# Does Satisfaction Leads to Continuance Usage Intention? The influence of Service Quality and Cognitive Processing towards M-Payment

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**ABSTRACT**

Rapidly evolving technology is changing consumer behavior patterns, which demand convenience, speed, and mobility in services. This has forced businesses to shift to online-based services. Payment service providers face demands to deliver high-quality services focusing on performance and user satisfaction (Hossain & Mahmud, 2016; Tenison et al., 2016). Innovations such as adding discounts and convenience features are strategies to fulfill this need. However, without sufficient cognitive ability, users may be reluctant to utilize such technologies, reducing the impact of innovations on increasing the number of users (Bharti et al., 2014; Piligrimiene et al., 2015). Barriers to cash payments include security issues, record-keeping difficulties, and lack of transparency (Setor et al., 2021; Singh & Bhattacharya, 2017; Yi & Gong, 2013). Digital payments through M-payments can address these issues (Oyewole et al., 2013; Yi & Gong, 2013). Previous studies used TAM and ECM to understand user satisfaction, service quality, and intention to continue using (Chiu et al., 2019; Szymanski & Hise, 2000). However, studies on the participation of value creation and cognitive processes in M-payments are limited (Chiu et al., 2019; Szymanski & Hise, 2000). Therefore, this study attempts to integrate these factors into the TAM and ECM models to understand better the factors that influence users' intention to continue using M-payments. This research used a survey conducted by distributing online questionnaires. SEM was used to analyzed this study.

*Keywords: M-Payment, Cognitive Processing, Continuance Usage Intention, User Satisfaction, Service Quality.*

## 1. RESEARCH BACKGROUNDS

Rapidly developing technology has resulted in changes in consumer behaviour patterns where consumers now demand things to be done mobile, quickly, and easily. This, of course, brings consequences to the concentration of business on online / wireless-based services. The increasing number of businesses that can be done online certainly impacts payment service providers who must provide high-quality services that meet their expectations, focusing on service performance and user satisfaction (Hossain & Mahmud, 2016; Tenison et al., 2016). Therefore, service providers try to make various innovations to meet these demands, for example, by providing additional features such as discounts, adding benefits that make it easier, and so on. However, often, the addition of sophisticated features, if not accompanied by good cognitive abilities, can cause users to be reluctant to use the technology so that the innovations provided by payment service providers do not have an impact on increasing users (Bharti et al., 2014; Piligrimiene et al., 2015). These constraints and dissatisfaction with service quality and security of cash transactions may affect users' intention to continue using M-payments (Setor et al., 2021; Yi & Gong, 2013). Cash payments have their own obstacles, for example, in terms of security and the degree of convenience in recording payments (Setor et al., 2021; Singh and Bhattacharya, 2017; Yi and Gong, 2013). In addition, payment transparency is also difficult when using cash payments (Setor et al., 2021; Jaiswal et al., 2022). These barriers can be overcome with digital payments through M-payments (Oyewole et al., 2013; Yi & Gong, 2013).

Previous research has used TAM and ECM to understand the relationship between user satisfaction, service quality, and users' intention to continue use (Chiu et al., 2019; Szymanski & Hise, 2000). However, few studies have explored the role of value-creation participation and cognitive processes in M-payments (Chiu et al., 2019; Szymanski & Hise, 2000). Therefore, this study attempts to integrate these factors into the TAM and ECM models to understand better the factors that influence users' intention to continue using M-payments.

The results of this study are expected to help developers, service providers, businesspeople, and policy makers improve M-payment services and strengthen user confidence in digital payments through mobile devices. This study

can also serve as a guide for the telecommunications industry in understanding the factors influencing user satisfaction and intention to continue using M-payment.

## 2. HYPOTHESIS DEVELOPMENT

### 2.1. Satisfaction Using M-payment

Along with the development of technology and the increase in smartphone users, there has been an increase in payment system services (M-payment) (Dlodlo, 2014; Kar, 2021). Adopting new technology is highly dependent on the perception of customer satisfaction when using payment services. Therefore, the perception of satisfaction plays a vital role in successfully adopting M payment technology (Kar, 2021). Several factors cause users to feel satisfaction with the M Payment system service: the system's perceived simplicity, credibility, security, trust, and effectiveness (Kar, 2021; Rafdinal & Senalasari, 2021; Franque et al., 2021). Users assess M-payment service quality from convenience, economic efficiency, speed, service reliability, and customer support (Gao & Waechter, 2017; Nguyen et al., 2022; Smolarczyk, 2018). M-payment applications provide benefits, particularly in financial security, through payment transparency and secure fund transfer (Rabaa'i et al., 2021; Rastogi et al., 2021). In addition, there are additional benefits such as coupons, discounts, and loyalty points usually provided by M Payment providers to increase user satisfaction (Smolarczyk, 2018; Zhao & Bacao, 2021)

Efficient use of M-payments increases user participation in transactions and influences perceptions of service quality (de Luna et al., 2019; Dlodlo, 2014). Thus, M-payment user satisfaction impacts the continued use of the service (Kar, 2021; Smolarczyk, 2018). Therefore, the hypotheses are structured as follows:

**Hypothesis 1:** User satisfaction with M-payments is positively correlated with intention to continue using M-payments.

### 2.2. Cognitive Processing

Cognitive processes are the ability of individuals to collect and utilize information in decision-making (Abidin et al., 2020; Osiurak et al., 2018). The ability of individuals to process information and cognitive flexibility affects how individuals respond to decision-making situations (Abidin et al., 2020; Patil et al., 2017). The degree of ease of use of the payment system can affect cognitive processes (Hossain & Mahmud, 2016; Patil et al., 2017).

In the context of payments, M-payments innovations are essential to overcome current challenges (Abidin et al., 2020; Hossain & Mahmud, 2016). Such innovations, such as improved transaction security and a more seamless user experience, play an essential role in increasing consumer adoption of M-payments (Patil et al., 2017; Wang, 2022).

Cognitive factors influence the innovation process and consumer decisions, where the ability to process information and interest in innovation interact with perceptions of M-payments (Chen et al., 2019; Rafdinal & Senalasari, 2021). Service providers make various innovations in the services provided to influence consumer decision-making when choosing a payment method (Biswas et al., 2022; Osiurak et al., 2018; Wood & Swait, 2002). For example, perceived security and convenience can influence users' choice of M-payment (Bettiga & Lamberti, 2017; Wood & Swait, 2002).

Research shows that cognitive processes contribute to user satisfaction and intention to use M-payments sustainably (Bettiga & Lamberti, 2017; Brosch et al., 2013; de Luna et al., 2019; Giese & Cote, 2000; Wood and Swait, 2002). Thus, the hypotheses are structured as follows:

**Hypothesis 2:** Cognitive processes are positively correlated with continued use of M-payment usage (intention).

**Hypothesis 3:** Cognitive processes are positively correlated with user satisfaction with M-payment.

### 2.3. M-Payment Service Quality

Rapid development in wireless technology encourages users to evaluate the advantages and value of mobile payment service providers (Hijazi, 2022; Rust & Oliver, 1994). Along with developing services from offline to online, electronic service quality measurement with the (E-S-QUAL) method is necessary (Parasuraman et al., 2005; Petnji Yaya et al., 2012). E-S-QUAL considers company services and technologies that affect service quality (Lisana & Handarkho, 2022; Parasuraman et al., 2005).

There are four main dimensions of mobile service quality: interactivity, value-added features, security, and usability (Hijazi, 2022; Malatji et al., 2020). Interactivity is the ability of the M-payment platform to two-way communication and fast system response (Kar, 2021; Petnji Yaya et al., 2012). Value-added features such as coupons and loyalty cards facilitate continued usage (Hijazi, 2022). Security protects users' personal and financial information (Kar, 2021; Rajaobelina et al., 2021). Usability includes a convenient interface and ease of use (Lisana & Handarkho, 2022; Szymanski & Hise, 2000).

M-payment service quality that meets customer expectations can increase satisfaction and intention to use the service (Kar, 2021; Lisana & Handarkho, 2022). M-payment service quality shapes perceived value jointly through cognitive processes, which are positively related to user satisfaction and intention to continue use (Giese & Cote, 2000; Hijazi, 2022; Vega-Vazquez et al., 2013; Yi & Gong, 2013). Thus, the quality of M-payment services customers receive is important in shaping perceived value and influencing user behaviour. Therefore, the hypothesis is structured as follows:

**Hypothesis 4:** M-payment service quality is positively correlated with continued use of M-payment with continuous use intention.

**Hypothesis 5:** M-payment service quality positively correlates with user satisfaction with M-payment.

## 3. RESEARCH METHOD

This research used a survey conducted by distributing online questionnaires to 220 people. The questionnaire was given to people who purchased goods or services online. The requirements for respondents in this study are 1—at least 17 years old, 2. Make online payments at least once. The questionnaire was translated into Indonesian so that it was easy for respondents to understand, and then it was translated into English again. Of the 220 questionnaires distributed, 95% returned questionnaires, namely 210. Data collected included age, gender, and income/month. The questionnaires distributed were measured using a Likert scale. M-payment service quality variable statement items were taken from Hijazi (2022) and Rajaobelina et al. (2021). Cognitive processing variable items are taken from Glavee-Geo et al. (2020) and Hijazi (2022). The user satisfaction variable item is taken from Jaiswal et al. (2022), and Kamboj et al. (2022), And the continuance usage intention variable items are taken from Aslam et al. (2023) and Foroughi et al. (2019). SEM was used to analysed this study.

## 4. RESULTS

Validity testing is done using standard loading, while reliability testing is done using CR. Validity and reliability results can be seen in Table 1.

**Table 1.** Standard Loading & CR

| Construct | Item | Std Loading | CR |
|---|---|---|---|
| MPSQ | MPSQ1 | 0.54 | 0.83 |
| | MPSQ2 | 0.54 | |
| | MPSQ3 | 0.61 | |
| | MPSQ4 | 0.58 | |
| | MPSQ5 | 0.64 | |
| | MPSQ6 | 0.60 | |
| | MPSQ7 | 0.55 | |
| | MPSQ8 | 0.61 | |
| | MPSQ9 | 0.63 | |
| CP | CP1 | 0.77 | 0.84 |
| | CP2 | 0.87 | |
| | CP3 | 0.76 | |
| SAT | SAT1 | 0.78 | 0..85 |
| | SAT2 | 0.72 | |
| | SAT3 | 0.69 | |
| | SAT4 | 0.74 | |
| | SAT5 | 0.71 | |
| CUI | CUI1 | 0.69 | 0.68 |
| | CUI2 | 0.62 | |
| | CUI3 | 0.51 | |
| | CUI4 | 0.53 | |

The standard loading results are above 0.5, which can be said to be valid, and the CR results are above 0.7, which is said to be reliable. Furthermore, testing was carried out on the Confirmatory Factor Analysis (CFA) model. The Goodness of Fit Index (GOF) results show that $\chi2$ /DF = 1.562; RMSEA = 0.061; GFI = 0.856, CFI = 0.915; TLI = 0.903.
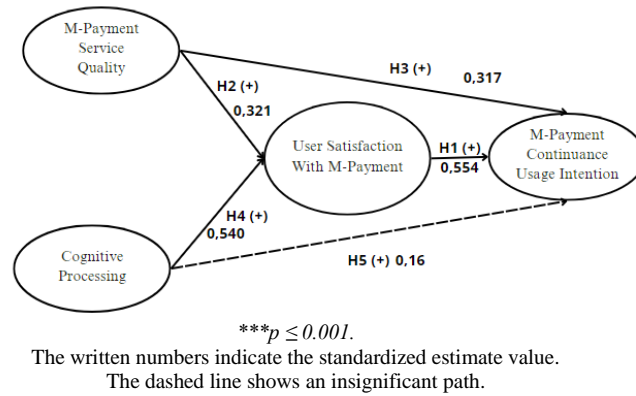
***p ≤ 0.001.*
The written numbers indicate the standardized estimate value.
The dashed line shows an insignificant path.

**Figure 1** The results of the structural model testing

**Table 2.** The summary of the results of the research hypothesis testing

| Hypothesis | Effect | Std Estimate (β) | Critical Ratio C.R. | P | Information |
|---|---|---|---|---|---|
| SAT → CUI | positive | 0.55 | 2.944 | 0.03 | Supported (H1) |
| MPSQ → SAT | positive | 0.32 | 2.262 | 0.024 | Supported (H2) |
| MPSQ → CUI | positive | 0.32 | 1.699 | 0.089 | Supported (H3) |
| CP → SAT | positive | 0.54 | 3.660 | *** | Supported (H4) |
| CP → CUI | positive | 0.02 | 0.084 | 0.933 | Not Supported (H5) |

MPSQ = Mobile Payment Service Quality; CP = Cognitive Processing; SAT = Satisfaction; CUI = Continuance Usage Intention

Hypothesis testing was analyzed using SEM, namely the structural model. The GOF model shows good results ($\chi2/df$ = 1.562, RMSEA = 0.061, GFI = 0.856, TLI = 0.915, and CFI = 0.903). Based on hypothesis testing of the structural model shown in Figure 1 and Table 2, the direct effect of cognitive processing on M-payment continuous use intention (H5) is not supported. The effect of cognitive processing and M-payment continuous use intention occurs indirectly through user satisfaction with M-payment. User satisfaction with M-payment positively affects the intention to continue using M-payment. ($\beta$ = 0.554, p ≤ 0.001), so H1 is supported. In condition H2, the positive effect of M-payment service quality on user satisfaction with M-payment is supported by empirical data ($\beta$ = 0.321, p ≤ 0.001). Data analysis also shows that cognitive processing on user satisfaction with M-Payment ($\beta$ = 0.317, p ≤ 0.001), so H4 is supported.

From Gen Z's perspective, the ability to gather and utilize information in decision-making cannot directly affect continuance usage intention because the thinking process takes a long time and can only occur when users are satisfied. Satisfaction is essential in mediating the relationship between cognitive processing and the intention to use M-payments continually.

## 5. DISCUSSION AND IMPLICATION:

Satisfaction using M-payment is influenced by M-payment service quality and cognitive processing. Satisfaction also has a direct effect on the intention to use M-payments continually. Service quality directly affects continuance intention, but the relationship between cognitive processing and M-payment continuance usage intention is moderated by satisfaction. Referring to the study's results, M-payment service providers must pay attention to user satisfaction because this can determine the user's continuance intention to use M-payment services. Things that can be done to increase satisfaction, for example, by providing exemplary service by handling complaints quickly, providing additional new services/features that make it easier for users, increasing ease of use through display updates, or providing additional facilities, for example with specific discounts when using m-payment services. These efforts are expected to increase satisfaction and ultimately impact users' sustainability intentions when using M-payment services.

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