

INTENTION TO USE MOBILE COMMERCE IN INDONESIA WITH TECHNOLOGY ACCEPTANCE MODEL APPROACH

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Abstract

The increasing number of internet users, especially the smartphone, has resulted in an increased e-commerce business. However, it is not comparable to the number of mobile commerce users in Indonesia because most of them still use e-commerce websites through their personal computers to make online transactions. The purpose of this research was to find out the individual acceptance of information systems using the Technology Acceptance Model (TAM) approach through the Perceived Usefulness (PU) and Perception Easy of Use (PEOU) variables on the intention to use the mobile commerce in Indonesia. Comprehensive literature and questionnaires were conducted as the research method. The number of samples obtained is 400 people analysed using descriptive statistics and Structural Equation Modeling (SEM). A structural equation model that assessed the relationship between the proposed variables was tested by using AMOS. The results of numerical simulation indicate that perceived easy of use and the perceived usefulness are positively affected. The perceived usefulness gives a stronger influence rather than perceived easy of use.

Keywords: Intention to use, Mobile commerce, Perceived easy of use, Perceived usefulness, Technology acceptance model.

1. Introduction

The growth of internet usage is increasing rapidly and is projected to be 18.9 percent of the world population [1]. The high number of internet users has resulted in an increased e-commerce business. Business transactions that occur on the internet electronic network, accessible to anyone, have a connection to the internet and how to pay for goods purchased and participate in them are known as electronic commerce or e-commerce [2, 3]. In the case of buying and selling activities, e-commerce as a means of sharing information, relationships and business transactions through telecommunications networks taking into account various organizational business processes [4]. E-commerce is used to enhance traditional market channels by opening a web-based storefront so that the term "business to consumer ecommerce" is also known where the products and services produced by the organization are offered directly to their customers by providing interesting information/advertisements according to the needs and desires of visitors on their websites [5]. In terms of reaching the smartphone user market, e-commerce develops into mobile commerce.

The use of wireless handheld devices such as smartphones and Personal Digital Assistants (PDAs) in buying and selling goods and services is known as mobile commerce (M-commerce) [6]. M-commerce is part of e-commerce because it supports mobile electronic business transactions with the mobile nature of the wireless environment [7].

However, in Indonesia, the comparison of the consumers who visit e-commerce websites with users of mobile commerce applications is still not optimal. The low number of mobile commerce application users can be seen from the percentage of 2.4% compared to the number of consumers who use e-commerce websites. The data generally shows that e-commerce start-up sales transactions in Indonesia are more often done through websites or desktop not use by downloading mobile commerce applications and also conducting transactions online using a smartphone (www.dailysocial.net). Besides, the 2014 consumer lab Ericsson consumer insight summary report stated that customer interests in mobile commerce applications usage in Indonesia are still low. Most consumers still have limited knowledge about mobile commerce applications (www.marketing.co.id). The lack of experience and knowledge of buying and selling transactions using mobile commerce applications makes consumers prefer to visit e-commerce websites using a PC or laptop. Consumers only use their smartphones to get information about products but do not make purchases using mobile commerce applications [8].

The low of mobile commerce applications usage by consumers in the process of buying and selling in the online platform is one of due to a lack of interest in mobile commerce applications usage. Ling et al. [9] state that consumers who have an interest in buying and selling in the online platform environment will determine someone's interest in terms of behavioural-determined purchases through the internet. In the e-commerce industry, buying interest has a considerable influence on the tendency of consumers to do online shopping activities because consumers' high interest will encourage consumers to make purchasing decisions for a product.

The interest in using a mobile commerce application is a description of the theory of buying interest. Research on consumer buying interest has been carried out in various industries such as retail industry [10], games industry [11], cosmetics industry [12, 13], the food industry [14, 15] and the tv program industry [16], e-

commerce industry [17, 18], online transportation industry [19], etc. The interest in buying has gained considerable attention in the e-commerce industry [20]. Where buying interest is considered an essential factor in the scope of the e-commerce industry, which gives a considerable influence on the tendency of consumers to do online shopping activities. Buying interest is closely related to consumer decisions while an individual has a high buying interest, there will be a purchasing decision that ends in a purchase so that the company can increase the sales rate [21, 22]. Researching buying interest in the e-commerce industry will be able to indicate consumer behaviour in online transactions [23].

Wu and Wang [24] suggested that when a consumer is interested in online shopping using a mobile commerce application, there are several things that consumers will consider. Perceived usefulness, ease of perceived usage, social influence, trust, and cost perception influence interest in using mobile commerce. Perceived easy of use has a significant influence in terms of buying interest because of the higher perceived easy of use it will be higher the consumer's buying interest. When consumers feel that a product is easy to understand and used, it tends to be interested in using the product [25].

Perceived usefulness is part of the attitude toward the act in the Technology Acceptance Model (TAM) developed by Davis et al. [26], which uses two key variables perceived easy of use and perceived usefulness that has central relevance to predict acceptance of IT towards technology. Research related to technology acceptance model has been done previously by Trivedi and Kumar [27]; Yolanda and Widijoko [28]; Wibisono [29]; Dwitasari and Baridwan [30]; Latifah and Afifah [31]; Hanafi [32]; Sutomo [33]; Zarrad and Debabi [34]; Ramayah and Ignatius [35]; Pavlou et al. [36]; and Monsuwé et al. [37].

Perceived easy of use as someone's level of confidence in using a system so that it does not need to spend hard effort. Whereas perceived usefulness is at another level where someone believes that in using a specific system free from a particular business through the process of enhancing specific applications that are not confusing, clear, and easy to understand. One part of online consumer behaviour developed from the realm of psychology is related to the attitude of acceptance of a technology [38].

Thus, the purpose of this research was to find out the picture of personal acceptance of information systems using the technology acceptance model approach through the Perceived Usefulness (PU) and Perception Easy of Use (PEOU) variables on the intention to use mobile commerce in Indonesia.

2. Method

This study uses primary and secondary research methodologies. In primary research, the authors found more specific data regarding the description of individual acceptance of information systems with the technology acceptance model approach through the Perceived Usefulness (PU) and Perception Easy of Use (PEOU) variables so that individuals can predict behavioural intention (BI) especially in intent on using mobile commerce through a questionnaire.

The dimensions of Perceived Easy of Use (PEOU) used in this study are (1) the system is clear and understandable (easy to understand), (2) does not require a lot of mental effort (effortless), (3) easy to use the system [39-42]. While the dimensions of Perceived Usefulness (PU) used to consist of 1) Performance, 2) Effectiveness, and

3) Productivity [40, 43, 44] and the dimensions of interest in use consist of 1) product characteristics, 2) attention, 3) interests, and 4) desires [45, 46].

On the other hand, secondary research supports theories of cases examined from a broader perspective. The sources used are books and journals, as well as other literature such as information technology literature, trade literature, and other marketing literature. Questionnaires are distributed to random people with various jobs such as students, professionals, workers, etc. Data analysis techniques are using Structural Equation Modeling (SEM).

The number of samples obtained is 400 people. This method uses a Likert scale and based on convenience (convenience sampling). For further understanding from the perspective of consumers about Perceived Usefulness (PU) and Perception of Easy Use (PEOU) to predict respondents' behavioural intention (BI) especially on their interest in using mobile commerce in Indonesia, a survey was conducted in 4 months on e-commerce website users such as Tokopedia.com (79), Lazada.co.id (73), Kaskus.co.id (63), Bukalapak.com (55), OLX.co.id (45), Elevenia.co.id (27), Mataharimall .com (21), Blibli.com (14), Zalora.co.id (12), and Bhinneka.com (11). In total, 400 surveys were completed. The limitations of this study are not long-term sustainability, where the collection of information from research subjects is only done once in a period from May to August 2017.

3. Results and Discussion

Based on the survey results, the majority of respondents were 21-30 years old (56.25%) because, at that age, someone had entered the productive age to start looking for earning income and wanting something quickly and also saving time. Female (61.25%) because of the tendency of women voters are communal minded. This is in accordance with what Kotler and Keller [47] was stated that in terms of shopping, women would show a tendency to pay attention to all things with a new environment which will then sort out what they want and need, but not infrequently the reason for choosing these products is related to a more personal level. Monthly income of Rp. 1,500,000 - Rp. 3,000,000 (30.5%) with a high school education background (43.75%) and bachelor (43.75%), this will determine the selection of goods and services to be purchased because it is strongly influenced by economic conditions and someone's socioeconomic status such as income that can be spent, savings, assets, debt, the ability to borrow, and attitudes towards shopping or saving.

The dimensions of Perceived Easy of Use (PEOU) used in this study are (1) the system is clear and understandable (easy to understand), (2) does not require a lot of mental effort (effortless), (3) easy to use the system. As seen in Fig. 1, respondents' perspective of perceived easy of use is dominated by easy to use system (34%) dimension. It indicates that consumers have the perception that the mobile commerce application system will be easy to use on smartphones to carry out various transactions, primarily buying and selling online. The lowest contributing dimension is the dimension does not require a lot of mental effort/effortless (33%) because consumers still feel that using an e-commerce website does not require much effort in making online transactions rather than using mobile commerce, where mobile commerce applications have a clear and easy-to-understand system for getting the information, the level of convenience that users receive in using mobile commerce applications does not require much effort, and the security guaranteed mobile system commerce application.. The finding is consistent with findings of past studies by

Palvia [48], which perceived easy of use has a significant positive effect on the intention to transact users in using mobile commerce.

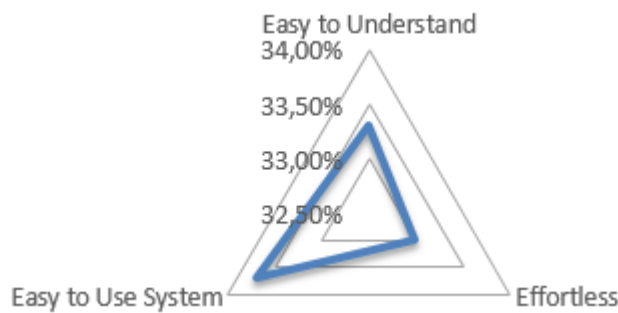


Fig. 1. Respondent's perspective of perceived ease of use.

Perceived usefulness variables are formed through dimensions 1) Performance, 2) Effectiveness, and 3) Productivity. Figure 2 presents the respondents' perspective of perceived usefulness. Based on respondents' perspectives, the dimensions that contribute the lowest from perceived usefulness are productivity (32%), and the highest contributing dimensions are performance dimensions (35%), this happens because consumers feel performance when consumers shop online, they can find choices of goods or services and attractive offers that are very diverse and wide so that the process of selecting products to be purchased until the sale and purchase transaction can be done more easily and quickly only through at several stages of transactions which are consistent with the finding of Rittgen [49].

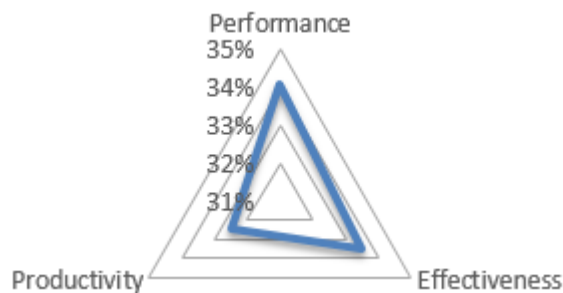


Fig. 2. Respondent's perspective of perceived usefulness.

Interest in using is formed through dimensions 1) product characteristics, 2) attention, 3) interest, and 4) desires. As shown in Fig. 3, the highest score was the dimension of interest (26%) and the lowest score was desire. The desire of consumers to use mobile commerce is completely offered and clear to consumers, attracting the attention of consumers, facilitating the sale and purchase of products, and the desire to try something new. This result also supports Ling et al. [9], which concludes that interest in users and can be a cognitive component of individual behaviour about how individuals are willing to buy the products individually.

Individual acceptance of information systems using the technology acceptance model approach through the Perceived Usefulness (PU) and Perception Easy of Use (PEOU) variables on the intention to use mobile commerce is shown in Fig. 4.

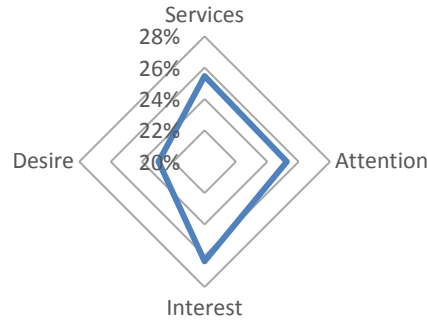


Fig. 3. Respondent's perspective of intention to use.

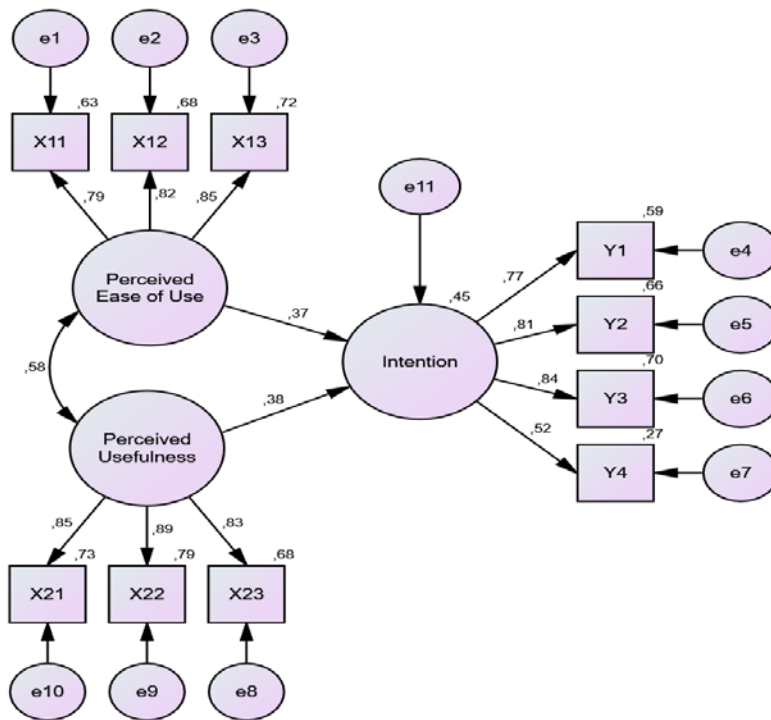


Fig. 4. The SEM result of the research model.

In the Fig. 4 presents the SEM result of the research model. From the SEM results in Fig. 4, it is apparent that the perceived easy of use and perceived usefulness are positively affected. Perceived of use statistically significant influence intention with standard coefficient .37, while perceived usefulness influence statistically significant influence with standard coefficient .38. The findings suggest that perceived usefulness gives a stronger influence rather than the perceived easy of use. The present finding also support Trivedi and Kumar [27], Wibisono [29], Hanafi [32], Sari and Baridwan [50] study which concluded that the relationship between perceived easy of use and perceived usefulness to interest in using a system from

mobile commerce had an impact on consumer behaviour in making online transactions. The goodness of fit index to the primary data is shown in Table 1.

Table 1. The goodness of fit index.

| Fit index | Admissibility | Result | Fit/Not fit |
|---------------|---------------|---------|-------------|
| χ^2 | | 158,428 | |
| DF | | 32 | |
| P value | >.05 | 0.000 | Fit |
| χ^2 / DF | 1.00 - 5.00 | 4.951 | Fit |
| RMSEA | <.08 | 0.080 | Fit |
| GFI | >.90 | 0.922 | Fit |
| AGFI | >.80 | 0.886 | Fit |
| NFI | >.80 | 0.932 | Fit |
| PNFI | >.05 | 0.662 | Fit |
| IFI | >.50 | 0.945 | Fit |
| TLI | >.90 | 0.922 | Fit |
| CFI | >.90 | 0.944 | Fit |

| | |
|----------|-------------------------------------------|
| χ^2 | : The Chi-Square value |
| DF | : Degree of freedom |
| P value | : Calculated Probability |
| RMSEA | : Root mean square error of approximation |
| GFI | : Goodness-of-fit statistic |
| AGFI | : Adjusted goodness-of-fit statistic |
| NFI | : Normed-fit index |
| PNFI | : Parsimonious Normed Fit index |
| IFI | : Incremental Fit Index |
| TLI | : Tucker Lewi Index |
| CFI | : Comparative fit index |

As table 1 shows, the model had 32 degrees of freedom with Chi-square = 158.428 at $p = .000$. The Chi-square/df = 4.951 was between 1.00 - 5.00. The RMSEA was 0.080 (< 0.08) [51] and three index namely GFI (0.922), TLI (0.922) and CFI (0.944) were higher than 0.9 [50]. NFI (0.932) and AGFI (0.886) were higher than 0.80, while PNFI higher than 0.05. Generally, the results indicated that the research model is fitly acceptable to the primary data.

4. Conclusions

Indonesian consumer acceptance of information systems using the technology acceptance model approach through Perceived Usefulness (PU) and Perception Easy of Use (PEOU) on the intention to use mobile commerce shows that the better-perceived easy of use and perceived usefulness are offered the better the interest use mobile commerce in Indonesia. Mobile commerce owners in increasing the intention of their customers must pay attention and increase perceived easy of use and perceived usefulness on their websites so that customers are expected to have further interest in making transactions in mobile commerce.

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