FACTORS AFFECTING THE ADOPTION OF ELECTRONIC MONEY

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ABSTRACT

This paper aims at identifying and understanding factors affecting people in using e-money by applying Technology Acceptance Model (TAM) to analysis perceived by consumers. Data were analysis by using multiple regression analysis with SPSS 20. The primary data was collected from 174 valid questionnaires by using purposive random sampling and it is divided into several categories of gender, age, education and occupation in Malang. The result of the study showed that factors affecting the adoption of e-money significantly affected by perceived usefulness, perceived ease to use, and perceived benefit, while about 36 per cent is influenced by other factors. Therefore, in order reach widely used in e-money particularly in Indonesia we should consider several factors that affect consumer preferences.

Key words: E-money, Intention to Use, Perceived Usefulness, Technology Acceptance Model.

1. INTRODUCTION
The world's financial system existing today has developed and more sophisticated. The development of technology encourages the existing payment system. Decades ago, people tend to use conventional payment by using cash for their daily transaction. In its development, the noticeable movement from cash payment to non-cash payment has changed. In Indonesia context, the enlargement of the use of non-cash payments attempt to support the government's efforts to less cash society (Wulandari et al., 2016). National Movement of Non-Cash (GNNT) is officially announced in Indonesia, August 2014 by Central Bank of Indonesia (BI). This program breakthrough in order to improve a more secure and comfortable financial transaction for the whole society (Aslinawati et al., 2016). The current evolution of non-cash payment is electronic money (e-money). E-money has no physical cash involved with the third party (Kreltszheim, 1999).

World Bank (2012) defined e-money instruments as an access mechanisms to prefunded accounts held at banks or nonbank institutions that can be used undergo the Internet, payment cards, or smartphones. Those instruments have the prospective to further reduce paper-based payment instruments. Moreover, by noticeable using electronic payment such as debit card, credit card and electronic money in the larger number of consumers, particularly for unbanked and under-banked users.

The use of e-money for micro payment instruments has many advantages such as reducing money printing cost, increasing security, avoiding lost risk, and providing practicality in transaction for users (Bank Indonesia, 2006). Moreover, e-money usage is more efficient in reducing cost of holding cash money. The other advantages by using e-money as payment reduce the risks of money its self such as stolen, robbery and counterfeit money risk. In addition, society will avoid the rebates that often occur due to lack of money in small nominal. In contrast, Hataiseree (2008) remarked that cash instrument and cheques have widely acceptance as payment mode. This is understandable because some people feels not convinced of the advantages of using electronic money as mean of payment.

Since introduced in 2008, the use of electronic money in Indonesia has experienced an upward trend. In addition to the amount of e-money issued, the value and volume of transactions using e-money were also increased even though the use of e-money has not been outweigh current cash transactions. Indonesia is still in the phase of the introduction and being processed for acceptance by the wider community until in the end of e-money can equal or even be used more than transactions with cash money. The usage of non cash payment in Indonesia being lower differentiated to other ASEAN countries such as Thailand 97.2 per cent, Malaysia 92.3 per cent or Singapore 55.5 per cent respectively (Gerai info BI, 2014). In Indonesia itself, the transaction by using cash payment still dominated all transaction which encompass 99.4 per cent of total national transactions.

The usage of e-money in Indonesia has shown an upward trend even though it was dominated cash transaction. This is partly due to the fact that there are still the number people who understand the function and how to use non-cash instruments particularly, people in rural areas that have been reached by non-cash payment system service. In order to get the maximum achievement, it is necessary to understanding in advance about the factors that can attract consumers to use e-money effectively and efficiently.

A noticeable number of research has investigated electronic money from the consumer acceptances perspectives (Singh, 1999; Miliani et al, 2013; Fijiki & Tanaka, 2014; Salsabila & Giri, 2015; Priambodo & Prabawani, 2016; Ramadani, 2016; Wulandari et al., 2016;
Djamaluddin et al., 2016). Based on those previous studies, the factors in influencing perception of e-money are proposed. Djamaluddin et al. (2016) found that perception of beneficiaries towards e-money is relatively high, whilst Alriani et al. (2017) remarked that the advantages by using e-money provides the happy feeling and the satisfaction for users. This is reasonable because e-money make transaction more simple and easy just by using one card for all. However, some customers sometimes felt dejected when they experience with technical and the lack of network that often existed.

Dealing with the electronic money problem, Singh (1999) pointed that brief policy related to e-money will increase the widely use of e-money. Additionally, by providing the effectiveness of electronic money policy is highly acquaintances with the way the consumers looking at and use e-money. To understand, predict and explain why people accept and reject information system, researcher used Technology Acceptance Model (TAM). Technology Acceptance Model (TAM) is acceptance of technology can be forecasted by attitude and behavior usage of user. In the other word, Technology Acceptance Model is the concept that reflects the perceived ease of use and perceived of usefulness as an every single person believes toward using new technology. The individual remarks turn to their attitude toward use and brings to intention to use of new technology. In the term of perceived usefulness, it is defined as the expand to which a person believes that using a system will increase his or her job performance.

Several studies have revealed that a technology will be perceived as more advantages when it is easier to use (Spooner et al., 2008; Wang & Li, 2011; Williamson & Muckle, 2018). Perceived ease of use reflects to the degree to which people be convinced that using the system will be free of effort (Davis, 1989). In this term, the use of e-money is shown by the perspectives from individual in using e-money. In addition, both perceived ease of use and perceived usefulness are the main factors to explore the attitude and behavioral intention of customers in the TAM theory (Alagoz & Hekimoglu, 2012). Therefore, this paper explores factor affecting the consumer preferences to propose key factors in understanding consumer behaviour. This is critical issue because of the lack of understanding of people and its affect to the number of e-money users. By understanding comprehensively factors affecting the adoption of e-money, it proposes variable that be considered in order to increase the number of e-money usage.

2. RESEARCH METHOD

The quantitative method is used to verify the hypothesis and its impact of the independent variable namely perceived of usefulness, perceived ease of use, perceived benefit toward intention to use e-money using explanatory design.

The sample which chosen as the object of this research is the users of e-money in Malang consisted of a total of 174 respondents. While sample selection is done by using purposive sampling method, because samples are only the users who has used e-money banking product for making transaction at all merchants over Indonesia. The primary data is collected from respondents undergo questionnaires which is distributed to the samples in the research. This data covers the consumers’ intention to use e-money, perceived of usefulness, perceived ease to use, and perceived benefit. Multiple regression test employed to test the develop hypotheses. The Instrument of this research conducting likert scale that categorized, 1=strongly disagree, 2=disagree, 3=neutral, 4= agree, 5=strongly agree. The Multiple Regression formula is a follow:
Factors Affecting the Adoption of Electronic Money

\[ Y = a + b_1X_1 + b_2X_2 + b_3X_3 + e \]

Where:

\( Y \) = Intention to use e-money

\( X_1 \) = Perceived of usefulness

\( X_2 \) = Perceived of ease to use

\( X_3 \) = Perceived Benefit

Perceived of usefulness measured by indicator namely accomplish task more simply, e-money make people activities easier, saving time, and compare to other transaction payment. Perceived ease to use is measured from the use e-money such as e-money is easy for user to understand, easy to get the e-money, and other ease to use. Perceived of benefit related to the advantages were inquired of their perception of benefit of distribution of assistance fund by using the e-money system differentiated to through cash payment. The perception of benefit is measured by several indicators namely find e-money top up place, using e-money is easy, e-money more secure than cash and benefit of the use e-money.

![Figure 1 The relationship between variables](image)

**Hypotheses Development**

Based on the theoretical framework, previous studies and the development of model, the researcher formulates the following hypotheses:

H1: Perceived usefulness positively affects intention to use e-money

H2: Perceived ease to use positively affects intention to use e-money

H3: Perceived benefit positively affects to intention to use e-money

**3. RESULTS AND DISCUSSION**

The demographic of respondent is recognized by gender, age, education, occupation, expenses. Table 1. illustrates the total of 174 respondents, which consists of 73 males and 101 females. In general, e-money with the largest user was age between 26 to 30 years old, while the smallest user was about 2.9 per cent in age category elderly people. The occupation of majority respondents is civil servant by approximately 38 percent, being higher to slightly over 10 per cent than student. More specifically, private and public sector was about 24 percent and 21 percent respectively of total respondent, while home duty became the lowest percentages. The information about education’ e-money users is divided into four categories which is started from low educational level to higher education. The table showed the highest number of e-money users was bachelor degree, whilst the diploma degree became the lowest one was about 4.6 percent. To ensure the accurate results that are reflected in the research, the
115 respondents who have not used e-money are discarded from the sample size and leaving only 174 valid responses to be used for further analysis.

**Table 1** Demographic Characteristic of Respondents

<table>
<thead>
<tr>
<th>Variable</th>
<th>Total</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>73</td>
<td>41.9%</td>
</tr>
<tr>
<td>Female</td>
<td>101</td>
<td>58.1%</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Under 20</td>
<td>15</td>
<td>8.6%</td>
</tr>
<tr>
<td>21-25</td>
<td>51</td>
<td>29.3%</td>
</tr>
<tr>
<td>26-30</td>
<td>59</td>
<td>33.9%</td>
</tr>
<tr>
<td>31-35</td>
<td>32</td>
<td>18.4%</td>
</tr>
<tr>
<td>36-40</td>
<td>12</td>
<td>6.9%</td>
</tr>
<tr>
<td>41 and above</td>
<td>5</td>
<td>2.9%</td>
</tr>
<tr>
<td>Education</td>
<td></td>
<td></td>
</tr>
<tr>
<td>High School or Less</td>
<td>29</td>
<td>16.7%</td>
</tr>
<tr>
<td>Diploma degree</td>
<td>8</td>
<td>4.6%</td>
</tr>
<tr>
<td>Bachelor degree</td>
<td>94</td>
<td>54%</td>
</tr>
<tr>
<td>Postgraduate degree</td>
<td>43</td>
<td>24.7%</td>
</tr>
<tr>
<td>Occupation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Private sector</td>
<td>24</td>
<td>13.8%</td>
</tr>
<tr>
<td>Public sector</td>
<td>21</td>
<td>12%</td>
</tr>
<tr>
<td>Civil servant</td>
<td>66</td>
<td>38%</td>
</tr>
<tr>
<td>Student</td>
<td>47</td>
<td>27%</td>
</tr>
<tr>
<td>Home duty</td>
<td>16</td>
<td>9.2%</td>
</tr>
<tr>
<td>Use of E-Money</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Used</td>
<td>174</td>
<td>60%</td>
</tr>
<tr>
<td>Not Used</td>
<td>115</td>
<td>40%</td>
</tr>
</tbody>
</table>

### 3.1. Result of Regression Analysis

Prior to further more analysis, validity and reliability test are required test for multiple linear regression with primary data. The reliability and validity test use to measure if the estimation tools produce stable, consistent and valid result. Based on Nunnaly Criteria (1960), research variables pronounced to be reliable if the number of Cronbach’s Alpha based on standardized item are more than 60 per cent. Both of independent and dependent variables used in this research have high Cronbach’s alpha, separately independent variable has 93 per cent and dependent variable has 76 per cent. Moreover, validity test also statistically show significant result for each item in the questionnaire. This test result indicates that regression analysis could be proceed in the next step.

**Table 2** Perceived of usefulness, Perceived of ease to use and Perceived Benefit to Intention to use e-money

<table>
<thead>
<tr>
<th>Coefficients</th>
<th>T</th>
</tr>
</thead>
<tbody>
<tr>
<td>X1</td>
<td>0.299</td>
</tr>
<tr>
<td>X2</td>
<td>0.431</td>
</tr>
<tr>
<td>X3</td>
<td>0.171</td>
</tr>
<tr>
<td>R Square</td>
<td>0.646</td>
</tr>
<tr>
<td>Adj R Square</td>
<td>0.640</td>
</tr>
</tbody>
</table>

*Significant at 10%; **significant at 5%; ***significant at 1%.

Table 2 provides the regression analysis of the correlation between perceived of usefulness, perceived of ease to use and perceived benefit to Intention to use of e-money. The coefficient of determination (Adjusted R-Square) obtained at 0.640 level, Illustrates that 64 per cent of Intention to use e-money (Y) is simultaneous affected by the perceived of usefulness (X1), Perceived Ease of Use (X2), Perceived benefit (X3) and the other 36 per cent of the residual influenced by other factors which does not included in the research.
3.2. The Influence of Perceived Usefulness toward Intention to Use E-Money

The e-money properties should be simple and easy to understand because the technological advances and financial literacy level in Indonesia are low categories (Wulandari et al., 2016; Mori & Zimmer, 2015). The simplicity of access of information system and technology could significance its usefulness and user’s attitude. It can be shown that perceived of usefulness which was submit initial findings about the impact of perceived usefulness toward intention to use E-Money. The result show that perceived of usefulness has a positive in associated with intention of e-money used and is statistically significant at the 5 per cent level. The coefficient number 0.299 shows that 29 per cent. In this research, the perceived usefulness of e-money was found substantially affecting stance to use it.

The research was in acquaintance with the existing TAM studies (Emaelzadeh, 2016). It reveals that the simplicity of e-money will contribute to increase in the usage of e-money. People tend to accept new technology that very useful for their daily activities. Moreover, the level of awareness people will increase the understanding of e-money usefulness such as transferring money easily and safely in affordable price. For this reason, the banking service providers should also overcome to incorporate appearances that customers find useful. Furthermore, the banking service providers have to ensure that there should be aware and concentrated in order to spread out the essence of usefulness of e-money to every single person undergo good socialization and marketing strategy.

3.3. The Influence of Perceived Ease to Use toward Intention to Use E-Money

Technology has changed individual life and more useful when it is easier to use. From the findings, it can be seen at the result of statistics test that ease of use also has a positive relation and statistically significant at the 5 per cent level toward intention to use e-money. In more specifically, the number of the coefficients is 0.431 point which is has the meaning that while increasing 1 point in the ease of use e-money, it will significantly boosting 43 per cent of the usage of e-money. This result supports the research by Priambodo & Prabawani (2016) which founds that perceived ease of use had a significant positive effect on the behavioral intention of Indonesian in using e-money. People has more widely accepted when it is easy to use. It has remarked by numerous studies (Venkatesh & Davis, 2000; Spooner et al., 2008; Wang & Li, 2011; Williamson & Muckle, 2018). However, the lack of understanding and financial literacy level has the critical issue in Indonesia.

Even though the ease of use showed the second highest overall mean scores, this factor has been discovered to be acquaintance with purchasers’ perception toward e-money and the result is remarkable significant. The respondents believe that the e-money channels are friendly user with easy to understand structure, properties adn how to use. It supports previous studies conducted by Abrazhevitich (2001) and Pikkarainen et al. (2004) which found that the convience to understand to use e-money where only minimum attemps are compulsory. The tutorials contributed are very clear to be followed and the step by step neccesitate to attain a transaction have been reduced to the smallest possible for the appropriateness of users. Due to the fact that some providers have also provides manual guidance to their users on how to use the variety of e-money. To some degree, ease of use grants the participants to believe that people is capable of their transaction.

3.4. The Influence of Perceived Benefit toward Intention to Use E-Money

As the same findings with the perceived of usefulness and perceived of ease to use, perceived of benefit also positively associated with the usage of money used and is statistically significant at the 5 per cent rates. The coefficient number of this variable is the lowest
between two another variables which is only 17 per cent, which correspondents with the lowest correlation and β-values. Perceived of benefit has less significant driver of e-money usage which the result found supports from preceding studies (Sumanjeet, 2009; Miliani et al., 2013). It means that used e-money as payment method provides the advantages of e-money that saving their time, ease of use, more efficient, and secure than cash payment. The distinctive of e-money reinforced that interoperability, portable, reliability, flexibility, convertibility, efficiency, ease of alliance with applications, and ease of use are what customer perceived when using electronic money as payment method for daily use.

4. CONCLUSIONS

The findings of the research indicate that the factors affecting the using e-money namely perceived usefulness, perceived ease to use, and perceived benefit affects significantly to intention to use e-money. In more detail, perceived usefulness had the largest contribution to intention to use e-money, while perceived benefit has the lowest. Simultaneously, the three variables had the positive influence toward intention to use e-money. In order to improve the number of e-money user there are still other factors that influence the intention of using e-money such as access among merchants that provide e-money facilities, security enhancement of e-money, socialization the benefits, and improve financial literacy of people.

REFERENCES

Factors Affecting the Adoption of Electronic Money