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Exploring Consumers' Discontinuance Intention of Remote Mobile Payments during Post-Adoption Usage: An Empirical Study

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Abstract: Despite being critical to continuous technology usage, research on remote mobile payments (m-payments) post-adoption usage has received much less attention. Furthermore, information systems usage research has traditionally been positively oriented, generally assuming that the inhibiting and enabling factors influencing technology usage as being the opposite sides of one dimension, which may result in overlooking antecedents to technology continuance. Therefore, this study aims to explore the inhibiting factors that may directly influence customers' intention to discontinue m-payments during post-adoption usage. Drawing on behavioral theories, information systems, and marketing research, this study explores the inhibiting factors directly influencing consumers' intentions to discontinue using m-payments. Survey data were collected from 254 current users in the UK and the PLS-SEM technique is employed to test hypotheses. The results show that poor quality of system, information, and service, as usage inhibitors, directly influence consumers' discontinuance intentions. Importantly, usage frequency is found to have no moderating effect on the inhibitors of continuance intention, supporting the notion about different and asymmetric effects that negative factors can have on technology usage compared to positive ones. This interesting finding suggests that negative user experience will have different and asymmetric effects on intentions to use m-payments than positive user experience.

Keywords: mobile payment; discontinuance intention**;** usage inhibitors; information system success model; asymmetric effect

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1. Introduction

Despite being critical to continuous technology usage, information systems (IS) discontinuance research has received much less attention compared to the voluminous research on adoption and acceptance (Putri et al. 2020; Recker 2016; Soliman and Rinta-Kahila 2020). Moreover, IS usage research has traditionally been positively oriented (Cenfetelli 2004), generally assuming that the inhibiting and enabling factors influencing technology usage as being the opposite sides of one dimension (Cenfetelli and Schwarz 2011), which may result in overlooking antecedents to technology continuance. In this regard, mobile technologies, due to their mass adoption and dynamic nature of usage (e.g., low switching costs), represent a viable opportunity to study these issues at the micro level.

Mobile technologies continue proliferating society, becoming a necessity in many areas. They support an assortment of digital services including ubiquitous payment solutions. Mobile payments comprise any payment for goods, services, or bills made via a mobile device such as smartphone or tablet computer through wireless communication networks such as mobile Internet or WiFi connections (Dahlberg et al. 2008; Gao et al. 2015). This type of payment is defined as remote m-payments in comparison to proximity

payments that are based on different wireless technologies such as radio frequency identification or near field communication (Slade et al. 2015; Zhou 2013). Consequently, there is likely to be significant differences in the factors affecting consumers' experience of using these two different types of m-payments. Compared to proximity m-payments, remote m-payments (thereafter m-payments) require more user engagement, effort, and time to complete purchase (Slade et al. 2014, 2015) and thus of interest to this study.

M-payments technology is important for modern economies, becoming one of the main drivers for mobile- and e-commerce success (Yang et al. 2012). In the emerging context of the global pandemic triggered by Covid-19, the demand for m-payments is growing at an unprecedented rate globally (Global Industry Analysts 2020). M-payments have relative advantages for both consumers and merchants, compared to conventional and online payment methods, as they can substitute cash, debit, or credit card payments as well as enable users to conduct payments at anytime from anywhere (Euromonitor International 2014). However, mobile devices have their inherited constraints in the form, for instance, of relatively small screen, inconvenient input, limited battery life, unstable connection or slow response time (Napoli and Obar 2014). Such constraints are likely to exert a negative effect on users' experience and subsequently inhibit their continuance usage (Meuter et al. 2000), impeding m-payments providers' ability to retain customers. Retaining customers and facilitating their continuance usage are critical for m-payment providers in achieving their profitability and sustainability (PWC 2016). In fact, research shows that acquiring new customers costs much higher than retaining existing ones (Coussement et al. 2010). Indeed, providers are not able to recover their investments in m-payments, and ultimately create profits, if consumers do not accept and use the technology continuously. While IS researchers have investigated this issue (e.g., Lu et al. 2017; Peng et al. 2013; Ruiz Díaz 2017; Zhou 2014b; Zhou and Lu 2011), two important gaps remain.

First, there is a dearth of research on m-payments continuance usage interrelated with limited knowledge on the impact of information technology (IT) artefact design on IT adoption and usage (Matook and Brown 2016; Soliman and Rinta-Kahila 2020). For almost the last two decades, pertinent literature has focused mainly on examining m-payments initial adoption and acceptance (Dahlberg et al. 2008; Dahlberg et al. 2015; Leong et al. 2020). However, despite being critical to m-payments providers' success, research on m-payments post-adoption usage has received much less attention. Few prior studies have focused on Chinese and Taiwanese consumers' continuance intention of m-payment services and revealed that trust and satisfaction (Hung et al. 2012), perceived usefulness, perceived ease of use, perceived enjoyment, and perceived cost (Chong 2013), privacy protection and social influence (Lu et al. 2017) can determine continuance intention to use m-payments. In addition, a more recent study on Mexican mobile buyers explored the drivers underlying the perception of compatibility between mobile purchasing and consumer life (Jimenez et al. 2019). Nevertheless, these studies focused on behavioral beliefs and attitudes which correspond to the use and consequences of usage behavior. Despite that these determinants can shed light on continuance usage intention of m-payments, they provide limited guidance on how to influence usage through design and implementation of the system in question (Taylor and Todd 1995; Venkatesh et al. 2003). For instance, when a user labels the system as easy to use, it remains unclear which particular components of the system are perceived to be easy to use and which are not, resulting in a lack of practical lessons for design (Benbasat and Barki 2007; Wixom and Todd 2005). Given this, the present study attempts to address the gap by examining m-payment users' disenchantment discontinuance intention, which occurs when there is dissatisfaction with the performance of the technology in question (Rogers 2003; Soliman and Rinta-Kahila 2020). Thus, we focus on the factors that correspond to object-based beliefs which can be measured by various subsets of beliefs about specific system and information characteristics (Wixom and Todd 2005). Unlike behavioral beliefs, object-based beliefs can describe critical attributes of the system, thus informing a better design of the system by providing specific design features to avoid (Taylor and Todd 1995; Wixom and Todd 2005). To our

best knowledge, very few studies have investigated the effect of object-based beliefs on m-payments continuance intentions (Zhou 2013), however, the effect on usage intentions has been measured indirectly through behavioral beliefs which may offer limited insights into the system design and implementation (Benbasat and Barki 2007; Wixom and Todd 2005). This implies that determining the magnitude of the direct influence of the factors on consumers' continuance intentions can provide instrumental insights to m-payments providers on how to increase customer retention. Given this, the present study builds upon the information system success (ISS) model (DeLone and McLean 2003) as the theoretical foundation. The ISS model suggests that system quality, information quality, and service quality, as object-based beliefs, directly affect intention to use, thus allows exploring direct relationships between technology artefact characteristics and continuance intention.

The second gap concerns the lack of knowledge about different and asymmetric effects that negative factors can have on technology usage compared to positive factors. Information systems (IS) usage research has traditionally been positively oriented, generally assuming that the factors of technology rejection are simply the opposite of the enabling factors (Cenfetelli 2004). However, consistent with previous findings (Bhattacherjee and Hikmet 2007; Cenfetelli and Schwarz 2011; Patsiotis et al. 2013), we assume that this is not always accurate. Drawing from prospect theory (Kahneman and Tversky 1979) that asserts that an individual is more sensitive to losses than gains, diagnosticity theory (Skowronski and Carlston 1987) that holds that negative beliefs are highly diagnostic, norm theory (Kahneman and Miller 1986) that suggests that compared to positive beliefs, negative beliefs are remembered better, garner more cognitive attention, and incite more information processing, and thus biasing positive beliefs, and social judgment theory (Yzerbyt and Leyens 1991) that claims that negative beliefs are more informative than positive, it can therefore be inferred that negative user experience will have different and asymmetric effects on intentions to use m-payments than positive user experience. More recent research provides additional support for the asymmetric nature of positive and negative factors and their different effects on technology usage (Cenfetelli and Schwarz 2011; Meuter et al. 2000; Sheng et al. 2011; Vargo et al. 2007). For instance, it has been found that inhibiting factors have a stronger influence and act solely to discourage use as well as they exist independently of enabling factors, which makes it very difficult, if not impossible, to compensate the inhibiting effect by adding enabling features to the system in question (Cenfetelli and Schwarz 2011; Johnston 1995). Such occurrences imply that users' intentions to continue using technology may depend as much on the presence of inhibitors as the presence of enablers (Cenfetelli and Schwarz 2011).

Accordingly, the purpose of this study is to address the above gaps by examining m-payments post-adoption usage from the perspective of inhibitors. Drawing on research that argues that IS discontinuance merits its own theorizing, which seems separate from IS continuance (Maier et al. 2015; Pollard 2003; Turel 2016), we follow Soliman and Rinta-Kahila (2020) and focus specifically on users' discontinuous rather than continuous intentions, since these two intentions are qualitatively different with regard to the ultimate user behavior: not using versus using the technology (Rogers 2003). Following this, we posit our main research question as: What inhibiting factors can directly influence consumers' intention to discontinue m-payments? To answer this question, we build upon the theoretical foundation of the information system success model (DeLone and McLean 2003) to develop and empirically test a conceptual model that captures the inhibiting object-based beliefs directly influencing consumers' intention to discontinue using m-payments. Importantly, the asymmetric effect of inhibiting factors on users' intentions was specifically checked by testing a moderating effect of m-payments usage frequency on the antecedents of discontinuance intention.

Overall, this study makes three significant contributions to the IS and marketing literature. First, unlike other scholarly work focusing largely on the initial adoption of m-payments, this study investigates consumers' discontinuance intentions during post-

adoption usage, thus contributing to the scarce research on this stage (Putri et al. 2020). To the best of our knowledge, the present study is amongst the first that have identified artefact-related factors that directly inhibit consumers' discontinuance intentions of m-payments (Soliman and Rinta-Kahila 2020). This extends our knowledge on the existence of the antecedents that directly and significantly affect usage intentions and provides another dimension for investigation in the m-payments research. Second, this study, perhaps, the first to show that m-payments usage frequency does not have a moderating effect on users' discontinuance intentions. This important finding implies that the presence of inhibiting factors will likely result in users' intention to discontinue using m-payments regardless of how often the technology is being used. Third, we extend prior IS research on the inhibitors of technology usage intentions to m-payments post-adoption context, and more importantly, contrary to some arguments in the literature (e.g., Wixom and Todd 2005), the study shows empirically that negative object-based beliefs as artefact-related factors are likely to be directly predictive of usage intentions, showing a relatively strong prediction of the intentions. Such finding infers that inhibitors as object-based beliefs may have a unique and significant effect on usage intentions, thus provides an additional empirical support (e.g., Cenfetelli and Schwarz 2011) for the premise that inhibitors and enablers are dual-factored constructs (Cenfetelli 2004).

2. Theoretical Background

2.1. Remote Mobile Payments

Mobile payment includes two overarching types: remote payment and proximity payment (Chandra et al. 2010; Slade et al. 2015). The distinction between these two types is based on the location of the user in relation to the vendor. This implies using different software and wireless technology used to enable transactions. Researchers (Chandra et al. 2010; Dahlberg et al. 2008; Lu et al. 2011), define remote m-payments as a combination of payment systems, mobile technology and services that enable consumers to transfer money over mobile network or wireless communication technologies using mobile devices. This umbrella term encompasses five key entities: the mobile device manufacturer (e.g., Samsung or Apple), the mobile network provider (e.g., Vodafone), the mobile payment vendor (e.g., e-commerce website), the mobile payment software developer, and the financial institution (e.g., bank). Building on previous research on m-payments (Gao et al. 2015; Slade et al. 2015; Wang et al. 2015), this study defines remote m-payment as a package of services that enables consumers to conduct payments for goods, services, or bills using smartphones or tablet computers via mobile Internet or wireless local area network (i.e. WiFi). As suggested by recent global marketing study, "amid the COVID-19 crisis and the looming economic recession, the Remote Mobile Payments market worldwide will grow by a projected US $22.4 Trillion" (Global Industry Analysts 2020). This fortifies the importance of studying this type of m-payments.

2.2. User Beliefs and System Design

The extant research so far has focused mainly on examining m-payments initial adoption (Dahlberg et al. 2008, 2015; Putri et al. 2020) from multiple theoretical perspectives, including the technology acceptance model (TAM) (Schierz et al. 2010; Kim et al. 2010; Song et al. 2015), the unified theory of acceptance and use of technology (UTAUT) (Abrahão et al. 2016) and the diffusion of innovation theory (Mallat 2007). Overall, these studies have found that consumer's intention to adopt m-payment technologies is mainly influenced by perceived usefulness, ease of use, risk, and trust. However, while it is important to understand the factors facilitating the initial adoption of technologies, it would also seem to be important to explore factors influencing post-adoption usage of the technologies.

In contrast to initial adoption, few studies have focused on consumers' continuance intention of m-payment services, despite being critical to m-payments providers' success.

Hung et al. (2012) incorporated trust into the expectancy confirmation model (ECM) to examine post-adoption usage of m-payments, postulating that trust and satisfaction are major determinants of continuance usage of m-payments. Chong (2013) combined TAM and ECM and found that in addition to trust and satisfaction, perceived usefulness, perceived ease of use, perceived enjoyment, and perceived cost have significant influence on consumers' continuance intentions. Lu et al. (2017) extended ECM with privacy, social influence, and mobility (pervasive and timely connections), and revealed that privacy protection and social influence beliefs drive users' continuance intentions towards m-payments, while mobility belief had an indirect effect on the intentions. In a more recent study on Mexican mobile buyers, Jimenez et al. (2019) explored self-efficacy and innovativeness (more intrinsic to the user), and involvement and entertainment (more extrinsic to the user—relating to purchases) as drivers underlying the perception of compatibility between mobile purchasing and consumer life. However, these determinants refer to users' behavioral beliefs that correspond to the use and consequences of usage behavior, and thus they can only provide a limited guidance on how to influence usage through system design and implementation, such as adding certain features or improving characteristics of the system in question (Taylor and Todd 1995; Venkatesh et al. 2003). For example, when a provider receives feedback that users perceive the system as easy to use, it remains unclear which particular components of the system are perceived to be easy to use and which are not, resulting in a lack of practical guidance for improving design (Benbasat and Barki 2007; Wixom and Todd 2005).

Unlike behavioral beliefs, object-based beliefs can describe critical attributes of the system, thus informing a better design of the system by prescribing what specific design features should be avoided (Cenfetelli and Schwarz 2011). Users' object-based beliefs correspond to the system itself and its attributes, such as system reliability and responsiveness, or the currency and completeness of information provided, making it a potentially useful diagnostic for system design (Wixom and Todd 2005). This can offer several instrumental insights to managers and system developers regarding how m-payments could be developed, improved, and marketed more effectively, thus increasing consumers' retention. However, very few studies have investigated the effect of object-based beliefs on m-payments continuance intentions (Putri et al. 2020). Zhou (2013) examined post-adoption usage of m-payments by adding to the ISS model trust and flow, and identified that service quality, information quality, and service quality subsequently influence users' continuance intentions through mediation of trust, flow, and satisfaction. Yet, in Zhou's study, the effect on usage intentions has been measured indirectly through behavioral beliefs which still may offer limited insights into the system design and implementation (Benbasat and Barki 2007; Wixom and Todd 2005). This implies that determining the magnitude of the direct influence of the factors on consumers' discontinuance intentions can provide valuable insights to m-payments providers on how to increase customer retention. Therefore, the present study strives to address this gap by focusing on the factors influencing disenchantment discontinuance intention that refers to abandoning technology by users due to their dissatisfaction with the performance of the technology (Rogers 2003). Although discontinuance can occur when a user decides to replace an inferior technology with a superior one (Soliman and Rinta-Kahila 2020), this study specifically focuses on exploring the factors influencing users to abandon m-payments due to their technological shortcomings, which can provide instrumental insights, ultimately leading to the creation of higher-quality m-payments.

The information system success model is employed as a theoretical foundation for this study. The ISS is a robust model that is based on object-based beliefs (DeLone and McLean 1992, 2003). It identifies beliefs that reflect system quality, information quality, and service quality, which affect intention to use and user satisfaction of the system. The information quality belief reflects information completeness, ease of understanding, personalization, relevance, and security; the system quality belief reflects system usability,

availability, reliability, adaptability, and response time; and the service quality belief reflects the overall support delivered by the service provider such as assurance, empathy, and responsiveness (DeLone and McLean 2003). Numerous studies in the IS literature have supported the influence of system, information, and service quality on use and usage intentions (DeLone and McLean 2003; Petter et al. 2013). These constructs are considered as "some of the most widely studied antecedents to use and usage intentions" in the IS literature (Cenfetelli and Schwarz 2011, p. 810). Consequently, this study builds upon the ISS model as a theoretical basis, on which the research model is drawn, since it can provide a useful base for identifying and examining the underlying structure of the system, information and service characteristics of m-payments.

2.3. Asymmetric Effect of Inhibiting Factors

The IS literature has particularly focused on the enabling factors leading to technology adoption, acceptance, and use (Dahlberg et al. 2008, 2015; Hoehle et al. 2012; Leong et al. 2020; Putri et al. 2020). Dominant IS theories such as TAM (Davis 1989; Davis et al. 1989), UTAUT (Venkatesh et al. 2003), and the ISS model (DeLone and McLean 1992, 2003) focus exclusively on users' positive beliefs regarding technology. Although these positive beliefs such as usefulness, reliability, and system flexibility are important in predicting users' intentions to accept technology, it might not be sufficient to compensate system design flaws by offering some better design features (Cenfetelli and Schwarz 2011). Likewise, Johnston (1995) notes that since the impact of dissatisfying service transactions on overall evaluation tends to outweigh satisfying transactions, identification and removal of fail points of the service delivery process are much more important for managers than adding delight factors into the process. In the m-payments context, design shortcomings may result in users' inability to complete a payment transaction or even in loss of money which is unlikely to be compensated by providing additional design features. During post-adoption usage, users' initial expectations might shift due to some design flaws which in turn may influence their decision between continuing and discontinuing m-payment usage. The important question here whether it would be sufficient to focus on enabling factors, assuming that users' intention to continue using technology in question is determined by the quality and quantity of their positive beliefs, or it is important to rather consider the possible ultimate effect of inhibiting factors on users' continuance intentions. Diverse literature in psychology suggests that negative aspects of an object are weighted more heavily by individuals than positive aspects in their judgements (Kahneman and Tversky 1984; Peeters and Czapinski 1990; Skowronski and Carlston 1989). Negative experiences, in contrast to positive ones, tends to be unexpected and thus provides an alternative account for the impact of negative experience on impressions (Taylor 1991). Psychological research has increasingly argued that positive and negative affect must be sought of as qualitatively distinct phenomena (e.g., Berscheid 1983; Diener and Emmons 1985; Isen 1984; Watson et al. 1988). Focusing solely on the enabling factors leading to technology use may overlook the antecedents of technology discontinuance, limiting research implications. We therefore argue that from both theoretical and practical perspectives, the emphasis should be shifted to the factors that inhibit use, in other words, leading to users' discontinuance intentions as it would contribute to the emerging literature on IS discontinuance (Soliman and Rinta-Kahila 2020) while also providing instrumental insights to develop effective customer retention strategies.

Despite the inherent, if explicitly unstated, assumption that technology design should focus solely on the "good" fosters positive user attitudes, and encourages system use (Cenfetelli 2004, p. 473) while supposing that the inhibitors of technology usage are simply the opposite of enablers (Cenfetelli and Schwarz 2011), increasing attention has been given to inhibitors and their role in technology adoption, acceptance, and use. Some studies have started to focus on negatively oriented antecedents to technology acceptance including website download delays (Galletta et al. 2004; Rose and Straub 2001), website design dissatisfiers (Zhang and von Dran 2000), website presentation flaws (Everard and

Galletta 2006), effects of interruptions, task complexity, and information presentation (Speier et al. 2003), anxiety and computer-mediated communications (Brown et al. 2004), resource barriers (Mathieson et al. 2001), loss of control (Bhattacherjee and Hikmet 2008), lack of knowledge (Chau 2001; Venkatesh and Brown 2001), lack of IT support (Chau 2001), resistance to IT (Lapointe and Rivard 2005), distrust in e-commerce (McKnight et al. 2003), risk of internet fraud (Grazioli and Jarvenpaa 2000; McKnight et al. 2002; Pavlou 2003), and IT-related job overload (Ahuja and Thatcher 2005; Thatcher et al. 2003). More recently, Laukkanen and Kiviniemi (2010) investigated the role of information in mobile banking resistance and identified that the lack of guidance and information are inhibiting factors for consumers. Durkin et al. (2008) found that lack of face-to-face contact, trust, and security reassurance would negatively influence consumers' usage of online banking. Cenfetelli and Schwarz (2011), while studying users of e-commerce websites, found that inhibitors exist independently from enablers, behave differently than enablers, and apart from making usage intention less likely, inhibitors also jeopardize other positive aspects of the system. It can therefore be implied that users' intentions to continue using technology may depend more on the presence of inhibitors than on enablers (Cenfetelli and Schwarz 2011). This fortifies the argument that focusing on inhibiting factors could identify previously overlooked antecedents to technology continuance which might be difficult, if not impossible, to identify through the "positive" perspective.

The above argument regarding distinct characteristics of inhibitors can be further supported by a number of behavioral theories conveying about a greater impact of the negative over the positive. Prospect theory (Kahneman and Tversky 1979) asserts that an individual is more sensitive to losses than gains. For instance, the loss of £5 due to an m-payment transactional error is felt more strongly than the gain of £5 as a monthly bonus for using the service. There exists a distinct asymmetry between negative and positive attributes, although they have a similar magnitude (Kahneman and Tversky 1979). Kahneman and Miller (1986) extend this tenet further to the role of negative beliefs on decision making and impression, establishing norm theory. This theory holds that in comparison to positive beliefs, negative beliefs are remembered better, garner more cognitive attention, and incite more information processing and thus, biasing positive beliefs. Because of these biases, negative attributes overshadow positive ones when a target object with those attributes is assessed, according to diagnosticity theory, which holds that negative beliefs are highly diagnostic (Skowronski and Carlston 1987). Adding to this, social judgment theory also holds that negative beliefs are more informative than positive (Yzerbyt and Leyens 1991). For example, it is far more likely that a person who tells a single lie is judged as dishonest, than a person who tells one truth is judged as honest. Extending this principle to the m-payments context, a mobile payment technology that fails to complete one transaction is far more likely to be judged as unreliable, than a technology that completes one transaction is judged as reliable.

Further, there have been a number of related studies that conveyed a stronger influence of the negative over the positive. Parthasarathy and Bhattacherjee (1998) found that negative word-of-mouth was asymmetrically more predictive of discontinuance than continuance usage of online services. Gauggel et al. (2000) identified that individuals respond more quickly to negative than to positive stimuli. Meuter et al. (2000) found that more self-service technology consumers were likely not to use the technology again and not to recommend it to a friend, compared to those who would still exhibit positive future behavior, when there were design problems. More recent research provides additional support for the asymmetric nature of positive and negative factors and their different effects on technology usage. Vargo et al. (2007) revealed from marketing research literature that dissatisfiers have priority over satisfiers and thus the elimination of dissatisfiers is a prerequisite to enhancing customer satisfaction through satisfiers. Greitemeyer and Kazemi (2008) identified that learning is more effective through punishment than reward. Sheng et al. (2011) found that negative attribute-level performance of online social networking applications on users' satisfaction had a larger effect on behavioral intention than positive

attribute-level performance. Similarly, G. Patsiotis et al. (2013) revealed that some of the factors explaining non-adoption behavior of Internet banking users are not the opposite of those factors explaining adoption behavior and that they represent different dimensions. These implications conform with previous findings by Lewicki et al. (1998), which argue that trust and distrust are not mutually exclusive opposites but are dual-factors. For example, the notion about "trust but verify" implies that trust and distrust may coexist between two parties. Extending these implications to the m-payments context, users may trust their m-payment provider when they transact a relatively small amount of money, but at the same time, they distrust the provider if they do not use their mobile devices to transact several hundred pounds, which is often the case (Statista 2014).

In sum, these studies and the above theories support the argument that inhibiting factors are distinct from enabling factors. Therefore, it can be suggested that inhibiting factors may have greater and distinct influence on intentions to (dis)continue using m-payments as presented next.

3. Research Model and Hypotheses Development

As noted above, in contrast to the enabling factors, the inhibiting factors may have a stronger influence and act solely to discourage use as well as they exist independently which makes it very difficult, if not impossible, to compensate the inhibiting effect by adding additional enabling features to the system in question (Cenfetelli and Schwarz 2011; Johnston 1995). Hence, drawing from prospect theory (Kahneman and Tversky 1979) that asserts that an individual is more sensitive to losses than gains, diagnosticity theory (Skowronski and Carlston 1987) that holds that negative beliefs are highly diagnostic, norm theory (Kahneman and Miller 1986) that suggests that compared to positive beliefs, negative beliefs are remembered better, garner more cognitive attention, and incite more information processing, and thus biasing positive beliefs, and social judgment theory (Yzerbyt and Leyens 1991) that claims that negative beliefs are more informative than positive, it can therefore be inferred that negative user experience will have different and asymmetric effects on intentions to use m-payments than positive user experience. More recent research provides some support for the asymmetric nature of positive and negative factors and their different effects on technology usage (Cenfetelli and Schwarz 2011; Meuter et al. 2000; Sheng et al. 2011). Accordingly, this study examines m-payments post-adoption usage, and specifically users' discontinuous intentions, from the perspective of inhibitors.

The research model builds upon the information system success (ISS) model (DeLone and McLean 2003) as the theoretical foundation. The ISS model suggests that system quality, information quality and service quality, as object-based beliefs, directly affect intention to use, thus allows exploring direct relationships between technology artefact characteristics and continuance intention. However, for the purposes of this study, we modify the ISS model to investigate users' discontinuous intentions from the perspective of inhibitors. In this regard, IS research that concerns discontinuance has illustrated that IS discontinuance relies on factors and effects different from those used for explaining IS continuance, thereby merits its own theorizing (Maier et al. 2015; Pollard 2003; Turel 2016). Thus, we follow Soliman and Rinta-Kahila (2020) and focus specifically on users' discontinuous rather than continuous intentions, given these intentions are qualitatively different in terms of the ultimate user behavior: quitting an IS use versus (still) using it (Rogers 2003). For example, Soliman and Rinta-Kahila (2020) argue that "while decreasing usage could be a significant predictor of IS discontinuance behavior (Khan et al. 2015), … it should not be considered as a reflection of discontinuance" (p. 10).

While modifying the ISS model to fit this study's purposes, we disregard the user satisfaction dimension of the model because this dimension may unnecessarily complicate, or even confuse the research model due to its indirect effects on the dependent variable, discontinuous intentions. Research shows that user satisfaction is *directly* associated with a user's state of continued IS use rather than with a user's move to discontinued use

by terminating IS usage (Bhattacherjee 2001). For example, it was reported that satisfaction with the system has a positive but *indirect* impact on discontinuance intentions (Turel 2015). As such, while it might be useful to investigate the role of user dissatisfaction with an IS during the post-adoption usage, this dimension falls out of the scope of this study. For this purpose, we particularly focus on the artefact-related factors *directly* influencing disenchantment discontinuance intention that refers to abandoning technology by users (Rogers 2003). Further, while we acknowledge that discontinuance can occur when a user decides to replace an inferior technology with a superior one (Soliman and Rinta-Kahila 2020), we limit our investigation on exploring the artefact-related factors influencing users to abandon m-payments due to their technological shortcomings, which can provide instrumental insights ultimately leading to the creation of higher-quality m-payments. Next, we devise the corresponding propositions, translating into the research model illustrated in Figure 1.

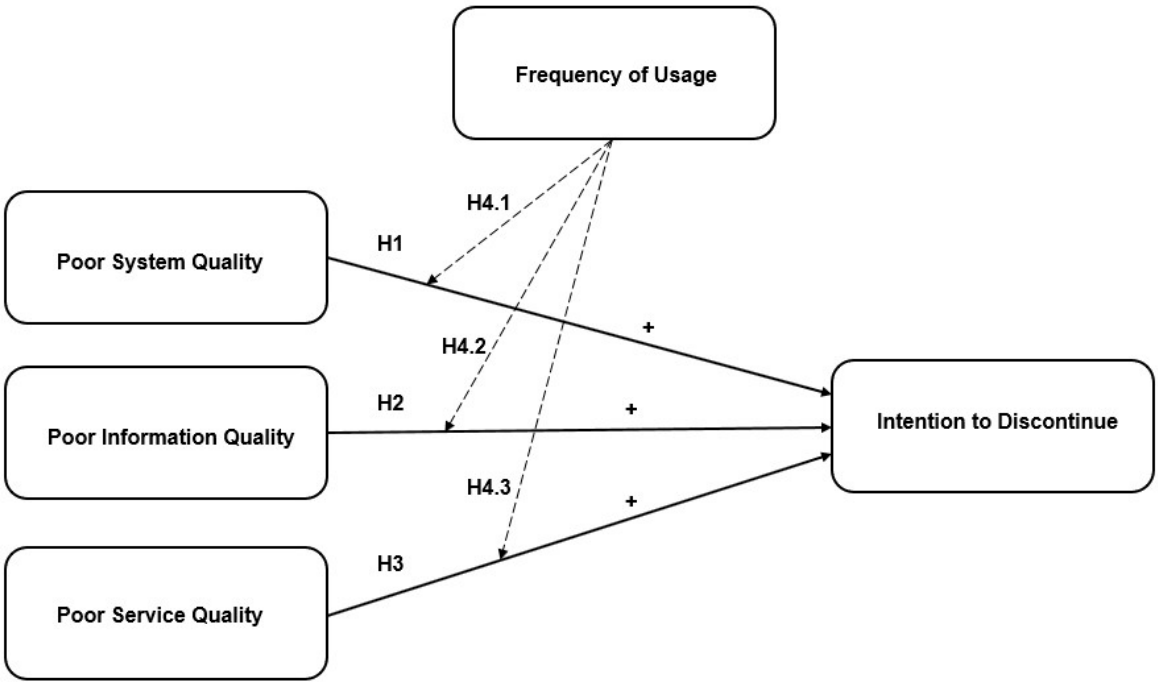

Figure 1. The research model.

System quality of m-payments in this study represents the access speed, usability, navigation, and visual appeal. Consumers tend to feel unsatisfied if their needs or expectations are not met, and consequently their psychological need dissatisfaction may directly affect their behavioral intention (Hagger et al. 2006). Indeed, if users are not satisfied with the quality of the system they use, they may discontinue their usage (Cenfetelli and Schwarz 2011; DeLone and McLean 2003, 2004; Zhou 2013). In this vein, Gao et al. (2015) found that system quality affects mobile shoppers' continued purchase intention. Thus, we suggest:

Hypothesis 1 (H1). *Poor system quality is positively related to user's behavioral intention to discontinue using m-payments.*

Information quality of m-payments in this study represents information relevance, sufficiency, accuracy, and timeliness. Receiving poor-quality information may negatively affect user experience and decrease their satisfaction (Zhou 2013), signaling that something is wrong with the system and thus contributing to user rejection (Cenfetelli and Schwarz 2011). Koivumäki et al. (2008) showed that information quality has a statistically

significant positive relationship with user satisfaction, which in turn has a positive relationship with the intention to use a mobile service again. Thus, we suggest:

Hypothesis 1 (H2). *Poor information quality is positively related to user's behavioral intention to discontinue using m-payments.*

Service quality of m-payments in this study represents reliability, responsiveness, assurance, and personalization of the services that users expect to receive. Kuo et al. (2009) found that service quality positively influences post-purchase intentions in mobile value-added services. In addition, Cheng et al. (2013) showed that service quality of m-banking has a positive influence on consumers' behavioral intentions to use m-banking. According to DeLone and McLean (2003), if overall service quality delivered by the service provider is poor, it may translate into lost customers. Thus, we suggest:

Hypothesis 1 (H3). *Poor service quality is positively related to user's behavioral intention to discontinue using m-payments.*

Consumers' frequency of using technology fosters the formation of inertia to change (Polites and Karahanna 2012), which may negatively affect the influence of inhibiting factors, such as poor system quality, poor information quality, and poor service quality, on users' behavioral intentions to discontinue m-payments. However, the inhibiting factors may have different, asymmetric effect on users' continuance intentions. Particularly, behavioral theories cited above convey about a greater impact of the negative beliefs over the positive ones. Further, psychological research (e.g., Kahneman and Tversky 1984; Peeters and Czapinski 1990) suggests that negative aspects of an object are weighted more heavily by individuals than positive ones; whereas marketing research (e.g., Vargo et al. 2007) conveys that dissatisfiers have priority over satisfiers. Finally, IS research (e.g., Cenfetelli and Schwarz 2011; Meuter et al. 2000; Parthasarathy and Bhattacherjee 1998; Sheng et al. 2011) provides additional support for the asymmetric nature of negative factors and their different effects on technology usage. Hence, we hypothesize:

Hypothesis 4.1 (H4.1). *M-payments usage frequency has no effect on the relationship between poor system quality and user's behavioral intention to discontinue using m-payments.*

Hypothesis 4.2 (H4.2). *M-payments usage frequency has no effect on the relationship between poor information quality and user's intention to discontinue using m-payments.*

Hypothesis 4.3 (H4.3). *M-payments usage frequency has no effect on the relationship between poor service quality and user's behavioral intention to discontinue using m-payments.*

4. Methodology

4.1. Study Context and Timeliness

The study was conducted in the United Kingdom (UK), which despite being amongst the most mature smartphone markets in the world with about 68% of adults who reported owning a smartphone (Pew Research Center 2016), m-payments have gained limited adoption and further utilization in the UK compared to other developed countries. In 2015, the UK showed one of the lowest growth of sales by mobile devices in Europe (Centre for Retail Research 2015), as well as despite nearly three-quarters of British consumers are mobile payment users, the UK is not amongst the top ten countries with the highest proportion of mobile payments users (VISA 2016). Yet, a more recent survey found that the UK still shows a moderate adoption of m-payments, lagging behind many other countries with a high and very high adoption rates (Enberg 2019). Motivated by this, the present study took the UK as an excellent context in which the conceptual model can be tested.

In terms of the relevance of the present study to the current context of m-payments, the suggested technological challenges that can potentially contribute to m-payment users' discontinuous intentions appear to be still pertinent. For example, it was found that there are still issues related to mobile network coverage (Hutton and Baker 2019; OFCOM

2020a), WiFi connection (OFCOM 2020b), mobile phone batteries (Uswitch 2020), m-payment transactional or personal information (PwC 2019), and speed of m-payment service (Nicholds 2020). All these (ongoing) issues can result in poor system, information, or service quality of remote m-payments defined as a combination of payment systems, mobile technology, and services that enable consumers to transfer money over mobile network or wireless communication technologies using mobile devices. Taken together, this fortifies the relevance of this study's results to the existing context of m-payments.

4.2. Sampling and Data Collection

Given the absence of secondary data on this topic, a survey through web-based questionnaire was adopted. This study targeted residents of the UK who use m-payments and are 18 years old or over. The web-based questionnaire was set to automatically terminate if the respondent did not meet certain criteria (either nonusers of m-payments, non-UK residents, or individuals who are less than 18 years old). According to a recent consumer mobile payment study, there were approximately 30 million smartphone owners in the UK, who were at least 18 years old (TSYS 2015). Another study, conducted by VISA, found that 74% of UK consumers are mobile payment users (VISA 2016), which represents approximately 22.2 million people (out of about 65 million) who use their mobile devices to make payments. Therefore, this constitutes the approximate population of interest of this study. As m-payments in the UK are still in their emergence stage, there was no possibility to obtain a reliable sample frame from which a probability sampling can be conducted. Under these circumstances, non-probability sampling was adopted (Stangor 2011). Consequently, a convenience sampling technique with further utilization of a snowball sampling was used in this study. The respondents who were eligible and agreed to participate were asked to distribute the questionnaire to at least two other potential respondents. Since one of the objectives is to statistically validate the proposed hypotheses of this study, there are certain requirements regarding the number of valid responses that should be obtained to statistically validate the hypotheses and to increase the reliability of the research findings. There exist recommendations for an appropriate sample size in the literature, suggesting that item-to-response ratios may range from 1:4 (Rummel 1970) to 1:10 (Schwab 1980) in order to achieve useful estimation. Therefore, the base sample size that would be necessary to provide relatively appropriate representation of the population for 15 measuring items of the questionnaire may range from 60 to 150 valid responses. Data were collected and then initially processed such as frequency testing using a web platform Google Docs. Further, every attempt was taken to ensure that a web-link to the web-based questionnaire was sent to participants representing various demographic and socio-economic groups. A professional network LinkedIn, which allows to identify its users' certain demographic and socio-economic characteristics, was used to distribute the web-link to more than 80 potential participants with diverse characteristics. The data collection took place during March 2017. Participation was voluntary, and no incentives were offered or given. A total of 295 surveys were obtained; however, only 254 of these met the selection criteria. Thus, the usable response rate of the survey was 86.1%. The sample consisted of almost an equal proportion of males and females, 50.4% and 48.8%, respectively.

4.3. Survey Instrument

In order to ensure the validity of the instrument, the items were taken from the pertinent literature and then modified to fit the context of this study. The measurement of 12 items for the independent variables and 2 items for the dependent variable were adapted from Bhattacherjee et al. (2012), Kim et al. (2010), Recker (2016), and Zhou (2013) to confirm the reliability and validity of the constructs. All items for the independent and dependent variables were measured using a 5-point Likert scale anchored by "Strongly Agree" to "Strongly Disagree". The item for the moderating variable was measured using a 5-point rating scale anchored by "daily", "a few times a Week", "a few times every Two

Weeks", "a few times a Month", and "a few times a Year". Before publishing the questionnaire online, a pilot test was conducted to 11 respondents to eliminate any inconsistency, examine the format and design of the questionnaire, and verify that the wording was readable and clear for all respondents (Stangor 2011). No issues were identified. However, it is important to note that during the pilot test, 9 out of 11 respondents stated that using wording "discontinue", rather than "continue", in the questionnaire creates less confusion and is more directly related to a user' intention to discontinue using the technology. Detailed measurement items are presented in Appendix A. The frequency of using mobile devices by respondents to make payments and major tendencies related to main constructs are presented in Appendix B.

5. Analysis and Hypotheses Testing

In this study, survey data were collected from 254 current users in the UK and the partial least squares (PLS) approach to the structural equation modeling (SEM) technique was adopted. As an alternative paradigm to covariance-based SEM, PLS-SEM has minimal demands on distribution assumption, sample size, and measurement scales whereas it enables multi-group analysis and moderation effect testing (Garson 2016; Kock and Hadaya 2018; Monecke and Leisch 2012; Hair et al. 2011, 2014) which are both used in this study. Importantly, PLS-SEM does not require sound theory base and hence is preferable because the proposed conceptual model is in the exploratory stage (Chin 2010; Garson 2016). Using PLS-SEM to assess the research models (e.g., Nugraheni et al. 2020; Leong et al. 2020; Yan et al. 2021) including a multi-group analysis (e.g., Tan et al. 2019) is a relatively established approach in the field (Kock and Hadaya 2018), we thus follow these recent studies and adopt this technique.

5.1. The Measurement Model

To validate the measurement model, item-to-construct loadings were first checked, then internal consistency reliability, convergent validity, and discriminant validity were assessed. A first run of the PLS algorithm revealed that one item had item-to-construct loading value less than 0.4; thus, following the recommendations of Raubenheimer (2004), item SYSQ4 was removed. The composite reliability (CR) and Cronbach's alpha (CA) values were used to examine internal consistency reliability. Table 1 shows that CR values for all constructs were ranging between 0.863 and 0.924, which satisfied the commonly acceptable level (above 0.7) proposed by Fornell and Larcker (1981). As shown in Table 1, CA values were above 0.7, ranging between 0.794 and 0.839 and were higher than the acceptable level recommended by Nunnally and Bernstein (1994). The results therefore showed that both CA and CR values for all constructs were reliable.

Table 1. Measurement model results.

	Factor Loadings	Cronbach's Alpha (CA)	Composite Reliability (CR)	Average Variance Extracted (AVE)
Discontinuance Intention (ID)		0.836	0.924	0.859
ID1	0.933			
ID2	0.920			
Information Quality (INFQ)		0.839	0.888	0.668
INFQ1	0.899			
INFQ2	0.921			
INFQ3	0.729			
INFQ4	0.695			
Service Quality (SERQ)		0.794	0.863	0.614
SERQ1	0.811			
SERQ2	0.87			
SERQ3	0.629			

SERQ4	0.803			
System Quality (SYSQ)		0.807	0.886	0.722
SYSQ1	0.800			
SYSQ2	0.878			
SYSQ3	0.868			

In this study, two criteria were used (Fornell and Larcker 1981; Hair et al. 2010) to assess convergent validity. First, item-to-construct loadings should be significant and greater than 0.5 (Wixom and Watson 2001). Second, the average variance extracted (AVE) of each construct should be greater than the threshold value of 0.5 (Chin 1998). Table 1 shows that all item-to-construct loadings exceed 0.5 and the AVE values ranging between 0.614 and 0.859, with all values exceeding the acceptable level of 0.5. All the item-to-construct loadings and AVE values supported the convergent validity of the constructs. Further, discriminant validity was confirmed by three criteria: as shown in Table 2, all item-to-construct loadings on their assigned construct exceeded their loadings on any other constructs (Chin 1998; Gefen and Straub 2005), the square root of the AVEs of a construct were greater than the correlations amongst the constructs in the model (Fornell and Larcker 1981), as shown in Table 3, and proposed by Henseler et al. (2015), heterotrait-monotrait ratio of correlations criterion was below 1.0 (Table 4). Further, the values of variance inflation factor (VIF) showed no collinearity among items and no collinearity among constructs (VIF values between 1.39 and 4.09), adhering to the threshold value of 5 (Hair et al. 2010).

Table 2. Factor loadings and cross-loadings for the measurement model.

	Discontinuance Intention (ID)	**Information Quality (INFQ)**	**Service Quality (SERQ)**	**System Quality (SYSQ)**
ID1	***0.933***	0.539	0.64	0.626
ID2	***0.920***	0.505	0.572	0.586
INFQ1	0.569	***0.899***	0.529	0.388
INFQ2	0.558	***0.921***	0.554	0.370
INFQ3	0.307	***0.729***	0.498	0.363
INFQ4	0.313	***0.695***	0.541	0.318
SERQ1	0.473	0.514	***0.811***	0.455
SERQ2	0.580	0.571	***0.870***	0.526
SERQ3	0.283	0.454	***0.629***	0.374
SERQ4	0.620	0.470	***0.803***	0.521
SYSQ1	0.596	0.368	0.563	***0.800***
SYSQ2	0.542	0.368	0.517	***0.878***
SYSQ3	0.520	0.370	0.454	***0.868***

Note: Bold italic values indicate all analyses that are significant at $p < 0.05$.

Table 3. Correlations of constructs and the square root of the AVEs.

	ID	INFQ	SERQ	SYSQ
ID	***0.927***			
INFQ	0.564	***0.817***		
SERQ	0.655	0.636	***0.784***	
SYSQ	0.655	0.435	0.607	***0.850***

Note: Bold italic values on diagonal are square root of the AVEs.

Table 4. Heterotrait-monotrait ratio of correlations criterion.

	ID	INFQ	SERQ	SYSQ
ID				
INFQ	0.635			
SERQ	0.761	0.803		
SYSQ	0.792	0.533	0.741	

The data were collected through a self-report survey, thus common method bias (CMB) issues may have occurred. To test possible CMB, following Podsakoff et al. (2003), a Harman's one-factor test was conducted. All measured items of the conceptual model were subjected to an exploratory factor analysis (principle components analysis) with no rotation in SPSS. The results showed that all produced factors had eigenvalues larger than 1. These factors accounted for 67.87 per cent of the variance, with the first factor alone explaining 45.7 per cent, hence variables in the model load on more than one factor. An additional test to detect possible CMB was conducted as suggested by Pavlou et al. (2007). In this instance, a visual inspection of the correlations of the model variables indicated the highest value of 0.655 which was well below the threshold of 0.90 (Table 3). As such, the results of these two tests allow to conclude with some confidence that there is no systematic CMB bias in the data (Turel and Serenko 2012).

In aggregate, internal consistency reliability, convergent and discriminant validity are empirically supported, demonstrating the sufficient construct reliability and validity of the scales, whereas multicollinearity and CMB are not considered an issue for the measurement model.

5.2. The Structural Model

The proposed hypotheses were tested with bootstrap re-sampling estimations of PLS, as proposed by (Hair et al. 2014). The test of the structural model consisted of the coefficients of determination, and path coefficients using a bootstrapping re-sampling technique with 5000 sub-samples.

The main effect model was examined first. Figure 2 shows the results for the conceptual model's main effects, showing the standardized path coefficients (β) among the constructs, p-values, and the variance explained (R^2). The R^2 value for discontinuance intention was 0.561, explaining 56.1 per cent of the variance, and the path coefficients of H1, H2, and H3 were statistically significant (Table 5). Thus, the findings supported H1, H2, and H3. System quality, information quality, and service quality have significant and positive effects on discontinuance intention. All the path coefficients and explained variances for the model are shown in Figure 2. Further, gender characteristic collected about the sample respondents was tested as possible control variable by assessing its path coefficients to the endogenous variables of the model. No changes in the measurement model were noticed.

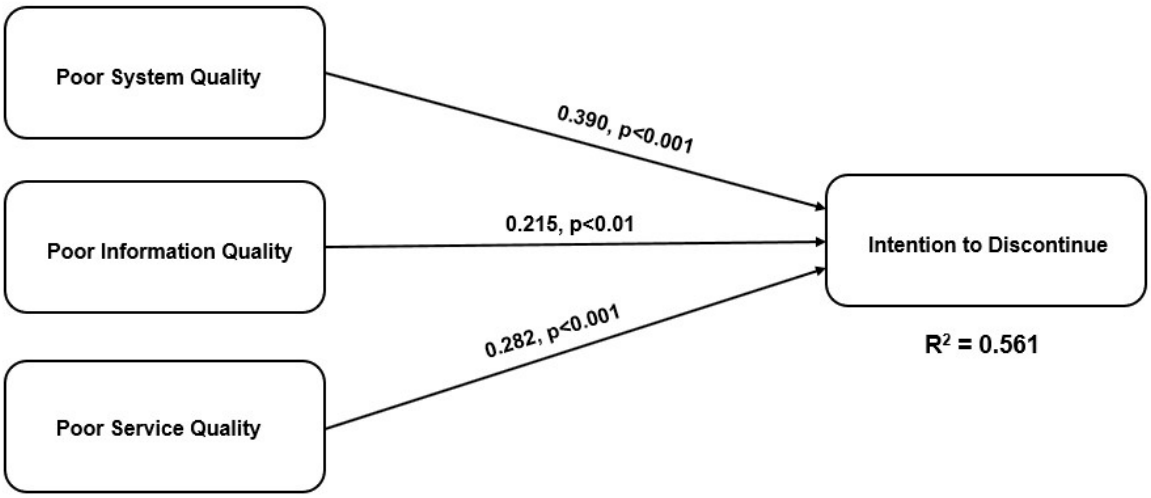

Figure 2. Results of main effects of PLS bootstrap estimation.

Table 5. Summary of hypotheses testing results.

Hypothesis	Structural Path	Proposed Effect	Path coefficients (β)	*t*-Value	*p*-Value	Result
H1	SYSQ → ID	+	0.390	7.591	0.000	Supported
H2	INFQ → ID	+	0.215	3.431	0.001	Supported
H3	SERQ → ID	+	0.282	3.596	0.000	Supported
H4.1 †	USE↓ (SYSQ → ID)	No effect	0.090	1.126	0.260	Supported
H4.2 †	USE↓ (INFQ → ID)	No effect	0.033	0.343	0.732	Supported
H4.3 †	USE↓ (SERQ → ID)	No effect	-0.032	0.332	0.740	Supported

Note: †—moderating effect.

To test the moderating effects within the PLS method, two approaches were suggested by Henseler and Fassott (2010): the product-indicator approach and multi-group analysis. In this study, we adopted both approaches to test hypotheses H4.1 to H4.3. We first examined the possible moderation effect of m-payment frequency usage employing the product-indicator approach. For this purpose, we re-coded USE variable, which was measured using a 5-point rating scale, so that it could approximately reflect the gradual increase in m-payment frequency usage for a calendar month (assuming approximately 3 m-payments a week). In particular, "daily" option was assigned a value of 30, "a few times a Week" option was assigned a value of 12, "a few times every Two Weeks" option was assigned a value of 6, and "a few times a Month" option was assigned a value of 3. Interaction terms were produced by multiplying the moderator (USE) and all the items of independent constructs (SYSQ, INFQ, SERQ). As shown in Table 5, all moderation paths were not significant, implying that frequency of m-payments usage has no effect on the relationship between independent constructs and user's behavioral intention to discontinue using m-payments.

To provide an additional support for hypotheses H4.1 to H4.3, we conducted a PLS multi-group analysis (MGA) to determine whether the conceptual model significantly differs between groups with different usage frequency (Henseler 2012; Tan et al. 2019). MGA uses independent samples t-tests to compare paths between groups (Keil et al. 2000). For this purpose, we divided the study sample into two groups. The first group included 98 respondents who used m-payments at least a few times a week (HIGH Usage group), and the second group included the remaining 155 respondents who used m-payments less frequently (LOW Usage group). Before conducting MGA, measurement invariance was tested, as suggested by Garson (2016). As shown in Table 6, differences in both outer loadings and path coefficients in PLS-MGA were not significant, implying that the structural

model constructs were measured the same in each group and thus have the same meaning; hence, measurement invariance was not an issue in MGA (Garson 2016). Further, the results of parametric test indicated no difference between groups since all structural paths were not significant (Table 7). It was therefore concluded that m-payments usage frequency does not moderate structural relationships between independent and dependent variables; thus, supporting hypotheses H4.1, H4.2, and H4.3.

Table 6. Results of PLS-MGA outer loadings and path coefficients.

	Outer Loadings-Diff (HIGH Usage—LOW Usage)	***p*-Value (HIGH Usage vs. LOW Usage)**	**Path Coefficients-Diff (HIGH Usage—LOW Usage)**
ID1 ← ID	0.02	0.187	
ID2 ← ID	0.004	0.554	
INFQ → ID		**0.506**	**0**
INFQ1 ← INFQ	0.009	0.433	
INFQ2 ← INFQ	0.026	0.776	
INFQ3 ← INFQ	0.016	0.536	
INFQ4 ← INFQ	0.098	0.790	
SERQ → ID		**0.718**	**0.123**
SERQ1 ← SERQ	0.044	0.297	
SERQ2 ← SERQ	0.012	0.571	
SERQ3 ← SERQ	0.178	0.070	
SERQ4 ← SERQ	0.156	0.997	
SYSQ → ID		**0.766**	**0.095**
SYSQ1 ← SYSQ	0.099	0.939	
SYSQ2 ← SYSQ	0.007	0.396	
SYSQ3 ← SYSQ	0.011	0.379	

Note: Path coefficient are in bold.

Table 7. Results of the parametric test.

	Path Coefficients-Diff (HIGH Usage—LOW Usage)	***t*-Value (HIGH Usage vs. LOW Usage)**	***p*-Value (HIGH Usage vs. LOW Usage)**
INFQ → ID	0	0.003	0.998
SERQ → ID	0.123	0.727	0.468
SYSQ → ID	0.095	0.804	0.422

6. Discussion

The aim of this research was to develop and empirically validate a conceptual model in order to identify the determinants of consumers' intention to discontinue using remote m-payments during post-adoption usage. Despite current technological advances and consumer-focused marketing, the findings revealed that some users experienced various difficulties with m-payments, including issues with system quality, information quality, and service quality. More than a third of respondents indicated their intention to discontinue using m-payment that was in use at the time and switch to any other m-payment provided it had no issues related to their current system. However, more than a half of respondents revealed their intention to discontinue using their current m-payments and consider using any other alternative that did not have stated problems with their current m-payment systems. If the system is unsatisfactory for consumers, they would change it to any other that does not have related problems. The focus of the study was to measure intention to discontinue, not to switch to a particular alternative. Surely, it might be the case that there was no available alternative at the moment, however, respondents indicated they are unsatisfied with the current system and thus would rather use other the

system if it was available for them. These findings suggest that m-payments are not currently satisfying the needs of UK consumers, which resonate with a recent study by Slade et al. (2015) conducted in the UK context; thus, developers', marketers', and service providers' application of this research's findings in practice is imperative to enhance and improve consumers' experience of using their mobile devices to make payments.

6.1. Poor System Quality

The results show the positive association between a poor quality of m-payments and users' intention to discontinue using the technology, which supported H1. Concurrent with existing mobile payment (Zhou 2013, 2014a), mobile purchase (Gao et al. 2015), mobile value-added services (Wang 2015), mobile internet sites (Zhou 2014c), and mobile money transfer technology (Ismail and Ali 2017) continuance intention research, the influence of system quality on behavioral intention was supported in the UK consumer context. This suggests that mobile payment system characteristics are important to UK consumers and can determine their discontinuance intentions. The results confirmed that poor system quality, as an object-based belief, has an inhibiting effect on continuance intention of mobile payment usage. This indicates that if consumers find mobile payment technology as not easy to use or navigate, or its operations are delayed, they are probable to discontinue using such mobile payment technology. These results are consistent with previous empirical findings conducted by Cenfetelli and Schwarz (2011), which while studying e-commerce website users found that system inhibitors have a significant negative effect on usage intentions. However, while an average value of β coefficients (path coefficients) for system inhibitors in Cenfetelli and Schwarz's (2011, p. 818) model is about 0.17 ($p < 0.001$), the present proposed model's β coefficient for poor system quality is 0.390 ($p < 0.001$), exerting a more significant influence of system inhibitors on usage continuance intentions of mobile payment technology compared to e-commerce website usage. In addition, the results agree with the findings from Xu et al. (2013), which empirically confirmed that system quality subsequently influences users' attitudes in the electronic services context. Thus, developers and service providers need to improve system quality of mobile payment technologies in order to facilitate user experience.

6.2. Poor Information Quality

The results show the positive association between a poor information quality provided by mobile payment system and users' intention to discontinue using mobile payment technology, which supported H2. The implication of this finding is that the quality of information is critical for consumers to predict what to expect from the mobile payment technology. For this reason, consumers might discontinue their usage of m-payments that cannot provide accurate and detailed information for consumers. These results are consistent with extant research supporting the subsequent effect of information quality, as an object-based belief, on continuous intentions of mobile payment technologies (Zhou 2013, 2014a), suggesting that the quality of information is important to UK consumers and can determine their discontinuance intentions. In addition, these results are consistent with previous empirical studies which found that information quality, as an object-based belief, subsequently affects continuance intention of using mobile internet sites (Zhou 2014c) and mobile purchase (Gao et al. 2015), and also influences users' attitudes in the electronic services context (Xu et al. 2013). Again, this supports the argument that the information quality is critical in the mobile payment context and should be improved and maintained by service providers in order to retain their customers. Although concurrent with the findings of Cenfetelli and Schwarz (2011, p. 818), this study showed that an inhibiting effect of poor information quality on continuance intention is more significant in the mobile payment context ($\beta = 0.215$) than in the e-commerce website usage context (average $\beta = 0.16$). This implies that mobile payment users have higher expectations of the quality of

information related to mobile transactions, in contrast to online users. Therefore, it is mandatory for developers and service providers to ensure that consumers can obtain accurate and up-to-date information relating to mobile transactions.

6.3. Poor Service Quality

The results show the positive association between a poor service quality provided by m-payments service providers and users' intention to discontinue using mobile payment technology, which supported H3. Poor service quality has been found as another significant determinant of UK consumers' discontinuance intention of m-payments, according to this study's results. This indicates that if consumers find the quality of mobile payment service as not fit to their needs, they are probable to discontinue using such mobile payment technology. Interestingly, in this research, poor information quality factor showed a slightly less effect on intention to discontinue with $\beta = 0.215$, compared to poor system quality and poor service quality, showing path coefficients of 0.390 and 0.282, respectively. While, for instance, in Zhou's (2013) empirical study on Chinese consumers, service quality factor compared to other factors, namely system quality and information quality, was found to have the largest subsequent effect on continuance intention of mobile payment services. Such results support the claim that the implications of overseas studies might not be fully applicable to UK cultural settings. However, these findings indicate that service providers must set themselves higher standards to retain customers by offering higher quality and more personalized services. The results also agree with previous research supporting the subsequent effect of service quality, as an object-based belief, on consumers' usage intentions in the mobile value-added services (Wang 2015; Zhao et al. 2012), mobile service (Zhou and Lu 2011), and mobile purchase context (Gao et al. 2015), on users' continuance intentions in the mobile money transfer technology context (Ismail and Ali 2017), and on users' attitudes in the electronic services context (Xu et al. 2013). This, again, emphasizes the importance for service providers to improve the quality of mobile payment services.

6.4. Effect of M-Payment Frequency Usage

This study found evidence that the frequency of m-payments usage does not moderate the effects of antecedents of discontinuance intention, thus H4.1, H4.2, and H4.3 were supported. Two different statistical tests were conducted to check the moderating effect of usage frequency. First test, based on product-indicator multiplication, revealed that an increase in usage frequency has no effect on the relationship between independent variables and dependent variables. Likewise, multi-group analysis showed that there is no difference in discontinuance intentions between groups of frequent m-payment users and users who used m-payment less frequently. These findings can be considered as pioneering, since no evidence in the pertinent literature was found at the time of this research that any empirical study had investigated the moderation effect of usage frequency on continuance or discontinuance intention of m-payment technology, especially in the UK context. Importantly, this finding is not consistent with an empirical study conducted by Jia et al. (2014), which found that consumers' m-payments usage habit has a positive relationship with their intention to continue use m-payments. In this essence, consumers' technology usage habit is formed by a frequent usage of the technology (Jolley et al. 2006), which in turn fosters the formation of inertia to change (Polites and Karahanna 2012). As such, the more frequently m-payment is used, the less likely consumers are inclined to abandon it. However, our empirical results have proven the opposite. A possible explanation for this inconsistency can be that the inhibiting factors of technology rejection are not simply the opposite of the enabling factors and exist separately from enablers; thus, inhibitors may have a unique effect on usage intentions which might be difficult to compensate with enablers. This explanation agrees with empirical findings by Cenfetelli and Schwarz (2011)

which identified that inhibitors exist separately from enablers. It can therefore be concluded that regardless of m-payments usage frequency, consumers' discontinuance intentions are determined by the quality of mobile payment system, information, or service.

The above explanation can also be supported by findings of Baumeister et al. (2001) which assert that negative information is processed more thoroughly than positive and consequently "bad impressions […] are quicker to form and more resistant to disconfirmation than good ones" (p. 323). Their findings support the asymmetrical effect of inhibitors on individual decision makers in comparison to enablers. Indeed, consumers are less likely to repeat behaviors which require more effort (Lindbladh et al. 2002). Therefore, the presence of inhibiting factors such as poor system quality, poor information quality, or poor service quality will likely negatively influence a consumer's intention to continue using mobile payment technology regardless of how often the technology is being used.

7. Implications for Research and Practice, and Limitations

7.1. Theoretical Implications

Overall, the study makes three key theoretical contributions. First, this study proposes an empirically validated conceptual model that contributes to an understanding of discontinuance behavior of m-payment users, thus adding to the limited knowledge on IS use and discontinuance behavior (Putri et al. 2020; Recker 2016; Soliman and Rinta-Kahila 2020). As discuss earlier, the pertinent literature has focused mainly on examining m-payments initial adoption and has seldom considered post-adoption usage, which is imperative to m-payments service providers' success. To our best knowledge, it is the first study that has examined consumers' continuance intentions using m-payments in the UK context, and amongst the first that has identified artefact-related factors that directly inhibit consumers' continuance intentions of m-payments. Drawing on behavioral theories, relevant psychological, marketing, and IS research, this study modified the ISS model and identified the factors directly influencing discontinuance intention of m-payments during post-adoption usage. This extends our knowledge on the existence of the antecedents that directly and negatively affect usage intentions and provides another dimension for investigation in the m- payments research, thereby contributing to the developing literature on IS discontinuance (Bhattacherjee et al. 2012; Polites and Karahanna 2012; Recker 2016; Soliman and Rinta-Kahila 2020).

Second, another significant finding contributing to relevant research is that m-payments usage frequency does not moderate users' discontinuance intentions. This implies that the presence of inhibiting factors will likely result in users' intention to discontinue using m-payments regardless of how frequently the technology is being used. It may be further inferred, that unlike the effect of enablers that were moderated by consumers' m-payments usage habit (Jia et al. 2014), which formed by a frequent usage of the technology (Jolley et al. 2006; Polites and Karahanna 2012), the effect of inhibitors is not affected by usage frequency, thus exhibits a different, independent nature. This interesting and important finding conforms with the notion that inhibitors and enablers are qualitatively distinct and independent of each other constructs, thus are not merely the opposites of each other which has already been identified in the literature (Bhattacherjee and Hikmet 2007; Cenfetelli 2004; Cenfetelli and Schwarz 2011; G. Patsiotis et al. 2013). It can therefore be concluded that future studies need to consider the effect of inhibiting factors on technology users' continuance intentions in order to enhance an understanding why users may stop or discontinue using technologies.

Third, this study further generalized the ISS model to emerging service of m-payments, contributing to extant research on the ISS model in the context of continuous intentions of m-payment services (Zhou 2013, 2014b), mobile services (Zhou and Lu 2011), and mobile banking services (Al-Ghazali et al. 2015), as well as in the context of e-commerce (DeLone and McLean 2004; Wang 2008), e-government (Teo et al. 2009), and mobile

healthcare (Chatterjee et al. 2009). Although this research was concerned with users' discontinuance intentions, it has provided further support for the main constructs of the ISS model in a modern consumer context related to UK users. The three constructs of the ISS model exhibited strong direct influence on users' behavioral intention to discontinue using m-payments, thus can be used in relevant research. Further, contrary to some arguments in the IS literature focusing largely on enablers (e.g., Wixom and Todd 2005), claiming that object-based beliefs are generally poor predictors of behavioral intentions, and in contrast to previous research on mobile payment continuance intentions (Zhou 2013, 2014b), this study explored the direct impact of the predictors on discontinuance intention and empirically showed that negative object-based beliefs as artefact-related factors are likely to be directly predictive of usage intentions, showing a moderate prediction of the intentions. While Zhou's (2013) model that included mediation constructs of trust, flow, and satisfaction explained 58.4% of variance of continuance intention of mobile payment services, the conceptual model in this study explained 56.1% of variance of discontinuance intention (Table 8). Such finding implies that inhibitors as object-based beliefs may have a unique and significant effect on usage intentions, thus, empirically supports Cenfetelli's (2004) thesis that inhibitors and enablers are dual-factored constructs. In this way, we contribute to the emerging literature on IS discontinuance (Bhattacherjee et al. 2012; Polites and Karahanna 2012; Recker 2016; Soliman and Rinta-Kahila 2020). Besides, gaining significant results of excluding mediating constructs, such as user satisfaction, from the original model, reinforces the importance of modifying IS usage models originally developed to predict initial adoption or acceptance intention to the post-adoption context (Dahlberg et al. 2008, 2015; Soliman and Rinta-Kahila 2020). Therefore, the findings of this study contribute as a reference for future research.

Table 8. Reported variance explaining continuance intentions towards mobile technologies †.

Study	Context	Variance Explained (R^2)
Kumar et al. (2012)	Mobile Banking	38%
Hung et al. (2012)	Mobile Shopping	38.3%
Hossain et al. (2018)	Mobile Payment	39%
Ofori et al. (2016)	Mobile Social Media	39.2%
Boakye (2015)	Mobile Data Services	41.4%
Nugraheni et al. (2020)	Mobile Payment	40.8%
Gong et al. (2015)	Mobile Instant Messaging	42%
Zhou (2014c)	Mobile Internet Sites	42.7%
Chen and Li (2017)	Mobile Payment	44%
Gan (2016)	Mobile Instant Messaging	47.2%
Gan and Li (2015)	Mobile Instant Messaging	48.7%
Zhou and Lu (2011)	Mobile Services	48.7%
Pi et al. (2012)	Mobile Services	50%
Zhou (2014b)	Mobile Payment	51%
Yuan et al. (2016)	Mobile Banking	53.4%
Hsiao and Chang (2014)	Mobile Advertising	54%
Shao et al. (2019)	Mobile Payment	54.2%
Zhou (2011)	Mobile Internet	55%
Zhou et al. (2015)	Mobile Instant Messaging	55.1%
Verma et al. (2020)	Mobile Payment	55.6%
Zhao et al. (2012)	Mobile Value-added Services	56%
The present study	Mobile Payment	56.1%
Gao and Bai (2014)	Mobile Social Networking Services	57.9%
Zhou (2013)	Mobile Payment	58.4%
Wang (2015)	Mobile Value-added Services	58.4%

Chang et al. (2013)	Mobile English Learning	60%
Handarkho (2020)	Mobile Payment	61.2%
Wang and Qian (2015)	Mobile Instant Messaging	63%
Lu et al. (2017)	Mobile Payment	63%
Gao et al. (2015)	Mobile Purchasing	64.2%
Cao et al. (2018)	Mobile Payment	65%
Ismail and Ali (2017)	Mobile Money Transfer	66.6%
Susanto et al. (2016)	Mobile Banking	72.2%
Zhou (2014d)	Mobile Internet	75.7%
Humbani and Wiese (2019)	Mobile Payment	91.1%

Note: † The table may not be exhaustive on the reported variance explaining continuance intentions towards mobile technologies.

7.2. Managerial Implications

In addition to the theoretical implications, this study adds to the current understanding of what factors influence consumers' intention to discontinue m-payments usage and how it can be effectively managed, thus contributing to existing practice in three different ways.

First, the constraints of mobile devices emphasize the importance for system developers to present a well-designed and easy-to-use interface to users (Lee and Benbasat 2004). According to a 2015 UK consumer mobile payment study conducted by TSYS (2015), the small screen of mobile phones was one of the reasons for not using mobile banking apps for 40% of respondents. This highlights the necessity for developers and service providers to improve system quality by developing a more user-friendly system interface of m-payments in order to facilitate users' post-adoption usage. Although the dimension of the screen is one of the main limitations of mobile terminals which can be difficult to overcome, the integration of smart interface designs and technological advances (i.e., voice or biometric control) can be a solution. Furthermore, a limited battery life that may prevent making a purchase is also amongst current concerns of smartphone owners in the UK (TSYS 2015). Therefore, system developers need to find a technological solution that would either reduce a power consumption of mobile devices or extend the battery capacity. In addition, it was found that 69% of UK respondents perceived the ease-of-use of mobile payment as a necessity (TSYS 2015). On the basis of a post-adoption experience, the initial user expectations might shift due to some barriers to ease-of-use which might influence the decision between continuing or discontinuing m-payments use. Further, the ease-of-use might be affected by the quality and speed of mobile network connection (Napoli and Obar 2014), reducing the loading speed of texts and graphics or even disrupting payment processing (Mallat 2007). Mobility, which reflects seamless connectivity and reliable execution of mobile transactions, has been found to be the most significant determinant of continuance decision (Baek et al. 2011; Kim et al. 2010). This implies that disconfirmation of system quality can strongly affect continuance intentions of mobile payment services. However, despite continuous claims in the media from major UK mobile network providers regarding the extended network coverage and connection quality, the Connected Nations Report 2016 by OFCOM (2016) revealed that "for a significant number of consumers, and in many parts of the country […] mobile coverage is poor or indeed non-existent" (p. 5). This fortifies the recommendation that developers and service providers need to improve system quality in terms of maintaining seamless connectivity in order to enhance users' experience and thus, facilitating their continuance usage.

Second, m-payments transactions involve sensitive financial information to be exchanged between mobile terminals and service providers, therefore, consumers will be very concerned regarding the quality of information provided. This supports the argument that the information quality is critical in the mobile payment context and should be improved and maintained by service providers in order to retain their customers. Further,

poor information quality can be detrimental to trust in the service provider (Duane et al. 2014; Zhou 2013, 2014a). If mobile payment users receive either inaccurate, or not up-to-date, or timely information about their mobile payment transactions, they may doubt service providers' ability and integrity to offer quality services as well as to provide sufficient level of security, and consequently decide to discontinue using the technology. Therefore, to retain customers, service providers need to ensure that only accurate and latest information is provided to m-payments users. In this context, security level can be examined as an additional inhibiting factor in future research. Similar to system quality, both information and service quality can be affected by the quality and speed of mobile network connection, which as described above, in many parts of the UK is poor or indeed non-existent (OFCOM 2016). This again emphasizes the importance for service providers to minimize connection errors that may prevent users from accessing accurate and timely information within the site or outdoors and provide timely response to users' inputs and requests. By optimizing wireless networks and back-up systems, including data processing systems and servers, service providers can provide reliable services and prompt responses to mobile payment consumers. Another way to enhance information quality is to improve mobile content quality (Huizingh 2000) by combining the value of information (i.e., objectivity) and the relevancy to the task of information consumers (i.e., amount of information), which can allow to provide objective and relevant information on a relatively small screen of mobile devices. In addition to content quality, contextual quality of information can also be improved (Dey 2001). This can be achieved when mobile services are considered within the context of the user's task at hand, that is, to ensure that users can effortlessly access the information anywhere at any time. Further, service quality in the mobile payment context can be improved in terms of localization and personalization. Provided the user's consent is obtained (Xu and Gupta 2009), service providers can utilize user's geographical location to provide optimal information and services based on the environmental context (Junglas et al. 2008).

Third, this study found evidence that the frequency of m-payments usage does not moderate the effect of antecedents of discontinuance intention, which can imply that segmenting users based on their usage frequency might not be useful. Provided there are little or no switching costs, consumers may begin using an available alternative regardless whether they use m-payments daily or a few times a month. This suggests that users should be treated as a homogenous group by developers and service providers while designing or amending systems and delivering services. In this context, switching costs (barriers) can be used as an additional construct in future research to study its possible positive effect on discontinuance intention.

In addition, in order to ensure a successful implementation of the above-mentioned recommendations, adopting a systematic approach can be useful. Drawing on a recent study, which analyzed post-failure of m-payment platforms (Gannamaneni et al. 2015), a multi-level framework can be used to guide and inform how the quality of system, information and service can be improved and managed. The first level (sponsor level) of the framework requires to establish an effective collaboration between stakeholders such mobile network operators and financial institutions. The second level (platform level) requires utilizing adequate and standardized technologies which should be interoperable with existing payment platforms. Finally, user level requires mobile payment platform providers to find a key value-added feature that can create more value for users than existing payment cards.

7.3. Limitations and Future Research

This study has the following limitations. First, the study focused only on consumers in the UK, which poses a limitation about the results' generalizability to other countries. Cross-cultural comparisons of the validity of the proposed model for countries with different levels of development would be theoretically and practically useful. Second, although this study attempted to cover major predictors, there may be other factors that also

contribute towards discontinuance usage intentions of m-payments. Switching cost, switching barriers (e.g., available alternatives), and security level are among the factors that can be addressed in future studies. Finally, this study was cross-sectional, the constructs were measured at a single point. Since user behavior is dynamic, a longitudinal study would have provided further insight about users' post-adoption behavior development.

8. Conclusions

The main contribution of this research is the development of a conceptual model that synthesizes the essence of technology resistance theory and the ISS model to explain users' discontinuance intentions of m-payments in terms of system, information, and service characteristics. The proposed model extends our knowledge on the existence of the artefact-related factors that directly inhibit consumers' continuance intentions of m-payments and thereby provides another dimension for investigation in the m-payments research. This study shows empirically that negative object-based beliefs as artefact-related factors are likely to be directly predictive of usage intentions, showing a relatively strong prediction of the intentions. Furthermore, the results show that m-payments usage frequency does not have a moderating effect on users' discontinuance intentions, implying that the presence of inhibiting factors will likely result in users' intention to discontinue using m-payments regardless of how often the technology is being used. Our results indicate that understanding the inhibiting factors that significantly influence consumers' discontinuance intentions is critical in assisting the development and implementation of m-payment systems with a high level of consumer retention. The findings also suggest that m-payment service providers should acknowledge it might not be sufficient to compensate system design flaws by offering some better design features.

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Institutional Review Board Statement: Ethical review and approval were waived for this study, due to the study did not involve vulnerable groups (e.g., children, adults with learning disabilities); it was assessed that the study induce no psychological stress or anxiety, cause harm or negative consequences for the participants (beyond the risks encountered in normal life); no ethical issues were anticipated.

Informed Consent Statement: Informed consent was obtained from all subjects involved in the study.

Data Availability Statement: The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to their containing information that could compromise the privacy of research participants, specifically the data contain email addresses of some participants.

Conflicts of Interest: The authors declare no conflict of interest.

Appendix A

Table A1. The research model's variables and items.

Variables	Measured Item	Operational Definition	Source
Poor System Quality (SYSQ) †	*SYSQ 1.* Mobile payment that I currently use does NOT quickly load all the text and graphics. *SYSQ 2.* Mobile payment that I currently use is NOT easy to use. *SYSQ 3.* Mobile payment that I currently use is NOT easy to navigate. *SYSQ 4.* Mobile payment that I currently use is NOT visually attractive.	Items of poor system quality reflect the access speed, ease of use, navigation, and visual appeal of mobile payment technology that is currently used.	Modified from Zhou (2013), and Kim et al. (2010)
Poor Information Quality (INFQ) †	*INFQ 1.* Mobile payment that I currently use does NOT provide me with information relevant to my needs. *INFQ 2.* Mobile payment that I currently use does NOT provide me with sufficient information. *INFQ 3.* Mobile payment that I currently use does NOT provide me with accurate information. *INFQ 4.* Mobile payment that I currently use does NOT provide me with up-to-date information.	Items of poor information quality reflect information relevance, sufficiency, accuracy, and timeliness of mobile payment technology that is currently used.	Modified from Zhou (2013), and Kim et al. (2010)
Poor Service Quality (SERQ) †	*SERQ 1.* Mobile payment that I currently use does NOT provide on-time services. *SERQ 2.* Mobile payment that I currently use does NOT provide prompt responses. *SERQ 3.* Mobile payment that I currently use does NOT provide professional services. *SERQ 4.* Mobile payment that I currently use does NOT provide personalized services.	Items of poor service quality reflect service reliability, responsiveness, assurance, and personalization of mobile payment technology that is currently used.	Modified from Zhou (2013), and Kim et al. (2010)
Frequency of Mobile Payment Usage (USE) ‡	*USE.* How often do you use your mobile device(s) to make payments?	Item of level of mobile payment usage reflects frequency of using mobile payment technology by users.	New scale developed.
Intention to Discontinue (ID) §	*ID 1.* My intentions are NOT to continue using Mobile Payment that I currently use and begin using other mobile payment that does not have the above mentioned drawbacks. *ID 2.* I would discontinue using mobile payment that I currently use and start using an available alternative that does not have the above-mentioned drawbacks if the alternative was available.	Items of intention to discontinue reflect the user's intention to stop or discontinue using mobile payment technology that is currently used, and replacing the incumbent technology with an alternative that has no or less drawbacks related to the use of the incumbent technology.	Modified from Bhattacherjee et al. (2012), Recker (2016), and Zhou (2013)

Note: † independent variable; ‡ moderating variable; § dependent variable.

Appendix B

Table A2. Frequency test results.

Constructs	Frequencies				
Frequency of using m-payments	Daily	A few times a week	A few times every two weeks	A few times a month	A few times a year
	9.1%	26.6%	30.7%	26.3%	7.3%
Poor system quality	*M-payment does not quickly load all the text and graphics.*				63.4% †
	M-payment is not easy to navigate.				20.9% †
Poor information quality	*M-payment does not provide me with information relevant to my needs.*				33.8% †
	M-payment does not provide me with sufficient information.				35% †
Poor service quality	*M-payment does not provide me with prompt responses.*				36.2% †
	M-payment does provide me with personalized services.				66.5% †
Intentions to discontinue	*My intentions are not to continue using m-payment I currently use and begin using other m-payment that does not have the above-mentioned drawbacks.*				41% †
	My intentions are not to continue using m-payment I currently use and start using an available alternative that does not have the above-mentioned drawbacks.				66.5% †

Note: † aggregated value from 'Strongly Agree' and 'Agree' responses.

References

Abrahão, Ricardo de Sena, S. N. Moriguchi, and D. F. Andrade. Intention of adoption of mobile payment: An analysis in the light of the Unified Theory of Acceptance and Use of Technology. 2016. Intention of adoption of mobile payment: An analysis in the light of the Unified Theory of Acceptance and Use of Technology (UTAUT). *RAI Revista de Administração e Inovação* 13: 221–30.

Ahuja, Manju. K., and Jason Bennett Thatcher. 2005. Moving beyond Intentions and toward the Theory of Trying: Effects of Work Environment and Gender on Post-Adoption Information Technology Use. *MIS Quarterly* 29: 427–59.

Al-Ghazali, Basheer Mohammed, Amran Md Rasli, Rosman Md Yusoff, and Amena Yahya Mutahar. 2015. Antecedents of Continuous Usage Intention of Mobile Banking Services from the Perspective of DeLone and McLean Model of IS Success, *International Journal of Economics and Financial Issues* 5: 13–21.

Baek, Jongdeuk, Seongwon Park, and Choong C. Lee. 2011. Identifying Drivers for Continual Usage of Wireless Broadband. *International Journal of Mobile Communications* 9: 317–40.

Baumeister, Roy F., Ellen Bratslavsky, Catrin Finkenauer, and Kathleen D. Vohs. 2001. Bad is stronger than good. *Review of General Psychology* 5: 323–70.

Benbasat, Izak, and Henri Barki. 2007. Quo vadis, TAM? *Journal of the Association of Information Systems* 8: 211–18.

Berscheid, E. 1983. Emotion. In *Close Relationships*. Edited by Kelley, Harold H., Ellen Berscheid, Andrew Christensen, John H. Harvey, Ted L. Huston, George Levinger, Evie McClintock, Letitia Anne Peplau, and Donald R. Peterson. New York: Freemen, pp. 110–68.

Bhattacherjee, A. 2001. Understanding information systems continuance: An expectation-confirmation model, *MIS Quarterly* 25: 351–70.

Bhattacherjee, Anol, and Neset Hikmet. 2007. Physicians' resistance toward healthcare information technology: A theoretical model and empirical test. *European Journal of Information Systems* 16: 725–37. doi:10.1057/palgrave.ejis.3000717.

Bhattacherjee, Anol, and Neset Hikmet. 2008. Enablers and inhibitors of healthcare information technology adoption: Toward a dual factor model. *AMCIS* 135: 1–8.

Bhattacherjee, Anol, Moez Limayem, and Christy MK Cheung. 2012. User switching of information technology: A theoretical synthesis and empirical test. *Information and Management* 49: 327–33, doi:10.1016/j.im.2012.06.002.

Boakye, Kwabena G. 2015. Factors influencing mobile data service (MDS) continuance intention: An empirical study. *Computers in Human Behavior* 50: 125–31. doi:10.1016/j.chb.2015.04.008.

Brown, Susan A., Robert M. Fuller, and Chelley Vician. 2004. Who's afraid of the virtual world? Anxiety and computer-mediated communication. *Journal of Association Information Systems* 5: 79–107.

Cao, Xiongfei, Lingling Yu, Zhiying Liu, Mingchuan Gong, and Luqman Adeel. 2018. Understanding mobile payment users' continuance intention: A trust transfer perspective. *Internet Research* 28: 456–76. doi:10.1108/IntR-11-2016-0359.

Cenfetelli, Ronald T. 2004. Inhibitors and enablers as Dual Factor Concepts in Technology Usage. *Journal of the Association for Information Systems* 5: 472–92.

Cenfetelli, Ronald T., and Andrew Schwarz. 2011. Identifying and testing the inhibitors of technology usage intentions. *Information Systems Research* 22: 808–23. doi:10.1287/isre.1100.0295.

Centre for Retail Research. 2015. *Mobile Retailing 2015*. Available online: http://www.retailresearch.org/mobileretailing.php (accessed on 20 March 2018).

Srivastava, Shirish C., Shalini Chandra, and Yin-Leng Theng. 2010. Evaluating the role of trust in consumer adoption of mobile payment systems: An empirical analysis. *Communications of the Association for Information Systems* 27: 561–88.

Chang, C., K. Tseng, C. Liang, and C. Yan. 2013. The influence of perceived convenience and curiosity on continuance intention in mobile English learning for high school students using PDAs. *Technology, Pedagogy and Education* 22: 373–86. doi:10.1080/1475939X.2013.802991.

Chatterjee, S., S. Chakraborty, S. Sarker, S. Sarker, and F. Y. Lau. 2009. Examining the success factors for mobile work in healthcare: A deductive study. *Decision Support Systems* 46: 620–33. doi:10.1016/j.dss.2008.11.003.

Chau, P. Y. K. 2001. Inhibitors to EDI adoption in small businesses: An empirical investigation. *Journal of Electronic Commerce Research* 2: 78–88.

Chen, X., and S. Li. 2017. Understanding Continuance Intention of Mobile Payment Services: An Empirical Study. *Journal of Computer Information Systems* 57: 287–98. doi:10.1080/08874417.2016.1180649.

Cheng, S., D. Jong, H. Chen, and S. Chen. 2013. Investigating the impact of service quality on consumers' intention to use mobile banking. *International Journal of Management Research and Business Strategy* 2: 13–22.

Chin, Wynne W. 1998. The partial least squares approach to structural equation modelling. In *Methodology for Business and Management. Modern Methods for Business Research*. Mahwah: Lawrence Erlbaum Associates Publishers, pp. 295–336.

Chin, W. W. 2010. How to write up and report PLS analyses. In *Handbook of Partial Least Squares.* Edited by Vinzi, V. Esposito, Wynne W. Chin, Jörg Henseler, and Huiwen Wang. New York: Springer, pp. 655–90.

Chong, Alain Yee-Loong. 2013. Understanding mobile commerce continuance intentions: An empirical analysis of Chinese consumers. *The Journal of Computer Information Systems* 53: 22–30.

Coussement, Kristof, Dries F. Benoit, and Dirk Van den Poel. 2010. Improved marketing decision making in a customer churn prediction context using generalized additive models. *Expert Systems with Applications* 37: 2132–43. doi:10.1016/j.eswa.2009.07.029.

Dahlberg, Tomi, Jie Guo, and Jan Ondrus. 2015. A critical review of mobile payment research. *Electronic Commerce Research and Applications* 14: 265–84. doi:10.1016/j.elerap.2015.07.006.

Dahlberg, Tomi, Niina Mallat, Jan Ondrus, and Agnieszka Zmijewska. 2008. Past, present and future of mobile payments research: A literature review. *Electronic Commerce Research and Applications* 7: 165–81. doi:10.1016/j.elerap.2007.02.001.

Davis, Fred. D. 1989. Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly* 13: 319–40.

Davis, Fred D., Richard P. Bagozzi, and Paul R. Warshaw. 1989. User acceptance of computer technology: A comparison of two theoretical models. *Management Science* 35: 982–1003. doi:10.1287/mnsc.35.8.982.

DeLone, William H., and Ephraim R. McLean. 1992. Information systems success: The quest for the dependent variable. *Information Systems Research* 3: 60–95. doi:10.1287/isre.3.1.60.

DeLone, William H., and Ephraim R. McLean. 2003. The DeLone and McLean model of information systems success: A ten-year update. *Journal of Management Information Systems* 19: 9–30.

DeLone, William H., and Ephraim R. McLean. 2004. Measuring e-commerce success: Applying the DeLone and McLean information systems success model. *International Journal of Electronic Commerce* 9: 31–47.

Dey, Anind K. 2001. Understanding and using context. *Personal and Ubiquitous Computing* 5: 4–7. doi:10.1007/s007790170019.

Diener, Ed, and Robert A. Emmons. 1985. The independence of positive and negative affect. *Journal of Personality and Social Psychology*, 47: 1105–17.

Duane, Aidan, Philip O'Reilly, and Pavel Andreev. 2014. Realising M-Payments: Modelling consumers' willingness to M-pay using Smart Phones. *Behaviour and Information Technology* 33: 318–34. doi:10.1080/0144929X.2012.745608.

Durkin, Mark, Deirdre Jennings, Gwyneth Mulholland, and Stephen Worthington. 2008. Key influencers and inhibitors on adoption of the internet for banking. *Journal of Retailing and Consumer Services* 15: 348–57. doi:10.1016/j.jretconser.2007.08.002.

Enberg, J. 2019. Global Mobile Payment Users 2019. Available online: https://www.emarketer.com/content/global-mobile-payment-users-2019 (accessed on 1 February 2021).

Euromonitor International. 2014. Leveraging consumer loyalty to drive mobile payments adoption. Available online: http://www.pymnts.com/assets/Uploads/pdf/Leveraging-Consumer-Loyalty-to-Drive-Mobile-Payments-Adoption.pdf (accessed on 20 March 2018).

Everard, A., and D. F. Galletta. 2006. How Presentation Flaws Affect Perceived Site Quality, Trust, and Intention to Purchase from an Online Store. *Journal of Management Information Systems* 22: 56–95.

Fornell, C., and D. F. Larcker. 1981. Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research* 18: 39–50.

Patsiotis, Athanasios G., Tim Hughes, and Don J. Webber. 2013. An examination of consumers' resistance to computer-based technologies. *Journal of Services Marketing* 27: 294–311. doi:10.1108/08876041311330771.

Galletta, D. F., R. M. Henry, S. McCoy, and P. Polak. 2004. Web site delays: How tolerant are users? *Journal AIS* 5: 1–28.

Gan, C. 2016. An empirical analysis of factors influencing continuance intention of mobile instant messaging in china. *Information Development* 32: 1109–19. doi:10.1177/0266666915591298.

Gan, C., and H. Li. 2015. Understanding continuance intention of mobile instant messaging. *Industrial Management and Data Systems* 115: 646–60. doi:10.1108/IMDS-11-2014-0331.

Gannamaneni, A., J. Ondrus, and K. Lyytinen. 2015. A Post-Failure Analysis of Mobile Payment Platforms. Paper presented at the 48th Hawaii International Conference on System Sciences, Kauai, HI, USA, January 5–8. doi:10.1109/HICSS.2015.141.

Gao, L., and X. Bai. 2014. An empirical study on continuance intention of mobile social networking services: Integrating the IS success model, network externalities and flow theory. *Qualitative Research in Organizations and Management*. doi:10.1108/APJML-07-2013-0086.

Gao, L., K. A. Waechter, and X. Bai. 2015. Understanding consumers' continuance intention towards mobile purchase: A theoretical framework and empirical study—A case of china. *Computers in Human Behavior* 53: 249–62. doi:10.1016/j.chb.2015.07.014.

Garson, G. D. 2016. *Partial Least Square: Regression and Structural Equation Models*. Asheboro: Statistical Publishing Associates.

Gauggel, S., A. Wietasch, C. Bayer, and C. Rolko. 2000. The impact of positive and negative feedback on reaction time in brain damaged patients. *Neuropsychology* 14: 125–33.

Gefen, D., and D. Straub. 2005. A practical guide to factorial validity using PLS-Graph: Tutorial and annotated example. *Communications of the Association for Information Systems* 16: 91–109.

Global Industry Analysts. 2020. Remote Mobile Payments—Global Market Trajectory and Analytics. Available online: https://www.businesswire.com/news/home/20200601005375/en/ (accessed on 20 November 2020).

Gong, X., M. K. O. Lee, H. Kong, and Z. Liu. 2015. Understanding the Effect of Tie Strength on Continuance Intention of Second-Generation Mobile Instant Messaging Services. PACIS 2015 Proceedings. Available online: http://aisel.aisnet.org/pacis2015/94/ (accessed on 20 March 2018).

Grazioli, S., and S. L. Jarvenpaa. 2000. Perils of internet fraud: An empirical investigation of deception and trust with experienced internet consumers. *IEEE Transactions on Systems, Man, and Cybernetics—Part A: Systems and Humans* 30: 395–410. doi:10.1109/3468.852434.

Greitemeyer, T., and E. Kazemi. 2008. Asymmetrical consequences of behavioral change through reward and punishment. *European Journal of Social Psychology* 38: 246–59. doi:10.1002/ejsp.418.

Hagger, M. S., N. L. Chatzisarantis, and J. Harris. 2006. From psychological need satisfaction to intentional behavior: Testing a motivational sequence in two behavioural contexts. *Personality and Social Psychology Bulletin* 32: 131–48.

Hair, J. F., C. M. Ringle, and M. Sarstedt. 2011. PLS-SEM: Indeed a silver bullet. *Journal of Marketing Theory and Practice* 19: 139–52.

Hair, J. F., W. C. Black, B. J. Babin, and R. E. Anderson. 2010. *Multivariate Data Analysis: A Global Perspective*, 7th ed. Upper Saddle River: Pearson Prentice Hall.

Hair, Joseph F., Jr., G. Tomas M. Hult, Christian Ringle, and Marko Sarstedt. 2014. *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)*. Thousand Oaks: Sage Publications.

Handarkho, Y. D. 2020. Understanding mobile payment continuance usage in physical store through social impact theory and trust transfer. *Asia Pacific Journal of Marketing and Logistics* 1355–5855. doi:10.1108/APJML-01-2020-0018.

Henseler, J. 2012. PLS-MGA: A non-parametric approach to partial least squares-based multi-group analysis. In *Challenges at the Interface of Data Analysis, Computer Science, and Optimization*. Edited by Wolfgang A. Gaul, Andreas Geyer-Schulz, Lars Schmidt-Thieme, Jonas Kunze. Berlin/Heidelberg: Springer, pp. 495–501.

Henseler, J., and G. Fassott. 2010. Testing moderating effects in PLS path models: An Illustration of available procedures. In *Handbook of Partial Least Squares: Concepts, Methods and Applications, Springer, Handbooks of Computational Statistics*. Edited by Esposito Vinzi, Vincenzo, Wynne W. Chin, Jörg Henseler, and Huiwen Wang. Berlin/Heidelberg: Springer, pp. 713–35.

Henseler, J., Ringle, C. M., and Sarstedt, M. 2015. A New Criterion for Assessing Discriminant Validity in Variance-based Structural Equation Modeling. *Journal of the Academy of Marketing Science*, 43: 115–35.

Hoehle, H., E. Scornavacca, and S. Huff. 2012. Three decades of research on consumer adoption and utilization of electronic banking channels: A literature analysis. *Decision Support Systems* 54: 122–32. doi:10.1016/j.dss.2012.04.010.

Hossain, A., S. Shakhawat Hossain, and N. Jahan. 2018. Predicting Continuance Usage Intention of Mobile Payment: An Experimental Study of Bangladeshi Customers. *Asian Economic and Financial Review* 8: 487–98.

Hsiao, W., and T. Chang. 2014. Understanding consumers' continuance intention towards mobile advertising: A theoretical framework and empirical study. *Behaviour and Information Technology* 33: 730–42. doi:10.1080/0144929X.2013.789081.

Huizingh, E. K. R. E. 2000. The content and design of web sites: An empirical study. *Information and Management* 37: 123–34. doi:10.1016/S0378-7206(99)00044-0.

Humbani, M., and M. Wiese. 2019. An integrated framework for the adoption and continuance intention to use mobile payment apps. *International Journal of Bank Marketing* 37: 646–64. doi:10.1108/IJBM-03-2018-0072.

Hung, M., S. Yang, and T. Hsieh. 2012. An examination of the determinants of mobile shopping continuance. *International Journal of Electronic Business Management* 10: 29.

Hutton, G., and C. Baker. 2019. Mobile coverage in the UK. House of Commons Library. Resource document https://commonslibrary.parliament.uk/research-briefings/sn07069/ (accessed on 1 February 2021).

Isen, A. M. 1984. Toward understanding the role of affect in cognition. In *Handbook of Social Cognition*. Hillsdale: Erlbaum, vol. 3, pp. 179–236.

Ismail, S. Y. A., and Y. S. A. Ali. 2017. Determinants of continuance intention to use mobile money transfer: An integrated model. *Journal of Internet Banking and Commerce* 22: 1.

Jia, L., D. Hall, and S. Sun. 2014. The Effect of Technology Usage Habits on Consumers' Intention to Continue Use Mobile Payments. Paper presented at Twenties Americas Conference on Information Systems, Savannah, GA, USA. Available online: https://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.668.7197&rep=rep1&type=pdf (accessed on 17 February 2021).

Jimenez, N., S. San-Martin, and N. Puente. 2019. The path to mobile shopping compatibility. *The Journal of High Technology Management Research* 30: 15–26. doi:10.1016/j.hitech.2018.12.006.

Johnston, R. 1995. The zone of tolerance: Exploring the relationship between service transactions and satisfaction with the overall service. *International Journal of Service Industry Management* 6: 46–61. doi:10.1108/09564239510084941.

Jolley, B., R. Mizerski, and D. Olaru. 2006. How Habit and Satisfaction Affects Player Retention for Online Gambling. *Journal of Business Research* 9: 770–77.

Junglas, I., C. Abraham, and R. T. Watson. 2008. Task-technology fit for mobile locatable information systems. *Decision Support Systems* 45: 1046–57. doi:10.1016/j.dss.2008.02.007.

Kahneman, D., and A. Tversky. 1979. Prospect theory: An analysis of decision under risk. *Econometrica* 47: 263–91.

Kahneman, D., and A. Tversky. 1984. Choices, values, and frames. *American Psychologist* 39: 341–50.

Kahneman, D., and D. T. Miller. 1986. Norm theory: Comparing reality to its alternatives. *Psychological Review* 93: 136–53. doi:10.1037//0033-295X.93.2.136.

Khan, M. R., J. Manoj, A. Singh, and J. Blumenstock. 2015. *Behavioral Modeling for Churn Prediction: Early Indicators and Accurate Predictors of Custom Defection and Loyalty*. Proceedings of the 2015 IEEE International Congress on Big Data, June 2015, pp. 677–80. doi:10.1109/BigDataCongress.2015.107.

Keil, M., Tan, B. C., Wei, K.-K., Saarinen, T., Tuunainen, V., and Wassenaar, A. 2000. A cross-cultural study on escalation of commitment behavior in software projects. *MIS Quarterly*, 24: 299–325.

Kim, C., M. Mirusmonov, and I. Lee. 2010. An empirical examination of factors influencing the intention to use mobile payment. *Computers in Human Behavior* 26: 310–22. doi:10.1016/j.chb.2009.10.013.

Kock, N., and P. Hadaya. 2018. Minimum sample size estimation in PLS-SEM: The inverse square root and gamma-exponential methods. *Information Systems Journal* 28: 227–61. doi:10.1111/isj.12131.

Koivumäki, T., A. Ristola, and M. Kesti. 2008. The effects of information quality of mobile information services on user satisfaction and service acceptance-empirical evidence from Finland. *Behaviour and Information Technology* 27: 375–85. doi:10.1080/01449290601177003.

Kumar, R. G., G. Rejikumar, and D. S. Ravindran. 2012. an empirical study on service quality perceptions and continuance intention in mobile banking context in India. *Journal of Internet Banking and Commerce* 17: 1.

Kuo, Y., C. Wu, and W. Deng. 2009. The relationships among service quality, perceived value, customer satisfaction, and post-purchase intention in mobile value-added services. *Computers in Human Behavior* 25: 887–96. doi:10.1016/j.chb.2009.03.003.

Lapointe, L., and S. Rivard. 2005. A multilevel model of resistance to information technology implementation. *MIS Quarterly* 29: 461–91.

Laukkanen, T., and V. Kiviniemi. 2010. The role of information in mobile banking resistance. *International Journal of Bank Marketing* 28: 372–88. doi:10.1108/02652321011064890.

Lee, Y. E., and I. Benbasat. 2004. A framework for the study of customer interface design for mobile commerce. *International Journal of Electronic Commerce* 8: 79–102.

Leong, C.-M., K.-L. Tan, C.-H. Puah, and S.-M. Chong. 2020. Predicting mobile network operators users m-payment intention. *European Business Review* 33. doi:10.1108/EBR-10-2019-0263.

Lewicki, R. J., D. J. McAllister, and R. J. Bies. 1998. Trust and distrust: New relationships and realities. The *Academy of Management Review* 23: 438–58. doi:10.5465/AMR.1998.926620.

Lindbladh, E., C. H. Lyttkens, Medicinska fakulteten, Socialmedicin och global hälsa, Division of Social Medicine and Global Health, Ekonomihögskolan, … Centre for Economic Demography. 2002. Habit versus choice: The process of decision-making in health-related behaviour. *Social Science and Medicine* 55: 451–65. doi:10.1016/S0277-9536(01)00180-0.

Lu, J., J. Wei, C. Yu, and C. Liu. 2017. How do post-usage factors and espoused cultural values impact mobile payment continuation? *Behaviour and Information Technology* 36: 140–25. doi:10.1080/0144929X.2016.1208773.

Lu, Y., Y. Cao, B. Wang, and S. Yang. 2011. A study on factors that affect users' behavioral intention to transfer usage from the offline to the online channel. *Computers in Human Behavior* 27: 355–64.

Maier, C., S. Laumer, C. Weinert, and T. Weitzel. 2015. The effects of technostress and switching stress on discontinued use of social networking services: A study of Facebook use. *Information Systems Journal*, 25: 275–308. doi:10.1111/isj.12068.

Mallat, N. 2007. Exploring consumer adoption of mobile payments—A qualitative study. *Journal of Strategic Information Systems* 16: 413–32. doi:10.1016/j.jsis.2007.08.001.

Mathieson, K., E. Peacock, and W. W. Chin. 2001. Extending the technology acceptance model: The influence of perceived user resources. *Data Base for Advances in Information Systems* 32: 86–112.

Matook, S., and S. A. Brown. 2016. Characteristics of IT artifacts: a systems thinking-based framework for delineating and theorizing IT artifacts. *Information Systems Journal*, 27: 309–46.

McKnight, D. H., V. Choudhury, and C. Kacmar. 2002. Developing and validating trust measures for ecommerce: An integrative typology. *Information Systems Research* 13: 334–59. doi:10.1287/isre.13.3.334.81.

(McKnight et al. 2003) McKnight, H., C. Kacmar, and V. Choudhury. 2003. Whoops. did I use the wrong concept to predict ecommerce trust? modeling the risk-related effects of trust versus distrust concepts. Paper presented at the 36th Annual Hawaii International Conference on System Sciences, Washington, DC, USA, January 7–10. doi:10.1109/HICSS.2003.1174393.

(Meuter et al. 2000) Meuter, M. L., A. L. Ostrom, R. I. Roundtree, and M. J. Bitner. 2000. Self-service technologies: Understanding customer satisfaction with technology-based service encounters. *Journal of Marketing* 64: 50–64. doi:10.1509/jmkg.64.3.50.18024.

(Monecke and Leisch 2012) Monecke, A., and F. Leisch. 2012. Sempls: Structural equation modeling using partial least squares. *Journal of Statistical Software* 48: 1–32.

(Napoli and Obar 2014) Napoli, P. M., and J. A. Obar. 2014. The emerging mobile internet underclass: A critique of mobile internet access. *The Information Society* 30: 323–34. 10.1080/01972243.2014.944726

(Nicholds 2020) Nicholds, J. 2020. Removing the Barriers to Mobile Payments. Available online: https://www.globalbankingandfinance.com/removing-the-barriers-to-mobile-payments/ (accessed on 2 February 2021).

(Nugraheni et al. 2020) Nugraheni, D. M. K., A. Hadisoewono, and B. Noranita. 2020. Continuance Intention to Use (CIU) on Technology Acceptance Model (TAM) for m-payment (Case Study: TIX ID). Paper presented at the 4th International Conference on Informatics and Computational Sciences (ICICoS), Semarang, Indonesia, November 10–11. doi:10.1109/ICICoS51170.2020.9299100.

(Nunnally and Bernstein 1994) Nunnally, J.C., and I. H. Bernstein. 1994. The assessment of reliability. *Psychometric Theory* 3: 248–92.

(OFCOM 2020a) OFCOM. 2020a. Connected Nations Report 2019. Available online: https://www.ofcom.org.uk/__data/assets/pdf_file/0023/186413/Connected-Nations-2019-UK-final.pdf (accessed on 2 February 202).

(OFCOM 2020b) OFCOM. 2020b. Mobile Matters: Researching People's Experience of Using Android Mobile Services. Available online: https://www.ofcom.org.uk/__data/assets/pdf_file/0015/204162/mobile-matters-2020-report.pdf (accessed on 01 February 2021).

(OFCOM 2016) OFCOM. 2016. Connected Nations Report 2016: Concise Summary. Available online: https://www.ofcom.org.uk/__data/assets/pdf_file/0030/95880/CN16-Summary.pdf (accessed on 20 March 2018).

(Ofori et al. 2016) Ofori, K. S., O. Larbi-Siaw, E. Fianu, R. E. Gladjah, and O. E. Yeboah-Boateng. 2016. Factors influencing the continuance use of mobile social media: The effect of privacy concerns. *Journal of Cyber Security* 4: 207–26.

(Parthasarathy and Bhattacherjee 1998) Parthasarathy, M., and. A. Bhattacherjee. 1998. Understanding postadoption behavior in the context of online services. *Information Systems Research* 9: 362–79.

(Pavlou 2003) Pavlou, P. A. 2003. Consumer acceptance of electronic commerce: Integrating trust and risk with the technology acceptance model. *International Journal of Electronic Commerce* 7: 101–34.

(Pavlou et al. 2007) Pavlou, P.A., H. Liang, and Y. Xue. 2007. Understanding and mitigating uncertainty in online exchange relationships: A principal-agent perspective. *MIS Quarterly* 31: 105–36.

(Peeters and Czapinski 1990) Peeters, G., and J. Czapinski. 1990. Positive-negative asymmetry in evaluations: The distinction between affective and informational negativity effects. *European Review of Social Psychology* 1: 33–60.

(Peng et al. 2013) Peng, J., J. Quan, and S. Zhang. 2013. Mobile phone customer retention strategies and Chinese e-commerce. *Electronic Commerce Research and Applications* 12: 321–27. doi:10.1016/j.elerap.2013.05.002.

(Petter et al. 2013) Petter, S., W. DeLone, and E. R. McLean. 2013. Information systems success: The quest for the independent variables. *Journal of Management Information Systems* 29: 7–62. doi:10.2753/MIS0742-1222290401.

(Pew Research Center 2016) Pew Research Center. 2016. Smartphones Are More Common in Europe, U.S., Less so in Developing Countries. Available online: http://www.pewglobal.org/2016/02/22/smartphone-ownership-and-internet-usagecontinues-to-climb-in-emerging-economies/2-23-2016-10-31-58-am-2/ (accessed on 20 March 2018).

(Pi et al. 2012) Pi, S. M., H. L. Liao, and H. M. Chen. 2012. Factors That Affect Consumers' Trust and Continuous Adoption of Online Financial Services. *International Journal of Business Management* 7: 108–19.

(Podsakoff et al. 2003) Podsakoff, P., S. MacKenzie, J. Lee, and N. Podsakoff. 2003. Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology* 88: 879–903.

(Polites and Karahanna 2012) Polites, G. L., and E. Karahanna. 2012. Shackled to the status quo: The inhibiting effects of incumbent system habit, switching costs, and inertia on new system acceptance. *MIS Quarterly* 36: 21.

(Pollard 2003) Pollard, C. 2003. Exploring Continued and Discontinued Use of IT: A Case Study of OptionFinder, a Group Support System. *Group Decision and Negotiation* 12: 171–93. doi:10.1023/A:1023314606762.

(Putri et al. 2020) Putri, M. F., B. Purwandari, and A. N. Hidayanto. 2020. What do Affect Customers to Use Mobile Payment Continually? A Systematic Literature Review. Paper presented at 2020 Fifth International Conference on Informatics and Computing (ICIC), Gorontalo, Indonesia, November 3-4, pp. 1–6, doi:10.1109/ICIC50835.2020.9288590.

(PWC 2016) PWC. 2016. Mobile Proximity Payment. 5 Things Retailers Should Know. Available online: https://www.pwc.com/it/it/publications/assets/docs/mobile-proximity.pdf (accessed on 25 March 2020).

(PWC 2019) PWC. 2019. Mobile Payment Report 2019. Available online: https://www.pwc.de/de/digitale-transformation/pwc-studie-mobile-payment-2019.pdf (accessed on 2 February 2021).

(Raubenheimer 2004) Raubenheimer, J. E. 2004. An item selection procedure to maximize scale reliability and validity. South African *Journal of Industrial Psychology* 30: 59–64.

(Recker 2016) Recker, J. 2016. Reasoning about discontinuance of information system use. *Journal of Information Technology Theory Application* 17: 41–66.

(Rogers 2003) Rogers, E. M. 2003. *Diffusion of innovations*, 5th ed. New York: Free Press.

(Rose and Straub 2001) Rose, G. M., and D. W. Straub. 2001. The effect of download time on consumer attitude toward the e-service retailer. *E-Service* 1: 55–76.

(Ruiz Díaz 2017) Ruiz Díaz, G. 2017. The influence of satisfaction on customer retention in mobile phone market. *Journal of Retailing and Consumer Services* 36: 75–85. doi:10.1016/j.jretconser.2017.01.003.

(Rummel 1970) Rummel, R. J. 1970. *Applied Factor Analysis*. Evanston: Northwestern University Press.

(Schierz et al. 2010) Schierz, P. G., O. Schilke, and B. W. Wirtz. 2010. Understanding consumer acceptance of mobile payment services: An empirical analysis. *Electronic Commerce Research and Applications* 9: 209–16. doi:10.1016/j.elerap.2009.07.005.

(Schwab 1980) Schwab, D. P. 1980. Construct validity in organization behavior. In *Research in Organizational Behavior*. Edited by Jennifer A. Chatman and Laura Kray. Greenwich: JAI Press, vol. 2, pp. 3–43.

(Shao et al. 2019) Shao, Z., L. Zhang, X. Li, and Y. Guo. 2019. Antecedents of trust and continuance intention in mobile payment platforms: The moderating effect of gender. *Electronic Commerce Research and Applications* 33: 100823. doi:10.1016/j.elerap.2018.100823.

(Sheng et al. 2011) Sheng, M. L., C. Hsu, and C. Wu. 2011. The asymmetric effect of online social networking attribute-level performance. *Industrial Management and Data Systems* 111: 1065–86. doi:10.1108/02635571111161299.

(Skowronski and Carlston 1987) Skowronski, J. J., and D. E. Carlston. 1987. Social judgment and social memory: The role of cue diagnosticity in negativity, positivity, and extremity biases. *Journal of Personality and Social Psychology* 52: 689–99. doi:10.1037/0022-3514.52.4.689.

(Skowronski and Carlston 1989) Skowronski, J. J., and D. E. Carlston. 1989. Negativity and extremity biases in impression formation: A review of explanations. *Psychological Bulletin*, 105: 131–42.

(Slade et al. 2015) Slade, E. L., Y. K. Dwivedi, N. C. Piercy, and M. D. Williams. 2015. Modeling consumers' adoption intentions of remote mobile payments in the United Kingdom: Extending UTAUT with innovativeness, risk, and trust, *Psychology and Marketing* 32: 860–73, doi:10.1002/mar.20823.

(Slade et al. 2014) Slade, E., M. Williams, Y. Dwivedi, and N. Piercy. 2014. Exploring consumer adoption of proximity mobile payments. *Journal of Strategic Marketing* 23: 209–23. doi:10.1080/0965254X.2014.914075.

(Soliman and Rinta-Kahila 2020) Soliman, W., and T. Rinta-Kahila. 2020. Toward a refined conceptualization of IS discontinuance: Reflection on the past and a way forward. *Information and Management* 57: 103167. doi:10.1016/j.im.2019.05.002.

(Song et al. 2015) Song, J., S. Sawang, J. Drennan, and L. Andrews. 2015. Same but different? Mobile technology adoption in China. *Information Technology and People* 28: 107–32.

(Speier et al. 2003) Speier, C., I. Vessey, and J. S. Valacich. 2003. The effects of interruptions, task complexity, and information presentation on computer-supported decision-making performance. *Decision Sciences* 34: 771–97. doi:10.1111/j.1540-5414.2003.02292.x.

(Stangor 2011) Stangor, C. 2011. *Research Methods for the Behavioral Sciences*. Wadsworth: Cengage Learning.

(Statista 2014) Statista. 2014. Amount of Money Spent by Mobile Commerce or Mobile Payment Users in the United Kingdom as of December 2014. Available online: https://www.statista.com/statistics/508285/amount-of-moneyspent-by-mobile-commerce-or-mobile-payment-users-in-the-uk/ (accessed on 20 March 2018).

(Susanto et al. 2016) Susanto, A., Y. Chang, and Y. Ha. 2016. Determinants of continuance intention to use the smartphone banking services: An extension to the expectation-confirmation model. *Industrial Management and Data Systems* 116: 508–25. doi:10.1108/IMDS-05-2015-0195.

(Tan et al. 2019) Tan, K. L., A. M. Memon, P. L. Sim, C. M. Leong, F. K. Soetrisno, and K. Hussain. 2019. Intention to Use Mobile Payment System by Ethnicity: A Partial Least Squares Multi-group Approach. *Asian Journal of Business Research* 19: 36–59. doi:10.14707/ajbr.190055.

(Taylor 1991) Taylor, S. E. 1991. Asymmetrical effects of positive and negative events: The mobilization-minimization hypothesis. *Psychological Bulletin* 110: 67–85. doi:10.1037/0033-2909.110.1.67.

(Taylor and Todd 1995) Taylor, S., and P. A. Todd. 1995. Understanding information technology usage: A test of competing models. *Information Systems Research* 6: 144–76. doi:10.1287/isre.6.2.144.

(Teo et al. 2009) Teo, T. S. H., S. C. Srivastava, and L. Jiang. 2009. Trust and electronic government success: An empirical study. *Journal of Management Information Systems* 25: 99–131. doi:10.2753/MIS0742-1222250303.

(Thatcher et al. 2003) Thatcher, J. B., M. Srite, L. P. Stepina, and L. I. U. Yongmei. 2003. Culture, overload and personal innovativeness with information technology: Extending the nomological net. *Journal of Computer Information Systems* 44: 74–81.

(TSYS 2015) TSYS. 2015. 2015 U.K. Consumer Mobile Payment Study. Available online: http://tsys.com/Assets/TSYS/downloads/rs_2015-uk-consumer-mobile-payment-study.pdf (accessed on 2 March 2018).

(Turel 2015) Turel, O. 2015. Quitting the use of a habituated hedonic information system: A theoretical model and empirical examination of facebook users. *European Journal of Information Systems* 4: 431–46. doi:10.1057/ejis.2014.19.

(Turel 2016) Turel, O. 2016. Untangling the complex role of guilt in rational decisions to discontinue the use of a hedonic Information System, *European Journal of Information Systems* 25: 432–47. doi:10.1057/s41303-016-0002-5.

(Turel and Serenko 2012) Turel, O., and A. Serenko. 2012. The benefits and dangers of enjoyment with social networking websites. *European Journal of Information Systems* 21: 512–28.

(Uswitch 2020) Uswitch. 2020. Drain Nation—Which Apps Drain Our Batteries the Most? Available online: https://www.uswitch.com/mobiles/drain-nation/ (accessed on 2 February 2021).

(Vargo et al. 2007) Vargo, S. L., K. Nagao, Y. He, and F. W. Morgan. 2007. Satisfiers, Dissatisfiers, Criticals, and Neutrals: A Review of Their Relative Effects on Customer (Dis)satisfaction.. Available online: https://cdn.ymaws.com/www.ams-web.org/resource/resmgr/original_amsr/vargo2-2007.pdf (accessed on 17 February 2021).

(Venkatesh and Brown 2001) Venkatesh, V., and S. A. Brown. 2001. A longitudinal investigation of personal computers in homes: Adoption determinants and emerging challenges. *MIS Quarterly* 25: 71–102.

(Venkatesh et al. 2003) Venkatesh, V., M. G. Morris, G. B. Davis, and F. D. Davis. 2003. User acceptance of information technology: Toward a unified view. *MIS Quarterly* 27: 425–78.

(Verma et al. 2020) Verma, S., S. S. Chaurasia, and S. S. Bhattacharyya. 2020. The effect of government regulations on continuance intention of in-store proximity mobile payment services. *International Journal of Bank Marketing* 38: 34–62. doi:10.1108/IJBM-10-2018-0279.

(VISA 2016) VISA. 2016. Mobile Payments Soar as Europe Embraces New Ways to Pay. Available online: https://www.visaeurope.com/media/pdf/40172.pdf (accessed on 2 March 2018).

(Wang 2015) Wang, K. 2015. Determinants of mobile value-added service continuance: The mediating role of service experience. *Information and Management* 52: 261–74. doi:10.1016/j.im.2014.11.005.

(Wang et al. 2015) Wang, R. J.-H., E. C. Malthouse, and L. Krishnamurthi. 2015. On the go: How mobile shopping affects customer purchase behavior. *Journal of Retailing* 91: 217–34.

(Wang and Qian 2015) Wang, X., and Y. Qian. 2015. Examining the determinants of users' continuance intention in the context of mobile instant messaging: The case of WeChat. Paper presented at the 2015 International Conference and Workshop on Computing and Communication (IEMCON), Vancouver, BC, Canada, October 15–17. doi:10.1109/IEMCON.2015.7344464.

(Wang 2008) Wang, Y. 2008. Assessing e-commerce systems success: A respecification and validation of the DeLone and McLean model of IS success. *Information Systems Journal* 18: 529–57. doi:10.1111/j.1365-2575.2007.00268.x.

(Watson et al. 1988) Watson, D, A. L. Clark, and A. Tellegen. 1988. Development and validation of brief measures of positive and negative affect: The PANAS scales. *Journal of Personality and Social Psychology* 54: 1063–70.

(Wixom and Todd 2005) Wixom, B. H., and P. A. Todd. 2005. A theoretical integration of user satisfaction and technology acceptance. *Information Systems Research* 16: 85–102. doi:10.1287/isre.1050.0042.

(Wixom and Watson 2001) Wixom, B. H., and H. J. Watson. 2001. An empirical investigation of the factors affecting data warehousing success. *MIS Quarterly* 25: 17–41.

(Xu and Gupta 2009) Xu, H., and S. Gupta. 2009. The effects of privacy concerns and personal innovativeness on potential and experienced customers' adoption of location-based services. *Electronic Markets* 19: 137–49. doi:10.1007/s12525-009-0012-4.

(Xu et al. 2013) Xu, J., I. Benbasat, and R. T. Cenfetelli. 2013. Integrating service quality with system and information quality: An empirical test in the E-service context. *MIS Quarterly* 37: 777–94.

(Yan et al. 2021) Yan, L. Y., G. W. H. Tan, X. M. Loh, J. J. Hew, and K. B. Ooi. 2021. QR code and mobile payment: The disruptive forces in retail. *Journal of Retailing and Consumer Services* 58: 102300. doi:10.1016/j.jretconser.2020.102300.

(Yang et al. 2012) Yang, S., Y. Lu, S. Gupta, Y. Cao, and R. Zhang. 2012. Mobile payment services adoption across time: An empirical study of the effects of behavioral beliefs, social influences, and personal traits. *Computers in Human Behavior* 28: 129–42. doi:10.1016/j.chb.2011.08.019.

(Yuan et al. 2016) Yuan, S., Y. Liu, R. Yao, and J. Liu. 2016. An investigation of users' continuance intention towards mobile banking in China. *Information Development* 32: 20–34. doi:10.1177/0266666914522140.

(Yzerbyt and Leyens 1991) Yzerbyt, V. Y., and J. P. Leyens. 1991. Requesting information to form an impression: The influence of valence and confirmatory status. *Journal of Experimental Social Psychology* 27: 337–56.

(Zhang and von Dran 2000) Zhang, P., and G. M. von Dran. 2000. Satisfiers and dissatisfiers: A two-factor model for website design and evaluation. *Journal of the American Society for Information Science* 51: 1253.

(Zhao et al. 2012) Zhao, L., Y. Lu, L. Zhang, and P. Y. K. Chau. 2012. Assessing the effects of service quality and justice on customer satisfaction and the continuance intention of mobile value-added services: An empirical test of a multidimensional model. *Decision Support Systems* 52: 645–56. doi:10.1016/j.dss.2011.10.022.

(Zhou 2011) Zhou, T. 2011. Understanding mobile internet continuance usage from the perspectives of UTAUT and flow. *Information Development* 27: 207–18. doi:10.1177/0266666911414596.

(Zhou 2013) Zhou, T. 2013. An empirical examination of continuance intention of mobile payment services. *Decision Support Systems* 54: 1085–91. doi:10.1016/j.dss.2012.10.034.

(Zhou 2014a) Zhou, T. 2014a. An empirical examination of initial trust in mobile payment. *Wireless Personal Communications*, 77: 1519–31.

(Zhou 2014b) Zhou, T. 2014b. Understanding the determinants of mobile payment continuance usage. *Industrial Management and Data Systems* 114: 936–48. doi:10.1108/IMDS-02-2014-0068.

(Zhou 2014c) Zhou, T. 2014c. Understanding continuance usage intention of mobile internet sites. *Universal Access in the Information Society* 13: 329–37. doi:10.1007/s10209-013-0313-4.

(Zhou and Lu 2011) Zhou, T., and Y. Lu. 2011. Examining postadoption usage of mobile services from a dual perspective of enablers and inhibitors. *International Journal of Human-Computer Interaction* 27: 1177–91. doi:10.1080/10447318.2011.565717.

(Zhou et al. 2015) Zhou, T., H. Li, and Y. Liu. 2015. Understanding mobile IM continuance usage from the perspectives of network externality and switching costs. *International Journal of Mobile Communications*, 13: 188–203.