

INFLUENCED FACTORS OF E-MONEY ADOPTION

Farid Nurhidayat
PT. Samanata Surya Semesta
rid.moeslim@gmail.com

ABSTRAK

Penelitian ini bertujuan untuk mengidentifikasi faktor-faktor yang mempengaruhi adopsi e-money di Yogyakarta, Jakarta dan Surabaya. Ini juga bertujuan untuk menguji model pembentukan adopsi e-money melalui beberapa variabel; persepsi manfaat, persepsi kemudahan penggunaan. Ada 300 orang dari Jakarta, Surabaya dan Yogyakarta sebagai sampel penelitian. Analisis data yang digunakan di sini adalah Structural Equation Model (SEM). Hasil penelitian menunjukkan bahwa faktor-faktor yang mempengaruhi adopsi e-money adalah norma subyektif, persepsi manfaat dan persepsi kemudahan penggunaan. Model ini mampu mengklarifikasi hubungan antara faktor-faktor yang mempengaruhi adopsi e-money. Implikasi dari hasil penelitian terhadap penerbit yang menyediakan uang elektronik adalah persepsi manfaat dan faktor kemudahan penggunaan yang dirasakan, sehingga akan mendapat kepercayaan lebih dari setiap orang untuk mengadopsi uang elektronik.

Kata Kunci: Adopsi E-Money, Persepsi Kegunaan, Persepsi Kemudahan Penggunaan

ABSTRACT

This research aims to identify the factors that influence the adoption of e-money in Yogyakarta, Jakarta and Surabaya. It also aims to test formed model of e-money adoption through some variables; perceived of usefulness, perceived ease of use. There are 300 people from Jakarta, Surabaya and Yogyakarta as research samples. Data analysis used here is Structural Equation Model (SEM). Research result shows that the factors which influenced e-money adoption are subjective norm, perceived usefulness and perceived ease of use. This model is able to clarify the connection among influenced factors of e-money adoption. The implication of the research result to the publisher who provide e-money is to perceived usefulness and perceived ease of use factors, so it will gain more trust from every people to adopt e-money.

Keywords: E-Money Adoption, Perceived Usefulness, Perceived Ease Of Use

INTRODUCTION

Development of e-money as a non cash transactional instrument cannot be separated from an effort to create less cash society in Indonesia. It becomes needed

to create less cash society in Indonesia because in its development, it is basically more efficient than cash transaction. It mostly related with the high budget of cash handling and its obstacles of Bank Indonesia to produce and circulate Rupiah in a proportional amount and nominal. Due to the number of Indonesian people which is 255,461,700 and its geographical condition, then we need a large amount of Rupiah (Bank Indonesia, 2006). Besides, the using of e-money gives a lot of benefits to society. One of its benefits is more practical than non cash because it does not need refunds. It is also more efficient in form of time because the transaction is done faster and less risk (Hadi, 2013).

Some factors that can influence e-money adoption are safety and confidentiality, usage benefit, usage easiness, pleasure, trust, information and society's attitude toward the usage of e-money (Purwiati, 2013). Besides, research of Waspada (2012) claims that there are five factors of e-money adoption in its users, they are beneficial perception, easy transcation, sufficient information, safety and privacy level, and transactional pleasure. The conclusion of the research shows that the existence of e-money adoption in business world is still relatively low. The result of the research has same perception with Jatmiko (2013) that the factors that influence e-money adoption are attitude towards use, intention to use, perceived security, perceived usefulness, perceived ease to use, subjective norm and individual mobility.

LITERATURE RIVIEW

Technology Accepted Model (TAM) can be used to predict any acceptance of new technology. This model was firstly introduced by Davis (1989) and it is one of model that used by society because it shows good validity. TAM is an adaptation from Theory of Reasoned Action Model (TRA) which spesifically switched with the model of information system acceptance by user (Davis, 1989). E-money can be defined as "stored-value or prepaid products in which a record of the funds or value

available to a consumer is stored on an electronic device in the consumer's possession" (Hidayati dkk, 2006).

There are some obstacle factors of e-money development in Indonesia. Those obstacles are (Hadi, 2013):

1. Less knowledge and understanding of the society.
2. Society's attitude and habit which still accustomed to use cash transaction, and
3. Lack of good standard and well-spread infrastructure.

Based on description above, it can be concluded that there are some obstacles that should be faced in the development of e-money as a non cash transactional instrument. The obstacle come not only from the society but also from the infrastructure. Then, the obstacles should be handled before developing the usage of e-money.

Hypothesis Development

A social process implied in this research refers to the relation between subjective norm and image. Result's research of Hartwick and Barki (1994) shows that the influence of subjective norm to the usage of technology occur in a term of mandatory not voluntary. It because of basically the effect of subjective norm only happen when there is a certain factor that is crucial give a kind of demand to the individu to do some kind of action. Such action in the end done because there are social figures which are able to give rewards for the things happened, or give sanction when the things expected are not happened. Then, Venkatesh and Davis (2000) add a concept of voluntariness construct as a moderative variable and the result shows that the hypothesis is proven.

Meanwhile, it cannot be neglected that subjective norm can influence the using of technology through other mechanism. That mechanism is indirect influence of subjective norm to the using of technology thorough usage perception (Venkatesh and Davis, 2000; Venkatesh and Bala, 2008). Research's result of Venkatesh and Davis (2000); Venkatesh and Bala (2008) also shows that subjective norm can influence the form of image and then image give influence toward usage perception.

Based on the explanation above, then the writer can formulate the research hypothesis below:

H₁: Subjective norm give positive influence toward perceived usefulness

H₂: Image give positive influence toward perceived usefulness

Research's result of Polson (1987) shows that individual knowledge for certain situation will provide a foundation that determine the selection of a work assignment that needed to be resolved with the help of the use of certain technology system. Meanwhile, that condition cannot be separated from output quality which become a measurement of technology in finishing the task given. It is similarly occurred also to the research's result of Venkatesh and Davis (2000) which shows that output quality can influence the relation between job relevance and perceived usefulness. In other side, result demonstrability can give direct influence to perceived usefulness (Venkatesh and Davis, 2000; Venkatesh and Bala, 2008). Previously, Agarwal and Prasad (1997) has proven that significant relation between those aspects. Based on that description, then the writer can formulate a research hypothesis below:

H₃: Job relevance give positive influence to perceived usefulness

H₄: Result demonstrability give positive influence to perceived usefulness

Research's result of Venkatesh and Bala (2008) shows that computer self efficacy and perception of external control, each of it give a significant influence toward perceived ease of use. Besides, the influence of computer anxiety and computer playfulness to perceived ease of use are moderated by experience. Based on that description, then the writer can formulate a research hypothesis below:

H₅: Computer self efficacy give positive influence to perceived ease of use

H₆: Perception of external control give positive influence to perceived ease of use

H₇: Computer anxiety give positive influence to perceived ease of use

H₈: Computer playfulness give positive influence to perceived ease of use

The other determinan group from perceived ease of use are adjustment, which cover perceived enjoyment and objective usability (Venkatesh and Bala, 2008). Based on Venkatesh (2000), perceived ease of use of every individu is not formed by trust of computerization but also by perception adjustment by every individu. This adjustment tends to relate with emotional aspects. Research's result of Venkatesh and Bala (2008) shows that experience moderates not only perceived enjoyment but also objective usability through the perceived ease of use. Based on that description, then the writer can formulate a research hypothesis below:

H₉: Perceived enjoyment give positive influence to perceived ease of use

H₁₀: Objective usability give positive influence to perceived ease of use

Based on Davis (1993), perceived ease of use can give positive influence to perceived usefulness. Perceived usefulness is related to the level of trust that the usage of technology is able to increase the performance (Davis, 1993). This theory is supported by several previous research that shows perceived ease of use influenced perceived usefulness. Lu, et.al., (2005) explains that positive perception to the easiness of technology usage can give influence to the form of positive usage perception. Besides, Schierz et.al (2009) also apply a research which its result shows the easiness of technology usage can be positively felt through the measurement of usage or benefits of technology user. Based on that explanation, then the writer can formulate a research hypothesis below:

H₁₁: Perceive ease of use give positive influence to perceived usefulness

Perceived usefulness is a supported factor in accepting a usage of technology (Venkatesh and Davis, 2000). Thompson et.al., (1991) said that someone would use of a technology when the person having knowledge on the benefits or usefulness who are positive with this usage. Besides, Rogers (1995) describes that a user will accept any innovation if that innovation provide such a unique advantages compared to the previous sollution. Based on that description, then the writer can formulate a research hypothesis below:

H₁₂: Perceived usefulness give positive influence to use e-money

The more minimum a perceived difficulty will be handled by technology usage. It means that easiness perception of usage is getting more positive (Davis, et.al., 1989). The result of research by Ventakesh and Bola (2008) shows that experience moderates perceived ease of use toward the usage of technology system. It cannot be separated from the increasing of information due to the easy or difficult usage of technology system in gaining experience of usage. Based on that description, then the writer can formulate a research hypothesis below:

H₁₃: Experience moderates the influence of perceived ease of use due to the use of e-money**METHOD OF RESEARCH**

Method of research used in this paper is survey method, it is a research which is done by taking samples directly from some populations, so it will result a relation among variables (Cooper and Schindler, 2011). In this research, the main notion discussed is about the number of e-money in Yogyakarta, Jakarta and Surabaya. Besides, this research also discusses some factors that influence e-money adoption and its pattern of adoption in Yogyakarta, Jakarta and Surabaya.

Samples are some elements chosen from a population (Cooper and Schinder, 2010). Sample is also defined as a part of population (Sekaran, 2006). The usage of samples has some benefits toward this research such as; low cost, conclusion's accuracy, fast data collecting and the number of population element (Cooper and Schinder, 2010). Samples in this research are measured based on 100 people from every cities, so it takes 300 samples.

Validity test is done by seeing the factor loading, then reliability test is done by cronbach's alpha test. The instrument of this research can be said as valid whenever it has loading factor $> 0,5$. The instrument is reliable whenever cronbach's alpha $> 0,70$.

The suitability model done to test whether models are according to research conducted. Suitability model can be tested with some measurements. The suitability model done with Path Analysis uses Amos version 21 software. Methods used is Structural Equation Model (SEM). Statistical analysis estimates some the separated regression, but interconnected simultaneously (simultaneously). In this analysis, there were several dependent variable, and dependent variable could be independent variable for other dependent variable.

A hypothesis which presents the direct influence toward a construct to another construct by checking the significant path coefficient to a certain significant status. For one direction testing (one tailed) with significant level is 0,05 the value of critical ratio $\geq 1,96$ atau $P < 0,05$.

RESULT AND ANALISYS

Validity test is done by seeing the factor loading, then reliability test is done by statistic test in form of cronbach's alpha. Research instrument can be classified as valid if its loading factor $> 0,5$. The result of validity test shows that all questions item has loading factor score $> 0,5$, so that it can be concluded that all question items in all variables are valid. Reliability test is done to measure a questionnaire so it can be counted as reliable or accurate in showing the answer of respondent due to all questions which must be consistent or stabil time by time. Research variable has Cronbach alpha score bigger than 0,70 so it can be concluded that all variables in the research are reliable. By having all the research instrument valid and reliable, then all the research instruments can be said deserved to use to take a research data.

The respondents in this research consist of all individu who has had and used e-money in The respondents in this research consist of all individu who has had and used e-money in Yogyakarta, Jakarta and Surabaya. There are 300 people. Then, the writer chategorize responednts' characteristics by grouping them based on gender, age and occupation as described in the table below.

Tabel 1
Respondent Characteristic Description

	Aspect	Percentage (%)		
		Yogyakarta	Jakarta	Surabaya
Gender	Male	50	43	39
	Female	50	57	61
	Total	100	100	100
Age	19 – 25 years old	21	27	28
	26 – 35 years old	61	50	54
	36 – 45 years old	16	14	14
	More than 45 years old	2	9	4
	Total	100	100	100
Occupation	PNS/TNI/Polri	6	24	14
	Private Employee	61	61	48
	Professional	26	1	9
	Entrepreneur	5	6	9
	University Student	2	5	14
	Veteran/Housewives	0	3	6
	Total	100	100	100

The suitability model done to test whether models are according to research conducted. Suitability model can be tested with some measurements. The suitability model done with Path Analysis uses Amos version 21 software. Methods used is Structural Equation Model (SEM). Statistical analysis estimates some the separated regression, but interconnected simultaneously (simultaneously). In this analysis, there are three types of measurement, they are *absolute fit measures*, *incremental fit measures* and *parsimonious fit measures*. Hereby the summary of testing result of Goodness of Fit model after modification.

Table 2

Result of Suitability Test CFA Model- Influenced Factors of E-Money Adoption

<i>Goodness of Fit</i>	Analysis Result	<i>Cut-off Value</i>	Note
χ^2 (Chi-Square)	775,720	Less	Sufficient
Probability	0,000	$\geq 0,05$	Sufficient
CMIND/DF	2,023	≤ 2	Fit
GFI	0,851	$\geq 0,90$	Marginal
AGFI	0,819	$\geq 0,90$	Marginal

NFI	0,868	$\geq 0,90$	Marginal
TLI	0,918	$\geq 0,90$	Fit
CFI	0,928	$\geq 0,90$	Fit
RMSEA	0,059	$\leq 0,08$	Fit

Source : Primary Data 2014

Result of Goodness of Fit can be taken from the analysis result score of Chi Square and probability which less than Cut-off Value. However, the score of CMIND/DF, TLI and CFI shows a fit model because the score has been more than recommended score. Yet, the other criteria should be analyzed to conclude goodness of fit overall model, RMSEA score shows fit model based on the recommended score. Result of goodness of fit test can be concluded overall that hyphotethic model is supported by empirical data or model that can be counted as fit model. Next step is testing toward hypothesis proposed in previous chapter. Hypothesis test is based on the score of Critical Ratio (CR) from a causality as a result of SEM as can be seen from the table below.

Table 3
Regression Weight Structural Equational Model

	Hypothesis			Estimate	S.E.	C.R.	P	Test Result
H ₁ :	PU	<---	SN	-.027	.037	-.732	.464	Not Supported
H ₂ :	PU	<---	I	-.050	.032	-1.550	.121	Not Supported
H ₃ :	PU	<---	JR	.164	.044	3.761	.000	Supported
H ₄ :	PU	<---	RD	.120	.039	3.074	.002	Supported
H ₅ :	PEU	<---	CSE	.452	.059	7.637	.000	Supported
H ₆ :	PEU	<---	PEC	.272	.050	5.496	.000	Supported
H ₇ :	PEU	<---	CA	-.043	.047	-.920	.357	Not Supported
H ₈ :	PEU	<---	CP	.297	.058	5.119	.000	Supported
H ₉ :	PEU	<---	PE	.395	.049	8.076	.000	Supported
H ₁₀ :	PEU	<---	OU	-.104	.064	-1.626	.104	Not Supported
H ₁₁ :	PU	<---	PEU	.596	.080	7.472	.000	Supported

	Hypothesis	Estimate	S.E.	C.R.	P	Test Result
H ₁₂ :	Use <--- PU	.698	.136	5.125	.000	Supported
H ₁₃ :	Use <--- PEU	.336	.102	3.293	.000	Supported

Source: Primary Data 2015

Based on the result test, it is known that there are CR score below 1,96 or with probability bigger than 0,05. Hypothesis with CR score less than 1,96 or probability more than 0,05 shows uncommon result or unproven hypothesis.

CONCLUSION

Based on the result of research in Yogyakarta, Jakarta and Surabaya and some research model analysis, the writer can take some conclusion as stated below:

1. Analysis of the usage adoption model to *e-money* shows supported fit result by the research data. That model covers some influenced factors due to *e-money* such as *job relevance*, *result demonstrability*, *computer self efficacy*, *perception of external control*, *computer playfulness*, *perceived enjoyment*, *perceived usefulness*, and *perceived ease of use*. *Perceived usefulness* factor is a factor that play important role in influence the usage of *e-money* technology. Every individu who feels the advantage of *e-money* will not mind to use *e-money* again in other transaction. Every individu who feels easy and effective in using *e-money* will use it again in any other retail transaction.
2. Individual which has comfortability with *e-money* can directly feel benefits use e-money. Yet, the use of e-money have not yet been widely used because its prestige of e-money is not better than the prestige of using debit card. This could be happened because transaction e-money can only be done if available merchants.

Implications of the result of this research for publisher that provides e-money is to prioritize factors perceived usefulness and perceived ease of use, to be the trusted by any individual to adopt *e-money*. Risk perception should be minimizes as well as may remember that money is a crucial thing for social life. The research also

can be used by Bank Indonesia as central bank to improve the quality of electronic money because many people believe that electronic money is fast, safe, and efficient way to used.

REFERENCES

- Agarwal, Ritu & Jayesh Prasad. (1997). The Role of Innovation Characteristic and Perceived Voluntariness in the Acceptance of Information Technologies. *A Journal of The Decision Science Institute*, Vol. 28, No. 3, pp. 557-582
- Bank Indonesia. (2006). *Laporan Penelitian Persepsi, Preferensi dan Perilaku Masyarakat dan Lembaga Penyedia jasa terhadap Sistem Pembayaran Non-Tunai*. Jakarta: Bank Indonesia.
- Cooper & Schindeler. (2010). *Business Research Method*. Seventh Edition. New York: McGraw-Hill, Inc.
- Davis, F.D. (1989). Perceived Usefulness, *Perceived Ease of Use, and User Acceptance of Information Technology*. *MIS Quarterly*.
- Davis, F.D., Bagozzi, R.P. & Warshaw, P.R. (1989). User Acceptance of Computer Technology: a Comparison of Two Theoretical Models. *Management Science*, 35, pp. 982-1003.
- Davis, F.D. (1993). User Acceptance of Information Technology: System Characteristics, User Perceptions and Behavioral Impact. *Int. J. Man-Machine Studies*, 38, pp. 475-487.
- Hadi, R. (2013). *Materi Talkshow Bank Indonesia 2 Oktober 2013*. Bank Indonesia.
- Hartwick, J. dan Barki, H. (1994). "Explaining The Role of User Partisipation in Information Sysfem Usage". *Management Science*.40:4. pp. 440-465.
- Hidayati, S. dkk. (2006). *Kajian Operasional E-Money*. Bank Indonesia.
- Jatmiko. (2013). Analisa Tingkat Penerimaan Konsumen terhadap Penggunaan Uang Elektronik (Studi kasus: e-Toll Card Bank Mandiri). Jakarta: Universitas Indonesia.
- Lu, J., Yao, J., & Yu, C.S. (2005). Personal Innovativeness, Social Influences,dan Adoption of Wireless Internet Services Via Mobile Technology. *Strategic Information Systems*. Vol. 14 (3), pp. 245-268.
- Polson, P.G. (1987). Developing a User Interface Technology for Use in Industry. Proceedings of the Second IFIP Conference on Human-Computer Interaction. *Human-Computer Interaction – INTERACT '87*. (Stuttgart, Federal Republic of Germany, Sept. 1-4)
- Purwiati, E. (2013). Faktor-Faktor yang Mempengaruhi Adopsi E-Money (Studi pada Kartu BRIZZI BRI Cabang Cik di Tiro Yogyakarta). *Tesis*. Yogyakarta: Universitas Gadjah Mada.

- Rogers, E.M. (1995). *Diffusion of Innovation*. 4th edition, New York: The Free express.
- Schierz, P.G., Schilke, O., & Wirtz, B.W. (2009). Understanding Consumer Acceptance of Mobile Payment Service: An Empirical Analysis. *Journal of Electronic Commerce Research and Application*. Stanford University.
- Sekaran, U. (2006). *Research Methods for Business*. (edisi 4). Jakarta: Penerbit Salemba Empat.
- Thompson, R.L., Christoper A.H., & Jane M.H. (1991). "Personal Computing: Toward a Conceptual Model of Utilization.", *MIS Quartely*, March.
- Venkatesh, V., & Davis, F.D. (2000). A Theoretical Extension of The Technology Acceptance Model: Four Longitudinal Field Studies. *Management Science*, 46 (2), pp. 186-204.
- Venkatesh, V., & Bala, H. (2008). Technology Acceptance Model 3 and a Research Agenda on Interventions. *Journal Decision Sciences*. Vol. 38 (2), pp. 273-315.
- Waspada, I. (2012). Percepatan Adopsi Sistem Transaksi Teknologi Informasi untuk Meningkatkan Aksesibilitas Layanan jasa Perbankan. *Jurnal Keuangan dan Perbankan*, Vol. 16 (1), Januari 2012, hlm. 122-131.