothesis were rejected. Both of moderate variables, Age (Z_1) and Gender (Z_2) were not be able to provide enough evidence for moderating role to both variable Intention to Use (Y_1) and User Behavior (Y_2).

REFERENCES

[1] M. Fishbein, and I. Ajzen, Belief, Attitude, Intention, and Behavior: An Introduction to Theory and Research. Addison-Wesley, MA: 1975.

[2] V. Ventakesh, M.G. Morris, G.B. Davies, and F.D. Davies, "User Acceptance of Information Technology: Toward a unified view", MIS Quarterly, Vol. 27, No. 3, 2003.

[3] V. Ventakesh, J.J.L. Thong, and X. Xu, "Consumer Acceptance and Use of Information Technology : Extending the Unified Theory of Acceptance and Use of Technology", MIS Quarterly, Vol. 36, No. 1, 2012.

[4] R.V. Krejcie, and D.W. Morgan, "Determining sample size for research activities. Educational and Psychological Measurement", Vol. 30, pp. 607-610, 1970.