Proceedings of
the 29th International Business Information Management Association Conference

3-4 May 2017
Vienna Austria

ISBN: 978-0-9860419-7-6

Education Excellence and Innovation Management through Vision 2020:
From Regional Development Sustainability to Global Economic Growth

Editor

Khalid S. Soliman

International Business Information Management Association (IBIMA)

Copyright 2017
Mobile Money for Micro-Scale Business? The Role of Attitude, Perceived Credibility, Self-Efficacy, and Perceived Security

Usup Suhud  
Faculty of Economics, Universitas Negeri Jakarta, Indonesia  
usuhud@unj.ac.id

Nuradin Hidayat  
Faculty of Economics, Universitas Negeri Jakarta, Indonesia  
nurudinhidayat@unj.ac.id

Dedi Purwana  
Faculty of Economics, Universitas Negeri Jakarta, Indonesia  
dpurwana@unj.ac.id

Abstract

Mobile money is a financial service that is used to make a payment and money transfer among users – customer to customers, business to customers, or customers to business – using a mobile phone. This technology is popular in African countries and some Asian countries. In Indonesia, this mobile money has been introduced, both by bank and telecommunication industries since 2011. This study aims to measure factors to influence micro-scale business owners to use mobile money for business transactions. Predictors variables are applied including perceived security, perceived credibility, self-efficacy, and attitude towards the concept of mobile money. This study involved 181 micro-scale business owners in Jakarta. Data was analysed using exploratory and confirmatory factor analyses as well as structural equation model. The result showed that only perceived credibility and self-efficacy had a significant impact on behavioural intention to use mobile money. Two alternative models are examined. Mobile money is appropriate for micro-scale businesses in Indonesia with a condition.

Keywords: Mobile money, perceived credibility, perceived security, self-efficacy, behavioural intention

1 Introduction

In African countries, the implementation of mobile money in daily lives was organised by the telecommunication providers and it became a trend among societies. In general, to apply mobile money, it requires users to own a mobile phone for receiving and delivering money. Mobile phone is also required to use financial services like m-banking, m-payments, m-transfers, m-payments, and m-finance (Donner and Teliez 2008). In Indonesia, this mobile payment system was introduced both by telecommunication and banking industries (Joyce 2013). Although there was a potential growing (Dharmasaputra and Rahayu 2011), unfortunately, some constraints occurred causing this payment system unwell developed (Endah 2016). One of the constraint was, there was disagreement between the banks and telecommunication companies over who was the most entitled to handle mobile money (Firdaus 2011). The banking companies thought that mobile money should be handled by banks as it related to payment system. On the other hand, the telecommunication provider companies assumed that it should be their business as to operate this, consumers used a mobile phone and mobile system. As a consequence, for some time, none of these parties optimised mobile money payment system.

In 2013 when the authors started a research on this topic, the term of mobile money was still unfamiliar among micro-scale business owners and the concept was still unreasonable (Suhud and Hidayat 2014). It was difficult for them imagining changing their habits relating to purchase and pay wage from cash to transfer using mobile phone. At that moment, there were attempts of banks and
telecommunication providers including BlackBerry to offer this. Unfortunately, their efforts were stagnant, even some were discontinued.

This study is addressed to answer a question about what factors that could influence consumers' behavioural intention to use mobile money. In general, behavioural intention relating to mobile payment, mobile banking, and other mobile services can be influenced by PU, PEOU, perceived value, self-efficacy, and motivation (Kim, Kim et al. 2013; Hsu and Lin 2015). For this current study, the authors select four predictor variables, including perceived credibility, self-efficacy, perceived credibility, and attitude towards usage. Therefore, this study aims to examine the impact perceived credibility, self-efficacy, perceived security, and attitude towards usage on behavioural intention to use mobile money.

Study on mobile money in an Indonesian and Southeast Asia setting is limited so far. Therefore, this study will make a huge contribution for the field study of finance, financial inclusion, mobile money, and financial marketing.

2 Literature Review

2.1 Theoretical background

2.1.1 Perceived credibility and behavioural intention

Perceived credibility is a believe that the use of a certain technology will not affect personal security and privacy (Wang, Wang et al. 2003). In the banking industry, Ramayah, Malhotra et al. (2006) tested and found that there was a significant impact of perceived credibility on behavioral intention to use internet banking. Ernovianti, Kamariah-Nik-Mat et al. (2012) focussed on behavioural intention of internet banking service among university students in Malaysia. They demonstrated a significant effect of perceived credibility on behavioral intention. Other studies also reported that perceived credibility significantly impacted behavioural intention Ahad, Dyson et al. (2012), Aziff, Yeow et al. (2012), Ndubisi (2007), and Eze, Manyeki et al. (2011). The same result was also carried out by (Daud, Kassim et al. 2011; Yu 2012; Talukder, Quazi et al. 2014).

All studies discussed above showing a significant impact of perceived credibility on behavioural intention. Different results were documented by Suhud and Hidayat (2015). These scholars claimed that there was insignificant impact from one variable to another.

2.1.2 Self-efficacy and usage intention

Self-efficacy has an important role in one's behavioural change (Bandura and Adams 1977). In this current study, self-efficacy is defined as a one's belief and ability to change his or her behaviour relating to a payment habit, from cash to mobile money. According to Bandura (1977), self-efficacy has four dimensions including performance accomplishments, vicarious experience, verbal persuasion, and physiological states.

Self-efficacy was used by prior studies to predict, for example, PU, PEOU, trust, perceived of risk, attitude, behavioural intention, and actual usage (Mun and Hwang 2003; Hsu and Chiu 2004; Alalwan, Dwivedi et al. 2015; Alalwan, Dwivedi et al. 2016; Makki, Ozturk et al. 2016).

Makki, Ozturk et al. (2016) paid attention on the behavioural intention of restaurants patronage to use mobile payment system while Alalwan, Dwivedi et al. (2015) focussed on consumers' adoption of internet banking. These two studies confirmed that self-efficacy positively and significantly affected behavioural intention. Furthermore, Luann and Lin (2005) researched behavioural intention of mobile banking. In the model testing, perceived usefulness, perceived ease of use, perceived credibility, perceived self-efficacy, and perceived financial cost were employed. These scholars empirically demonstrated that self-efficacy affected behavioural intention.

Furthermore, taking place in Hong Kong, Khalifa and Ning Shen (2008) predicted mobile commerce adoption. In that study, self-efficacy significantly affected ease of use and behavioural intention.
other two studies, that were conducted by Njuguna, Ritho et al. (2012) and Sentosa, Ming et al. (2012) reported that self-efficacy had a significant influence on behaviour intention.

2.1.3 Perceived security and usage intention

Jeong and Yoon (2013) studied consumers' intention to adopt m-banking. In their model, two of predictor variables they employed were perceived credibility and self-efficacy. They found that these two variables had a significant influence on adoption intention. Furthermore, the researchers divided their data into two different groups: m-banking users and non-users. For m-banking users, both perceived credibility and self-efficacy had no influence on their technology adoption whereas for non-users, only perceived credibility that influenced m-banking technology adoption.

Other researchers selected perceived security and showed this variable significantly affected behavioural intention. Oliveira, Thomas et al. (2016) opted perceived security as one of the variables to examine behavioural intention to use mobile payment. Hanafizadeh, Behboudi et al. (2014) while Wang, Lin et al. (2006) investigated the intention of consumers to use mobile banking. Both these studies documented a significant impact of perceived security on behavioural intention. Furthermore, Shin (2009) studied the acceptance of mobile wallet. In their study, behavioural intention was tested by social influence, perceived security, attitude, trust, and self-efficacy. This scholar found that only perceived security, attitude, and trust that impacted behavioural intention significantly.

Another study on mobile banking was conducted by Goh and Sun (2014). These scholars looked at the acceptance of Islamic mobile banking users and found different results from the findings discussed above. Those scholars found that perceived credibility insignificantly impacted behavioural intention.

2.1.4 Attitude and behavioural intention

Attitude is an important variable installed in prominent behavioural theories like Theory of Reasoned Action, Theory of Planned Behaviour, and Technology Acceptance Model (Ajzen and Fishbein 1974; Davis, Bagozzi et al. 1989; Ajzen 1991). These theories have been adopted and adapted in the marketing field. Most of studies showed a positive and significant impact of attitude on behavioural intention including on mobile payment systems.

Existing studies tested the impact of attitude on behavioural intention relating to mobile payment systems. In Chauhan (2015)'s study, attitude was tested to be influenced by trust, PU, and PEOU whereas attitude was linked to behavioural intention to use mobile money by unfortunate people in India. Four hypotheses tested were significant including the impact of attitude on behavioural intention. Attitude was also a variable employed by Chen, Luhhofer et al. (2013) to predict behavioural intention. Both studies documented the significant effect of attitude on behavioural intention. In addition, Mallat, Rossi et al. (2009) tested consumers' intention to adopt mobile payment services. Those studies demonstrated that attitude towards usage affected behavioural intention.

Although the studies discussed above mentioning a significant impact, Suhud and Hidayat (2015), presented a different finding. They found that attitude had an insignificant impact on behavioural intention.

2.2 Theoretical framework and hypotheses

A figure below presents theoretical framework based on the literature discussed above. This model is designed to predict mobile money usage intention among micro business owners in Jakarta. As mentioned earlier, in this current study, the authors select perceived credibility, self-efficacy, perceived security, and attitude towards usage as predictor variables.
Fig 1. The theoretical framework

Based on the framework above, here are six hypotheses to be tested as follows:

\( H_1 \) Perceived credibility will positively and significantly influence intention to adopt mobile money
\( H_2 \) Self-efficacy will positively and significantly influence intention to adopt mobile money
\( H_3 \) Perceived security will positively and significantly influence intention to adopt mobile money
\( H_4 \) Attitude towards mobile money adoption intention will positively and significantly influence intention to adopt mobile money.

3 Methods

3.1 Participants

Participants for this study were approached conveniently those who owned a micro-scale business: manufacturer, service or both. In total, 181 micro-scale business owners participated in the study consisting of 60 (33.1%) males and 74 (40.0%) females. The rest of participants did not identify their sex.

Predominantly, the age of participants was between 26-30 years old (13.8%), followed by 36-40 years old (11%) and 46-50 years old (9.9%). In term of marital status, 100 participants (55.2%) indicated there were married/de facto, 67 participants (37.0%) were unmarried, and the rests were separated, widows, and widowers.

When they were asked about level of education they have completed, 91 participants (50.3%) completed their secondary degree, 53 participants (29.3%) completed tertiary (under grad) degree, and the rests completed elementary, diploma, and post grad degree.

A hundred twenty participants (66.3%) claimed that they hired one to five full time employees to help and 56 of them (30.9%) hired part time employees. Furthermore, predominant participants mentioned that they paid wages for their employees in cash (131= 72.4%), instead of bank transfer (12= 6.6%), and others.

Regarding stage of readiness to adopt mobile money, 99 participants (54.7%) never heard the term of 'mobile money'. Besides, 35 participants (19.3%) have heard previously in the time the survey was conducted and were interested to adopt whereas 27 participants (14.9%) have heard but were not
interested to adopt. Ten of participants (5.5%) were seeking information relating to mobile money and the rests were in the different stages of adoption, such as have installed the application but have never used, currently using, and have used and stopped.

3.2 Measures

As a part of validity, the authors employed items that have been tested by prior studies. Perceived credibility was measured using items adapted from Ahdad, Dyson et al. (2012), Luarn and Lin (2005), Koenig-Lewis, Palmer et al. (2010), and Sun, Cao et al. (2010) while perceived security was measured by items from HAUFF and Nasri (2011). Further, self-efficacy was measure using items adapted from Ahdad, Dyson et al. (2012) and Luarn and Lin (2005) as well as from (Suhud and Hidayat 2014). To measure attitude towards mobile money adoption, items were adapted from Nysveen, Pedersen et al. (2005) and Suhud and Hidayat (2014). Lastly, items from Nasri (2011), Yu (2009), and Zhou (2011) were adapted to measure intention to adopt mobile money.

3.3 Data analysis

There were three steps applied to analyse the data. In the first step, exploratory factor analysis (EFA) was conducted to established dimensions if any and obtain only items with factor loadings of 0.4 or greater (Hair Jr., Black et al. 2006). The second step was to conduct a reliability test for each construct resulted by exploratory factor analysis. In this study, only constructs with a score of 0.7 and greater were included for further analysis (Hair Jr., Black et al. 2006).

The third step was confirmatory factor analysis (CFA) to measure fitness of all constructs and the last step was to conduct structural equation model (SEM). The objective of structural equation model (SEM) was to test the theoretical framework. A model is considered fitted if it has a probability score of 0.05 (Schermelleh-Engel, Moosbrugger et al. 2003), a CMIN/DF score of ≤ 2 (Tabachnick and Fidell 2007), a CFI score of ≥ 0.97 (Hu and Bentler 1995), and a RMSEA score of ≤ 0.05 (Hu and Bentler 1999).

4 Results and discussion

4.1 Exploratory factor analysis

EFA calculation produced six components including usage intention as the first dimension, with eight of 14 items retain. This dimension has a Cronbach’s alpha score of 0.944. The second and sixth factors are two dimensions of attitude towards mobile money usage intention: the mobile money benefit consists eight items with Cronbach’s alpha of 0.901 and the concept of mobile money consists of two items with Cronbach’s alpha of -0.540. The third factor is perceived credibility that retains four items. It has a Cronbach’s alpha score of 0.863. The fourth and fifth factors belong to perceived security (security and risk). The first dimension of perceived security has a Cronbach’s alpha score of 0.603 while the other one’s score of 0.842. Both dimensions contain two items.
### Table 1: Result of EFA

<table>
<thead>
<tr>
<th>Intention to adopt</th>
<th>$a$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Int. 4 I would suggest my employees to use mobile money</td>
<td>0.843</td>
</tr>
<tr>
<td>Int. 3 I would use mobile money in a regular basis</td>
<td>0.833</td>
</tr>
<tr>
<td>Int. 2 I would suggest mobile money to other business owners</td>
<td>0.820</td>
</tr>
<tr>
<td>Int. 1 I would use mobile money as soon as possible</td>
<td>0.812</td>
</tr>
<tr>
<td>Int. 6 I plan to use mobile money in the future</td>
<td>0.796</td>
</tr>
<tr>
<td>Int. 5 I would oblige my employees to use mobile money</td>
<td>0.784</td>
</tr>
<tr>
<td>Int. 7 If possible, I would try to use mobile money</td>
<td>0.756</td>
</tr>
<tr>
<td>Int. 8 I would try to use mobile money if I consider that it is necessary</td>
<td>0.625</td>
</tr>
<tr>
<td><strong>Self-efficacy (1) Assistance</strong></td>
<td>$a$</td>
</tr>
<tr>
<td>SF. 2 I have been to a course that taught people how to use mobile money first</td>
<td>0.837</td>
</tr>
<tr>
<td>SF. 1 I (will) get someone to help install the mobile money application (or install facilities/feature) on my mobile phone</td>
<td>0.808</td>
</tr>
<tr>
<td>SF. 3 I have seen someone else using mobile money before I try it</td>
<td>0.796</td>
</tr>
<tr>
<td><strong>Perceived credibility</strong></td>
<td>$a$</td>
</tr>
<tr>
<td>PC. 4 Mobile money is safe to be used</td>
<td>0.836</td>
</tr>
<tr>
<td>PC. 3 I believe in the mobile money ability to protect my personal information</td>
<td>0.833</td>
</tr>
<tr>
<td>PC. 2 I think that doing online transactions through mobile money would avoid unexpected problems</td>
<td>0.832</td>
</tr>
<tr>
<td>PC. 1 Using mobile money service would not divulge my personal information</td>
<td>0.747</td>
</tr>
<tr>
<td><strong>Self-efficacy (2) Support</strong></td>
<td>$a$</td>
</tr>
<tr>
<td>SF. 6 If there is an incentive provided by the company for using mobile money</td>
<td>0.881</td>
</tr>
<tr>
<td>SF. 7 I agree that mobile money is a cost-effective way to transact</td>
<td>0.816</td>
</tr>
<tr>
<td>SF. 5 The government recommends mobile money to be used by manufacturer workers</td>
<td>0.633</td>
</tr>
<tr>
<td><strong>Perceived security (1) Security</strong></td>
<td>$a$</td>
</tr>
<tr>
<td>PS. 4 The authorised username and password are important.</td>
<td>0.836</td>
</tr>
<tr>
<td>PS. 5 Trust affects the demand for mobile money services</td>
<td>0.785</td>
</tr>
<tr>
<td><strong>Perceived security (2) Risk</strong></td>
<td>$a$</td>
</tr>
<tr>
<td>PS. 2 The risk of abuse of confidential information is low when using mobile money service</td>
<td>0.842</td>
</tr>
<tr>
<td>PS. 1 The risk of an unauthorized third party overseeing the payment process is low.</td>
<td>0.718</td>
</tr>
</tbody>
</table>

#### 4.2 Confirmatory factor analysis

#### 4.2.1 Hypotheses testing

The structural model below inspects the theoretical framework and results a fitted model. This model has a probability score of 0.139, CMIN/DF score of 1.149, CFI score of 0.988, and RMSEA score of 0.029. The results show that this calculation accept two ($H_1$ and $H_2$) of four hypotheses.
The first hypothesis predicts the impact of perceived credibility on behavioural intention to use mobile money. This path has a C.R. score of 3.332 indicating this is significant. Therefore, H₁ is accepted. This finding is significant with prior studies (Daud, Kassim et al. 2011; Ahad, Dyson et al. 2012; Ariff, Yeow et al. 2012; Talukder, Quazi et al. 2014). Participants considered that mobile money was credible so that they had an intention to use it. In line with this, credibility of a mobile payment system is important as it can influence other variables, such as perceived usefulness and perceived ease of use (Wu, Wang et al. 2007).

The second hypothesis predicts the impact of self-efficacy on behavioural intention. The result indicates that this path has a C.R. score of 2.647 and this is significant. Therefore, H₂ is accepted. This finding supports prior studies (Njuguna, Ritho et al. 2012; Sentosa, Ming et al. 2012; Alalwan, Dwivedi et al. 2015; Makki, Ozturk et al. 2016). Participants revealed that it would be easy and beneficial using mobile money as their friends would help. Besides, they thought that there would be a recommendation and incentive from an authority and provider.

The third and fourth hypotheses predicts the impact of perceived security on behavioural intention and attitude on behavioural intention respectively. These two path has C.R. scores of -0.377 and -0.084 respectively. The results are expected to be positive and greater than 1.96. Therefore, H₃ and H₄ are rejected. To understand why these results occur, the authors decide to develop and test two alternative models as presented below.

Table 2: SEM results

<table>
<thead>
<tr>
<th>Hᵢ</th>
<th>Perceived credibility</th>
<th>Intention</th>
<th>C.R.</th>
<th>P</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>H₁</td>
<td>Perceived credibility</td>
<td>Intention</td>
<td>3.332</td>
<td>***</td>
<td>Significant</td>
</tr>
<tr>
<td>H₂</td>
<td>Self-efficacy</td>
<td>Intention</td>
<td>2.647</td>
<td>0.008</td>
<td>Significant</td>
</tr>
<tr>
<td>H₃</td>
<td>Perceived security</td>
<td>Intention</td>
<td>-0.377</td>
<td>0.706</td>
<td>Insignificant</td>
</tr>
<tr>
<td>H₄</td>
<td>Attitude</td>
<td>Intention</td>
<td>-0.084</td>
<td>0.933</td>
<td>Insignificant</td>
</tr>
</tbody>
</table>
4.2.2 Alternative models

In the first alternative model, attitude is dropped. Perceived credibility is linked directly to self-efficacy, and intention while perceived security is linked to self-efficacy, and self-efficacy is linked to intention. In this model, self-efficacy is treated as a mediator variable for perceived credibility and perceived security to link. The fitness of this model is confirmed with probability, CMIN/DF, CFI, and RMSEA scores of 0.578, 0.946, 1.000, and 0.000 respectively.

Fig 3. The first alternative structural model

Based on the calculation above, all paths are significant with a C.R. score greater than 1.96 as required (Hair Jr., Black et al. 2006). The first clue is obtained that attitude is the problem caused two hypotheses are rejected in the theoretical framework inspection.

Table 3: SEM results of the first alternative

<table>
<thead>
<tr>
<th></th>
<th></th>
<th>C.R.</th>
<th>P</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Perceived-credibility</td>
<td>→</td>
<td>Self-efficacy</td>
<td>3.424</td>
</tr>
<tr>
<td>2</td>
<td>Perceived-credibility</td>
<td>→</td>
<td>Intention</td>
<td>3.632</td>
</tr>
<tr>
<td>3</td>
<td>Perceived security</td>
<td>→</td>
<td>Self-efficacy</td>
<td>3.304</td>
</tr>
<tr>
<td>4</td>
<td>Self-efficacy</td>
<td>→</td>
<td>Intention</td>
<td>3.186</td>
</tr>
</tbody>
</table>

In the second alternative model, self-efficacy is treated as an independent variable to be connected to perceived credibility and intention. Attitude is recalled but there is no connection was built between attitude and intention. The second alternative model achieves a fitness with a probability score of 0.195, CMIN/DF score of 1.114, CFI score of 0.991, and RMSEA score of 0.025.
The second alternative model produces six significant paths. All paths have a C.R. with greater than 1.96. Four paths have a positive direction and another two have a negative direction. These negative directions occur caused by attitude. The authors (Suhud and Hidayat 2014) revealed unfavourable attitude of business owners towards the concept of mobile money. This fact could be an explanation why in the theoretical framework testing attitude is insignificant to influence behavioural intention.

Table 4: SEM results of the second alternative model

<table>
<thead>
<tr>
<th></th>
<th>Path</th>
<th>C.R.</th>
<th>P</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Self-efficacy → Perceived credibility</td>
<td>4.195</td>
<td>.001</td>
<td>Significant</td>
</tr>
<tr>
<td>2</td>
<td>Self-efficacy → Intention</td>
<td>3.191</td>
<td>.001</td>
<td>Significant</td>
</tr>
<tr>
<td>3</td>
<td>Self-efficacy → Perceived security</td>
<td>3.841</td>
<td>.001</td>
<td>Significant</td>
</tr>
<tr>
<td>4</td>
<td>Perceived credibility → Intention</td>
<td>3.496</td>
<td>.001</td>
<td>Significant</td>
</tr>
<tr>
<td>5</td>
<td>Perceived credibility → Attitude</td>
<td>-2.894</td>
<td>.004</td>
<td>Significant</td>
</tr>
<tr>
<td>6</td>
<td>Perceived security → Attitude</td>
<td>-2.506</td>
<td>.012</td>
<td>Significant</td>
</tr>
</tbody>
</table>

5 Conclusion

This study aims to measure the impact of perceived credibility, self-efficacy, perceived security, and attitude towards the concept of mobile money on intention to use mobile money as payment system. The participants were micro-scale business owners in Jakarta. In total, there are three models tested. The first model is the theoretical framework. In this attempt, two hypotheses are significant including the impact of perceived credibility on behavioural intention, and self-efficacy on behavioural intention.
The second model is the first alternative model. Four paths are tested and showing significance. Perceived credibility significantly affects self-efficacy and behavioural intention. Furthermore, perceived security significantly affects self-efficacy, and self-efficacy significantly affects behavioural intention.

This study fills in the gap of literature, particularly on consumer behaviour relating to mobile money usage in Indonesia even in Southeast Asia (Pickens 2009; Hidayati 2011; Suhud and Hidayat 2015). Research with the topic of mobile money in Indonesia more focussed on electronic money using a card-type instead (Sigar 2016; Wulandari, Soseco et al. 2016).

Practitioners might target micro-scale business owners to support ecosystem of mobile money (Jenkins 2008). By providing access to this payment system, they would encourage their customers and suppliers to use mobile money. As indicated by the findings, mobile money providers are required to assist these business owners in training how to operate devices and application needed. The most important thing is, to change attitude of them. By giving education and proper information, it would make them obtaining not just favourable attitude, but also it would increase perceived credibility, perceived security, and self-efficacy.

References


Dharmasaputra, K. and N. Rahayu (2011) "Mobile-Money M-Pesa suitable for Indonesia" analysis (in Bahasa Indonesia).


Sustainable Economic Growth, Education Excellence, and Innovation Management (through 2022).


