ACCEPTANCE OF TECHNOLOGY AFFECTING INTENTION AND ACTUAL USING MOBILE PAYMENT SERVICE

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ABSTRACT

Abstract—The purpose of this research was to study the acceptance of technology that affect intention to use and actual using mobile payment service of consumers in Bangkok. The sample group used in this research was 400 general consumers who were interested in using electronic wallets and lived in Bangkok by using multi-stage sampling method. Questionnaires was used as a data collection tool which were examined the validity and reliability of the questionnaires. The statistics used in the data analysis were percentage, mean, standard deviation, and multiple regression analysis. The research results revealed that the component of technology acceptance in the aspect of subjective norm, perceived usefulness, perceived ease of use, and attitude toward using positively affected intention to use and actual using mobile payment service with statistical significance at 0.05. In addition, the standardized coefficients in the aspect of perceived usefulness had the highest coefficients, followed by perceived ease of use, and attitude toward using, respectively. While technology acceptance in the aspect of subjective norm has not affected intention to use and actual using mobile payment service.

Keywords— Acceptance of technology, Actual using, Intention to use, Mobile payment service

INTRODUCTION

Currently, Thailand is stepping into the Thailand 4.0 model, which focuses on bringing technology and various innovations as drivers of the economy in preparation for an innovation-driven economy. One of the important measures is to push forward the concept of a cashless society with the view that the importance of money will diminish in the future and will be replaced by the use of computer systems and telecommunication for financial transactions instead. The Thai government therefore has adjusted the strategic plan and developed the infrastructure of the national electronic payment system in collaboration with commercial banks and the Bank of Thailand by pushing PromptPay to help support the transition to a cashless society easier. As a result of the government's push, more and more people nowadays enter online society. Including spending and making more transactions via e-Payment, such as purchasing products via websites or mobile applications. by paying various service fees through deduction from the linked bank account It can be seen that more and more people have started to spend and conduct financial transactions in their daily lives online.

In addition, the spread of the COVID-19 virus, consumers increasingly choose the method of payment of buyers of goods and services via electronic payment to reduce cash contact. One of them is payment transactions through various applications provided on mobile phones or Mobile banking of a service provider that is a financial institution and services from money service providers or electronic money (e-Money) that are not financial institutions such as True Money Wallet or Rabbit LINE Pay, etc. From Bank of Thailand payment indicator data was found that the volume of e-Payment transactions in 2021 increased by 7.92 percent from 2020 and totaled 33,196 billion baht, divided into accounts of service providers who are financial institutions with a total spending value. 4,050 billion baht and accounts of non-financial service providers with a total spending value of 26.47 billion baht (Bank of Thailand, 2021).

The push for a cashless society in Thailand has led to the awakening of financial service providers from financial institutions (Bank) and non-financial institutions (Non-bank). The competition within the financial industry brings benefits to consumers from the emergence of electronic payment systems by various service providers through applications of financial and non-financial service providers. From the changing social patterns and behaviors of consumers including the advancement of technology that is constantly being developed, such as smart phone applications. It is a sign of e-money transactions that continue to grow in both value and volume. Including the continuous growth rate of electronic money account opening from both financial institutions and

non-financial institutions, resulting in the use of electronic money services tends to increase continuously (Wongkangwan, 2022).

Research studies on electronic payment systems continue to be popular and Technology Acceptance Model (TAM), presented by Davis (1989) is another model that should be discussed and studied by many researchers. Because it is a widely accepted theory and has a reputation as a measure of the success of technology use. The principle of TAM will study the factors influencing intention to show behavior using information technology and can predict the behavior of using technology in the future. It comprises four main factors: external variables, perceived usefulness, perceived ease of use, and attitudes toward using information technology which affect the behavior of intention and actual using information technology (David, 1989; Kim, 2016; Vess et al., 2018; Park et al., 2019).

Therefore, the researcher is interested in studying the acceptance of technology that affect intention to use and actual using mobile payment service of consumers in Bangkok. The results of the research reveal various factors. that affects the use of payment services through mobile applications. It will be useful for banks and non-bank financial service providers to improve and develop technology and functions for using application services to respond to the needs of user and to create more confidence in the use of services to the public.

LITERATURE & THEORY

This research defines the components of technology acceptance according to the Technology Acceptance Model, or TAM, presented by Davis (1989). Acceptance of technology refers to the acceptance of individuals who will make decisions to fully adopt technology through the recognition process and learning until they sure that the technology can definitely benefit which depend on the person and the nature of the technology. The principle of the Technology Acceptance Model is to study the factors that influence the acceptance or decision to use a new technology that users are likely to use it. The components of technology acceptance based on the TAM are as follows. *Subjective norm* is a factor that reflects individual beliefs about normative beliefs which arise from the influence of references in order to change behaviors, thoughts, and feelings which is one of the factors in predicting intention to act (Ajzen & Fishvien, 1980). Each person has different norms thus resulting in conformity with different reference groups who is closed to that person, such as family, friends, or the media, etc., who causes the intention to do that behavior. *Perceived usefulness* refers to the awareness of the benefits arising from the use of the service which affects the benefits, improve efficiency and performance. If the benefits of technology match the needs of individuals, it will lead to further adoption and use of that technology which is considered an extrinsic motivation. *Perceived ease of use* refers to the level of belief and expectation of people who use information systems that can be learned easily without any effort much to learn or understand the system. Perceived ease of use directly influenced attitude towards using and the intention to use. It was also found that perceived ease of use influenced perceived benefit. *Attitude toward using* are the feeling, belief, and tendency of a person's behavior towards any person or thing or idea as a way of evaluating feelings, beliefs, and behavioral tendencies. In addition, attitude toward using refers to how users perceive a technology based on perceived usability and perceived ease of use which directly affect the intention of use. *Intention to use* refers to the possibility that the user will accept the technology and the user's intention to use the technology. Perceived usefulness and subject norm had a significant effect on intention to work as well as attitude towards using and intention to use had a significant effect on actual using. *Actual using* refers to the acceptance of the technology by its actual use which intention is an important factor that causes actual usage behavior.

According to a research study of Vess et al. (2018) studied the impact of factors that influence the acceptance of payment technology through mobile phones by using the basis of the diffusion of innovation theory and accepting technology model combined with safety recognition and recognition of privacy risks in which the study shows that it is easy to use and safety recognition influences the individual's intention to use the mobile payment service. Including the study of Park et al. (2019) on the acceptance of payment via the American consumers, revealed that facilities and economic benefits have a positive impact on the attitude of the use of payment services through mobile phones. When comparing the benefits of both variables, it was found that the convenience factor has an indicator that has more comparable benefits than economic benefits to create a good attitude and the intention of using the service. In addition, Kitjaroentanarux & Khampukka (2021) studied on Factors affecting the financial application adoption through smartphones, revealed that perceived ease-of-use, perceived usefulness,

perceived risk, and perceived benefit significantly affected the financial application adoption through smartphone. The research by Kitisitthichai (2018) found that when users perceive the ease of use causing an attitude to use until it leads to the intention of using electronic wallets. In addition, the perception of users' ease of use affects their attitudes towards using mobile payments. This is in line with the research of Thippanyawong (2016) was found that attitudes in the use of e-Money affected the use and resulted in the behavior of actual use of e-Money via mobile phone in Thailand. Based on TAM's technology acceptance theory and previous research, the researcher determined that the conformity factor was based on the subjective norm, perceived usefulness, perceived ease of use, attitude toward using, intention to use and actual using mobile payment application. Including Suttisaksri. (2020) found that factors such as trust, perceived ease of use and perceived usefulness were positively related with intention to use electronic service Moreover, intention to use electronic service was positively influenced the actual usage electronic service via mobile banking of goverment saving bank in Ratchaburi Province.

METHODS

The target population used in this research is people who have used financial application services via smartphones. The exact number of which is unknown and very large. The sample size was calculated by using the finished table according to the formula of Yamane (1973) at the confidence level of 95% and the tolerance value of not more than 5%. The sample size in this research was not less than 400 people. The sampling was done using simple random sampling and convenient sampling. Data collection uses questionnaires as an online data collection tool on social networks that are gaining popularity such as Facebook, Instagram, Line, etc. An invitation to fill up the questionnaire was sent to members of the social media group who have used electronic payment application until the required number of samples is reached. An empirical analysis was performed on consumer surveys based on structured questionnaires designed from previous studies which divided into 3 parts, consisting of demographic data, opinions on the acceptance of mobile payment technology and opinions on intention and actual using mobile payment service. The estimation scale type of questionnaire was 5-level Likert's scale. The generated questionnaires were used to test the validity and reliability of the questionnaires before collecting data in order to obtain accurate research results and achieve the stated objectives. The results of the confidence check were the confidence values of each question were between 0.795-0.914, which passed the reliability criteria (Hair et al., 2010). Additionally, the questionnaires generated were subject to content review from the advisor already, therefore, it was concluded that the questionnaires could be used to collect data. Statistics used in data analysis, the researcher used descriptive statistics to describe the demographic characteristics such as frequency, percentage, mean and standard deviation. As well as the inferential statistical analysis was used to test research hypotheses by using Pearson correlation coefficient analysis and Multiple regression analysis.

RESULTS

Demographic characteristics of the sample was found that most of the samples were female, 56.25 percent, aged between 31-40 years old representing 42.41 percent, most of them had a bachelor's degree representing 36.50 percent, were private company employees representing 24.9 percent, and average income per month between 30,000-40,000 baht representing 54.4 percent. Financial applications that are regularly used are K-Plus, SCB easy, TrueWallet, KTB NetBank, Krungsri, Bualuang mBanking and Rabbit line play, respectively. The highest number of financial applications via smartphones is every day representing 25.56 percent, and most of them have used financial applications via smartphones for 2-3 years representing 30.85 percent.

The opinions about the acceptance of technology that affect the actual using electronic wallets of 400 respondents found that the overall aspect was at a high level. If considering each aspect, the most priority is perceived usefulness at a high level, followed by perceived ease of use, attitude toward using, intention to use, actual using and subjective norm, respectively, at a high level in all aspects.

The multi-regression analysis of factors affecting the acceptance of mobile payment service of consumers in Bangkok found that the subjective norm, perceived usefulness, perceived ease of use, attitude toward using affected intention to use mobile payment service of consumers in Bangkok at a significant level of 0.05, that is, there is a value of F=35.48, with a Sig. of F=0.000, which is less than 0.05, indicating that all variables can explain

the variability of intention to use mobile payment service (R^2) accounted for 56.43 percent. When considering multiple regression coefficients in the form of a standard score, the aspect of perceived usefulness had the highest multiple regression coefficients (β =.354), followed by perceived ease of use (β =.285), attitude toward using (β=.204), and subjective norm (β =.185), respectively, which has consistent with the research hypothesis.

Including the multi-regression analysis of factors affecting the acceptance of mobile payment service of consumers in Bangkok found that the subjective norm, perceived usefulness, perceived ease of use, attitude toward using, and intention to use affected actual using mobile payment service of consumers in Bangkok at a significant level of 0.05, that is, there is a value of F=38.25, with a Sig. of F=0.000, which is less than 0.05, indicating that all variables can explain the variability of actual using mobile payment service (R^2) accounted for 52.05 percent. When considering multiple regression coefficients in the form of a standard score, the aspect of perceived usefulness had the highest multiple regression coefficients (β=.305), followed by perceived ease of use (β =.278), attitude toward using (β=.195), and intention to use (β=.187), respectively, which has consistent with the research hypothesis. While technology acceptance in term of subjective norm has not affected actual using mobile payment service which has inconsistent with the research hypothesis.

CONCLUSION AND FUTURE WORK

Conclusion and discussion
The results revealed that the subjective norm, perceived usefulness, perceived ease of use, attitude toward using affected intention to use mobile payment service of consumers in Bangkok at a significant level of 0.05. This is consistent with the notion of David (1991) that the concept of the technology acceptance model identifies the reasons related to individual acceptance of the use of new technology, emphasizing two key factors including perceived usefulness and perceived ease of use will result in attitude toward use. Therefore, to create awareness among users of the benefits received and the ease of use will make the service user have a good attitude and intend to use the service. In addition, the level of individual belief in the new systems or technologies can increase their productivity and directly affect their attitudes towards the use of technology. This is also consistent with the research of Thippanyawong (2016) found that the perceived benefits of using and perceived ease of use affects the attitude of using e-Wallet on mobile phones and the research of Thongdee (2018) found that the acceptance of technology in the aspect of perceived benefits, attitude towards use and perceived risks affecting the decision to use e-Wallet. Moreover, a study by Suthiwong (2018) found that the aspect of attitude toward using, perceived ease of use, and the perceived benefits from use affect the attitude of use. As well as the attitude toward using had the influence on intention to choose payment service via e-Wallet application and also found that the intention of using influenced the actual using of E-Wallet. As well as Suttisaksri. (2020) found that factors such as trust, perceived ease of use and perceived usefulness were positively related with intention to use electronic service.

Moreover, the results revealed that the perceived usefulness, perceived ease of use, attitude toward using, and intention to use affected actual using mobile payment service of consumers in Bangkok at a significant level of 0.05. While the subjective norm has not affected actual using mobile payment service. This is inconsistent with the research hypothesis and inconsistent with Fishbein and Ajzen's a Theory of Reasoned Action (1980), which states that people will always consider the consequences of their actions before making decision. Therefore, before the behavior is performed, the person will show the intention to perform the behavior first. Subjective norm is therefore a factor that reflects individual beliefs about normative beliefs. The individual person has different norms thus resulting in conformity with different reference groups who is important to that person, such as family, friends, social influencer, etc. It can be said that reference group conformity is the person's perception that the person who is important to them supports the behavior that causes the intention to do that behavior intention as well as if reference group do not support it or do not want them to act that behavior will intend not to do that behavior. This indicates that there may be other perceptions regarding the use of the e-Wallet such as corporate image, trust in its use or the risk of its use. Therefore, users are not amenable to the reference group. This is consistent with the research of Kitisitthichai (2018) found that the perception of users' ease of use affects their attitudes towards using mobile payments. This is in line with the research of Thippanyawong (2016) was found that attitudes in the use of e-Money affected the use and resulted in the behavior of actual use of e-Money via mobile phone in Thailand. Including Suttisaksri. (2020) found that intention to use electronic service was

positively influenced the actual usage electronic service via mobile banking of goverment saving bank in Ratchaburi Province.

Recommendations and future work

The results of the study found that perceived usefulness had the greatest influence on the intent of using mobile payment services and actual using of mobile payment services. Therefore, it is appropriate for relevant government agencies such as the Ministry of Finance and Bank of Thailand should encourage people who have never used the service to recognize the benefits and efficiency of using mobile financial services, such as saving transfer fees, saving time, saving travel cost, etc. Including being able to use big data of using mobile payment services to analyze people's spending data to promote future government economic policies. In addition, the research found that the perception of ease of use influenced the intention to use mobile payment services and the actual using mobile payment services was the second most influential. Therefore, it is appropriate for financial service provider and banking groups to modify some services that are still complicated to be simple and have a clear structured menu. As well as it should cover users of all demographic characteristics to be able to use easily without much effort. The research also found that social norms did not influence the actual use of mobile payment services. Therefore, it is appropriate for bank groups and financial service providers to communicate, publicize and educate about mobile payment services through various media such as social media and to engage social influencers on the benefits and efficacy of mobile payment services.

For further research should be studied in conjunction with other relevant or expected factors influencing intention and actual using mobile payment services in order to gain more insights covering all dimensions such as factors of marketing mix, brand image, service quality, security, risk and trust. Moreover, it should study in other population groups or other areas to get broader and more comprehensive information.

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