Factors Influencing the Use of Mobile Payments Among Millennials in Indonesia

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Abstract:
Amidst the ongoing COVID-19 pandemic, mobile payment options have become vital in shaping consumer behavior, particularly among digitally savvy Indonesian millennials. Furthermore, these payment options provide a means for individuals who wish to limit their social interactions while purchasing, thereby reducing the potential for COVID-19 exposure. The author's objective in this research is to examine the diverse aspects that impact society's adoption of mobile-based payment methods. The research methodology employed in this study is qualitative, utilizing a library research technique drawing from many contemporary journals that address similar subjects. The authors identify several influential factors or variables that affect the adoption of mobile payment methods in society. These include perceived usefulness, ease of use, trust, cost, social influence, attitude, privacy, technology security, continuous improvement, perceptions of performance expectancy, compatibility, knowledge, and trust.

Keywords: Use of Mobile Payments, Covid-19, Millennials

Introduction
The COVID-19 pandemic has caused major changes in people's daily lives, leading to major changes to established habits and routines. The COVID-19 pandemic has had a significant impact on all aspects of society, including consumer finance. One major change is the emergence of mobile payment systems, which have become an important tool to address the problems caused by the epidemic.

This is in line with the results of research conducted by (Wiadi & Sajili, 2023). According to their research findings, the results show that the COVID-19 phenomenon has a positive and direct influence on mobile banking and internet services. Although it is still mediated by security variables in the use of mobile banking and internet services (Wiadi & Sajili, 2023). Interestingly, their research found that the majority of users of digital
wallets are millennials, indicating that millennials in Indonesia have shown significant interest in mobile payment systems, which have become increasingly popular in recent years.

Howe and Strauss in their book "Millenials Go To College" claim that Millennials (who they also describe as archetypal heroes, born from 1982 to 2005) exhibit many features similar to younger G.I. generations, which they describe as including increased civic engagement, increased behavior, and collective trust. (Howe & Strauss, 2003). This generation is very good at embracing diversity, using technology, and engaging in online communication to maintain connections with others in their generation. (Ellis & Mahadevan, 2013). If we pay attention to the characteristics of Millennials based on the explanation (Howe & Strauss, 2003), Millennials can be said to be a generation that is very skilled in adopting and utilizing technology so that mobile payments for them are a technology trend that is too sweet to miss, moreover they are very close to smartphone technology that allows them to do many things in their hands.

**Definition of mobile payment systems**

Mobile payment services are a fast-growing segment of mobile marketing. This service is also referred to as mobile wallet, mobile money transfer, contactless payment, or proximity payment. Since Google Wallet became the first mobile payment system used in the United States in 2011, smartphone manufacturers and other banking service providers have flocked to implement this new technology in their smartphone devices. Their goal is not only to offer profits to their customers but also to expand their business into this emerging area (Jung et al., 2020).

The simplicity and convenience of mobile payment services has led to the widespread adoption of this technology by consumers. The service allows users to make secure transactions using their mobile phones, thus eliminating the need to use physical money or debit or credit cards. Mobile payments have fundamentally changed the payment process, they have also opened up new possibilities for businesses to connect and captivate their customers. Through the application of this cutting-edge technology, businesses have effectively optimized their payment procedures and increased consumer satisfaction. In addition, the integration of mobile payment systems has facilitated the collection of significant data on consumer behavior and preferences, empowering companies to tailor their products and advertising strategies accordingly.

Based on the article quoted from the official website of Bank Indonesia, an interesting fact was found through a survey conducted by Ipsos in Southeast Asia, where it was found that more people use digital wallets than bank accounts when they shop online. The five most widely used digital payment applications in Indonesia are Shopeepay, OVO, GoPay, DANA, and LinkAja. ShopeePay did better than expected and ranked first as the most popular and frequently used digital bank with a 34% share through 2020. Next is OVO with 28%, GoPay with 17%, Fund with 14%, and Link Aja with 8% (Kurniawan, 2022).

InsightAsia’s latest study, "Consistency That Leads: 2023 E-Wallet Industry Outlook," also shows that digital wallets are becoming the most popular means of payment, surpassing cash payments and bank transfers. 74% of those who answered the survey said they regularly use digital wallets for many different types of transactions. Digital wallets are used more than other payment methods, such as cash (49%), bank transfer (24%), QRIS (21%), Paylater (18%), debit card (17%), and VA transfer (16%). The survey was conducted in seven major cities in Indonesia, from September 19 to September
30, 2022. These cities are Jabodetabek, Medan, Bandung, Makassar, Palembang, Semarang and Pekanbaru (Wulandari, 2023). This is certainly an indicator that mobile payment has received a very lively response from the public.

**Methods**

In this study, the type of method used is library research. This method is applied by reviewing various books, literature and previous research reports on similar problem topics (Asmendri, 2020). According to (Khatibah, 2011), library research is a planned process to collect, analyze, and draw conclusions from data using specific methods and techniques to solve problems that arise in literature research. This is done by collecting information or scientific writings on topics that are being observed in library settings, to find answers to problems that require a close and critical look at relevant library materials. The reason for choosing this method is because researchers need data from various types of literature, such as books and old research papers, so that they can obtain a theoretical basis related to the problem they want to study (Khatibah, 2011). However, in order for this method to be implemented properly, a deep understanding is needed by researchers of the work procedures in the literature (Harahap, 2014).

**Results**

**Factors Affecting the Use of Mobile Payment in Indonesia**

Based on empirical findings from research conducted by (Abd Rahim Amihsa et al., 2020), there are several factors that influence the use of mobile payment systems in people in Indonesia. The factors in question are usefulness, ease of use, trust, cost, social influence, and attitude. Research shows that these factors can be a major consideration in choosing the use of a mobile payment system. This is shown through the results of analysis carried out with quantitative methods and using the PLS-SEM analysis method. The results of the analysis show that these factors have a significant influence on user selection.

1. **Hypothesis 1:** Usefulness has a positive relationship in influencing user behavior (attitude) in using mobile payment services. Based on the analysis that has been done, the Cronbach alpha value is 0.867, then the composite reliability value is 0.910, and the AVE (average extracted variance) value is 0.717.
2. **Hypothesis 2:** Ease of use has a positive relationship in influencing user behavior (attitude) in using mobile payment services. Based on the analysis that has been done, the Cronbach alpha value is 0.939, then the composite reliability value is 0.957, and the AVE (average extracted variance) value is 0.846.
3. **Hypothesis 3:** Trust has a positive relationship in influencing user behavior (attitude) in using mobile payment services. Based on the analysis that has been done, the cronbach alpha value is 0.930, then the composite reliability value is 0.947, and the AVE (average extracted variance) value is 0.781.
4. **Hypothesis 4:** Cost has a positive relationship in influencing user behavior (attitude) in using mobile payment services. Based on the analysis that has been done, the Cronbach alpha value is 1,000, then the composite reliability value is 1,000, and the AVE (average extracted variance) value is 1,000.
5. **Hypothesis 5:** Social Influence has a positive relationship in influencing user behavior (attitude) in using mobile payment services. Based on the analysis that has been done, the Cronbach alpha value is 0.936, then the composite reliability value is 0.959, and the AVE (average extracted variance) value is 0.887.
6. **Hypothesis 6:** Attitude has a positive relationship with influencing user intention in
using mobile payment services. Based on the analysis that has been done, the Cronbach alpha value is 0.909, then the composite reliability value is 0.936, and the AVE (average extracted variance) value is 0.786.

Based on the above findings, it can be seen that all construct values proposed for the measurement model show a number above 0.7 for composite reliability, then for AVE (average extracted variance) also shows a number above 0.7 so that all hypotheses can be accepted (Fornell & Larcker, 1981). In addition, please also note that the majority of respondents (70%) in this study came from the age group of 26-39 years, most of whom have professions as employees with undergraduate education (S1). The payment platform they use is GOPAY, besides that it was also found that the majority of transactions made by them are to buy food and transportation purposes. Therefore, it can be concluded that broadly speaking various factors such as Usefullness, Ease of use, Trust, Cost, Social Influence, and Attitude have a positive relationship with the use of mobile payments among millennials (Abd Rahim Amihsa et al., 2020).

Mobile Payment Satisfaction Post-Pandemic COVID-19 in Indonesia

This study has similarities with previous research conducted by (Huddin & Ikhsan, 2022) because this study also analyzes the variables of ease of use and usefulness as independent variables and measures their effect on mobile payment satisfaction. The other variables observed in the study which is the work of (Huddin & Ikhsan, 2022) as independent variables, including technology security, ease of use, usefulness, and continuous improvement.

1. Hypothesis 1: Technology security has a positive effect on mobile payment satisfaction.
2. Hypothesis 2: Ease of use has a positive effect on mobile payment satisfaction.
3. Hypothesis 3: Usefulness has a positive effect on mobile payment satisfaction.
4. Hypothesis 4: Continuous improvement has a positive effect on mobile payment satisfaction.
5. Hypothesis 5: Satisfaction has a positive effect on mobile payments.

According to the analysis of respondents’ answers, the age group of 21-35 years accounted for 186, or 58.6% of the total, followed by the age group of 35-85, or 26.9%, and the age group under 20-46, or 14.5%. From these findings, it can be seen that the character of respondents is dominated by millennials. Furthermore, by observing the p value, it was found that the value of all p values in the variable showed a number below 0.05 so that all hypotheses could be accepted. This confirms that technology security has a positive effect on mobile payment satisfaction, ease of use has a positive effect on Mobile Payment Satisfaction, its advantages have a positive effect on mobile payment satisfaction, continuous improvement has a positive influence on mobile payment satisfaction, and, in addition, its satisfaction has a positive impact on the credibility of mobile payments post COVID-19 pandemic in Indonesia (Huddin & Ikhsan, 2022).

Mobile Payment Service Usage: U.S. Consumers’ Motivations and Intentions

Further research by (Jung et al., 2020) also observed the same topic related to mobile payment systems (MPSs), but through this study, they analyzed the influence of variables that influence people’s motivation and intention to use mobile payments. The variables observed are performance expectancy, effort expectancy, social influence, compatibility, knowledge, perceived risk, trust, relative advantage, behavioral intention, monthly mpss usage.

1. Hypothesis 1: Performance expectancy Positive influence on intention to use MPSSs.
2. Hypothesis 2: Social Influence Positive influence on intention to use MPSSs.
3. Hypothesis 3: Compatibility Positive influence on intention to use MPSSs.
4. Hypothesis 4: Perceived knowledge Positive influence on intention to use MPSs.
5. Hypothesis 5a: Perceived Trust Positively Affects Intention to use MPSs.
6. Hypothesis 5b: Perceived risk Negative effect on intention to use MPSs.

This research was conducted on 304 respondents consisting of 238 female students (78.1%) and 66 male students (21.7%). Almost all of them (98%) are between the ages of 18 and 24. Research findings suggest that American consumers’ propensity (specifically millennials and some Gen Z) to use MPS is primarily influenced by their perceptions of trust, knowledge, social influence, compatibility, and performance expectancy. However, relative advantage was found to have no significant effect. In particular, mobile payment system performance expectations emerged as the most important determinant in predicting users in the United States (Jung et al., 2020).

The Effect of Privacy and Security on the Use of Mobile Payments

Furthermore, there is a study that looks at other variables that can affect the use of mobile payments among millennials such as privacy and security in the transaction process which is the work of (Zaman et al., 2022). Through the findings of their research, it was found that there was a positive and simultaneous influence on the variables Privacy (X1) and Security (X2) on the variable Mobile Payment (Y). Their research uses quantitative methods.

1. Hypothesis 1: There is an influence of privacy variables on mobile payments. The results of a simple linear regression analysis show that the calculated t value on the Privacy variable (X1) against the Mobile Payment variable (Y) is t calculate 3.860 > t table 1.98698 then the Sig value 0.000 < 0.05 so that it can be said that H01 is rejected which means there is a positive and significant influence between the Privacy variable (X1) and the Mobile Payment variable (Y). In addition, the correlation value R also shows a number of 0.379 so that it is in the range of 0.200-0.399 with a low level of relationship, it concludes that the Privacy variable (X1) has a low level of relationship to the Mobile Payment variable (Y).

2. Hypothesis 2: There is an influence of security variables on mobile payments. To test this hypothesis, a simple linear regression analysis was carried out which showed the results that the calculated t value on the Privacy variable (X1) against the Mobile Payment variable (Y) was t calculate 8.667 > t table 1.98698 then the Sig value 0.000 < 0.05 so that it can be said that H02 is rejected which means there is a positive and significant influence between the Security variable (X2) and the Mobile Payment variable (Y). In addition, the correlation value R also shows a number of 0.677 so that it is in the range of 0.600-0.799 with a high level of relationship, it concludes that the Privacy variable (X1) has a high level of relationship to the Mobile Payment variable (Y).

3. Hypothesis 3: There is a simultaneous influence on the privacy (X1) and security (X2) variables on the mobile payment variable (Y). To prove this hypothesis, multiple linear regression analysis was performed. Through this analysis, it was found that the F value of the adallah count was 39.374 > F table 3.10 then the probability value Sig 0.000 < 0.05 thus indicating that H0 was rejected and Ha was accepted. So it can be concluded that there is a positive and significant influence in a joint way between the Privacy variable (X1) and the Security variable (X2) on the variable Mobile Payment Use (Y). In addition, the correlation value R = 0.687 so that it is in the range of 0.600–0.799 thus indicating a strong relationship level, therefore it can be said that the Privacy variable (X1) and Security variable (X2) have a strong relationship level to the Mobile Payment variable (Y).

So based on the above research conducted on the 1st level Pamulang University student population, with a total of 974 people and a sample of 91 people, it can be concluded that the variables Privacy and Security have a positive and strong influence together on the use of Mobile Payment. However, if analyzed individually, the level of relationship between privacy variables and mobile payments is also positive although
relatively weak. Meanwhile, the relationship between security variables and mobile payments is also positive but relatively strong (Zaman et al., 2022).

**Theory Discussion**

**Perceived Usefulness & Ease of Use**

By definition, perceived usefulness can be interpreted as people's belief and perception that the use of certain technologies will improve their quality of life (Davis et al., 1989). But there is another thing to consider, namely "simplicity". Simplicity refers to people’s belief that a particular technology is easy to use, easy to understand, and won't take much time, the belief in question is *ease of use* (Taylor & Todd, 1995). Therefore if a mobile payment platform or application is considered too difficult or complex to use, then most likely people will be reluctant to use it.

**Social Influence**

Social influence can be defined as the source of information received by a person when they are informed about a new innovation and given the opportunity to implement it, as well as the degree to which a person realizes that others who are important to them must use the new system (Ajzen & Fishbein, 1975). Please note that in order to receive a new innovation such as digital payments, the process is not as easy as we think. This is because usually, an individual will experience concerns about the uncertainty created by innovation before deciding to implement it. Therefore, in order to reduce the sense of uncertainty, individuals tend to rely on their social networks to consult about their decisions through informative and normative social influences (Burkhardt & Brass, 1990).

**Perceived Trust**

Perceived trust can be defined as "the trust that users have in the mobile devices used to be able to make online transactions." (Leonard, 2016). (Lin et al., 2014) states that trust has traditionally been a driving force in buyer-seller interactions, where buyers have high expectations of achieving business relationships. It's also worth remembering that a lack of consumer trust has been identified as the biggest long-term barrier to the company's efforts to expand its mobile banking system (Gao & Waechter, 2017).

**Cost**

Cost reduction is the main motivation for retailers to adopt the m-payment system in their business. The main barrier to adopting mobile payment technology is the presence of high costs (Mallat & Tuunainen, 2008). This is due to the fact that merchants encounter various fees when implementing m-payment technology, which has a significant influence on its use. In addition, keep in mind that m-payment user behavior is strongly influenced by trust, experience, and perceived costs (Moźdzżyński, 2018). Therefore, it is important for m-payment developers and governments to consider these costs in technology implementation strategies in order to create a low-cost payment ecosystem, so that it can have appeal to its users.

**Continuous Improvement**

It is important for all sectors, including m-payment service providers, to continue to pursue development and innovation, because value will increase through successfully overcoming problems that arise regularly in the field and also through efforts to improve service quality, especially along with technological advances. Therefore, when considering m-payment, it is very important to evaluate the effectiveness of technology as a medium, considering that the rapid evolution of technology will require continuous expansion of services and innovation in order to meet consumer needs and demands. (Lee et al., 2006). This is in line with the explanation (Liao & Cheung, 2008) in their research that service improvements in
m-payment technology can affect payment transactions and also consumer satisfaction (Liao & Cheung, 2008). Therefore, companies need to continue to develop technology on m-payments and innovate continuously in order to keep up with the evolving needs and demands of their consumers in order to remain competitive in the market.

**Perceptions of Performance Expectancy & Compability**

Performance expectancy is defined as users’ expectations of the functionality of the technology they have adopted (Sarfaraz, 2017). Of course, users must have positive expectations for the technology they use, at least it is easy to use and can provide benefits as promised. Compatibility refers to the extent to which innovation is considered to be in line with current values, past experience, and existing needs of potential users (Rogers & Singhal, 2003). According to Rogers & Singhal, improved compatibility can reduce the sense of uncertainty in users, in other words reduce the assumption in users that there is a risk in the adoption process of technology. In addition, according to Rogers, a higher level of compatibility allows individuals to give more meaning to the innovation and engender a sense of familiarity to the technology. Therefore, it implies that compatibility has a positive impact on the level of trust, but a negative impact on the level of risk.

**Knowledge & Trust**

Previous research has shown that an individual’s judgment to choose a product or service can be influenced by the level of knowledge they have about the product or service (Alba & Hutchinson, 1987). Knowledge or experience of technology has been considered a construct that can significantly help in predicting individual acceptance of technology adoption (Knight, 2015). But in addition to knowledge, another factor that can affect a person’s willingness to use mobile payments is trust. Trust can be defined as the extent to which an individual or consumer is willing to rely on a third party when doing business. Regarding the payment aspect, consumer trust in the security of online purchases is rooted in their perception of seller quality (Patil et al., 2020). Widespread beliefs influence behavioral intention and satisfaction. (Patil et al., 2020) provides a definition of trust as the subjective belief that individuals will fulfill transaction obligations because of their understanding of those obligations. Consumer confidence in the m-payment system is demonstrated by their desire to engage in purchase and sale transactions and take action regardless of the potential damage or loss caused by the seller’s actions. Therefore, consumer trust is a key factor in the success of the m-payment system, because it not only affects consumers' willingness to participate in using the platform, but can also affect their satisfaction to use the mobile payment platform further.

**Attitude**

(Triandis, 1979) explains that attitude is a positive or negative behavior of a person, in response to innovation adaptation. This definition basically explains attitude from a psychological perspective, as an implicit response with a driving force that arises in individuals as a response to a stimulus or stimulus, which will later influence their next action (Triandis, 1979). Furthermore, attitude is defined by Pikkarainen et al., 2004 as a compatibility criterion, which combines self-care, technology preferences, and lifestyle, among others (Pikkarainen et al., 2004). (Davis et al., 1989) in their research explain that attitude acts as a partial mediator, taking into account most of the relationship between perceived utility and intention to use. Those who believe that the implementation of a new technology will produce more favorable results will show a more positive inclination towards it (Davis, 1989). Therefore, a person’s attitude towards mobile payment technology can be a positive response if they consider the technology easier, faster, and safer. But it can be negative if they feel awkward or uncomfortable with the use of the technology.
Intention to Use

The concept of "intention" is often used to understand how attitudes can influence real behavior (Huang et al., 2004). For example, a pessimistic attitude will result in unfavorable intentions and actions (Stevenson et al., 2000). Previous research has also produced empirical findings regarding the positive influence that positive beliefs about cellular technology have on mobile user intentions (Au & Kauffman, 2008). Therefore, if consumers already have positive beliefs about mobile technology, they will most likely have the intention to use the device actively, but the opposite will also be true.

Privacy & Security

Privacy is a critical global issue. Various laws, constitutional protections, and court decisions exist in almost every country to protect privacy. In the constitutional laws of countries around the world, privacy is upheld as a fundamental right of all people (Solove, 2010). The issue is not limited to mobile payment apps that closely rely on the personal data of their users. Therefore, if suspicions arise that users' personal data can be misused or stolen by irresponsible parties, then it cannot be avoided, because mobile payment applications use their user data in a complex way, sometimes they even ask for authorization of access to user devices to sensitive areas such as contact lists to various other personal information. This is in line with the opinion (Xu et al., 2012) that users will feel monitored if there is aggressive data collection, especially if they are able to make independent decisions regarding the use of personal data without user consent (Xu et al., 2012). But not only that, security is also a crucial factor for users in using mobile applications or payment platforms. According to (Whitman &Mattord, 2021), Protecting sensitive data and material contained within specialized hardware or in the form of systems, is the primary goal of information security (Whitman &Mattord, 2021). Complementing the statement (McLeod, R., & Schell, 2001) in their research added that information security must be upheld in order to achieve availability, integrity, and confidentiality to its users (McLeod, R., & Schell, 2001).

Conclusion

There are many factors that can affect a person's willingness to use a mobile payment platform, while these factors include various things such as perceived usefulness, ease of use, trust, cost, social influence, attitude, privacy, technology security, continuous improvement, perceptions of performance expectancy, compatibility, knowledge, and trust. Therefore, it is important for m-payment application developers to be able to pay attention to these factors in order to attract users and increase the adoption of m-payment technology in everyday life both from millennials and society in general.

References


