

Effects of Psychological Barriers to E-payment on Alternative Attractiveness and Intention to Use: A Conceptual Framework

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Received: October 16, 2025; Revised: January 8, 2026; Accepted: January 9, 2026

Abstract

Despite technological advances in electronic payment (e-payment) systems and their increasing relevance in modern economies, many consumers, especially in countries like Thailand, remain hesitant to adopt these innovations. This conceptual model emphasizes the necessity of addressing these psychological barriers, especially traditional and image barriers to E-payment on alternative attractiveness and intention to use by presenting an innovation resistance theory that interlinks psychological resistance, alternative attractiveness, and intention to use. Finally, the findings are intended to inform not only academic debates but also strategic practices for both fintech innovators and policymakers seeking to drive inclusive digital transformation, and it offers recommendations for research design aimed at facilitating and accelerating the adoption of electronic payments as a mainstream payment modality in the future.

Keywords: Psychological Barriers; E-payment; Alternative Attractiveness; Intention to Use

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Introduction

In the digital age, financial transactions have undergone a profound transformation, with e-payment systems emerging as one of the most innovative and rapidly expanding sectors in the global economy. Electronic payment (E-payment) has become increasingly popular for online shopping today. E-payment is an essential part of e-commerce transactions, including electronic payment for buying and selling goods or services offered by organizations over the Internet (Sindermann et al., 2021). In Thailand, cash remains the dominant payment choice for most Thais, compared to e-payment. The proportion is 66 to 34, with Thai people typically using cash for daily consumption and expenses (Bank of Thailand, 2023). This transition toward digital payments promises a multitude of societal benefits, ranging from increased financial inclusion and convenience to heightened efficiency in financial transactions (Rampton, 2016). Despite these advantages, adoption rates of e-payment systems do not reflect their technological potential, especially in developing contexts such as Thailand. This gap raises a critical question: What are the unseen psychological factors beyond technological access and utility that deter individuals from embracing digital payments? Security concerns, risk perception, and conflict with traditional practices are emergent themes in scholarly and practical discussions (Hayashi, 2012). Adoption rates could rise if these psychological barriers can be addressed systematically. This study, therefore, aims to identify specific resistance factors to guide practitioners in developing strategic interventions—such as trust-building campaigns and user-friendly interface designs—that mitigate consumer conflict and facilitate the transition toward a more inclusive and resilient digital economy (Ram and Sheth, 1989).

A previous study found that adopting e-payment systems has largely centered on the technical aspects such as usability, security protocols, and perceived value (Laukkanen, 2016). Theoretical frameworks like Innovation Resistance Theory (IRT) shed light on the various barriers, both functional and psychological, that inhibit technology uptake (Ram and Sheth, 1989; Claudy et al., 2015). Functional barriers tend to focus on tangible issues like complexity or lack of perceived improvements, while psychological barriers are more subtle, relating to habit, tradition, and perceived reputation (Joachim et al., 2018). Recent studies have confirmed that a negative image or perceived incompatibility with prevailing traditions significantly dampens interest in e-payment options (Laukkanen et al., 2007; Mani and Chouk, 2018). Simultaneously, attractive alternatives such as cash or other digital wallets can sway users away from adopting new platforms, even when such platforms offer superior functionality. (Colgate and Lang, 2001). Alternative attractiveness increases intention to use; however, alternative attractiveness, affected by resistance barriers, decreases intention to use (Lee and Kim, 2022).

Unlike previous studies that predominantly relied on the Technology Acceptance Model (TAM) to explain adoption through functional drivers like perceived usefulness and ease of use (e.g., Davis, 1989; Venkatesh et al., 2003), this proposed framework shifts the focus toward 'resistance'. While TAM assumes that positive attributes lead to adoption, it neglects the active resistance caused by psychological conflict. This paper particularly contrasts with (Laukkanen, 2016). who examined barriers generally, by specifically integrating 'Alternative Attractiveness' as a moderating force. The theoretical contribution of this study is explicitly declared here: This research proposes a novel, integrated conceptual model that extends Innovation Resistance Theory (IRT) in two critical ways. First, it validates IRT's applicability

within the dynamic context of financial technology adoption in a developing economy, moving beyond traditional hardware innovation contexts. Second, by introducing 'Alternative Attractiveness' as a key intervening variable between psychological barriers and intention to use, this framework explicitly addresses the known gap in literature regarding the "pro-innovation bias," by explaining how the persistent allure of cash actively reinforces psychological resistance to digital adoption.

However, one substantial gap exists in the current literature: Limited research explores how psychological resistance mechanisms directly influence consumer perceptions of alternative attractiveness and the ensuing intention to use e-payment systems within unbanked populations. While some works have touched on resistance and alternatives (Kuo, 2020), the interplay between psychological barriers, perceived options, and intention to use is rarely theorized within a unified conceptual framework, especially in markets where banking penetration remains imperfect and traditions are deeply rooted. This study advances theoretical and practical understanding by presenting an original conceptual model that interlinks psychological resistance, alternative attractiveness, and behavioral intention. By situating empirical analysis in Thailand, a country balancing rapid digitalization with enduring cultural traditions, this research not only extends Innovation Resistance Theory but also offers new recommendations for developing payment solutions. Consequently, the findings promise to inform not only academic debates but also strategic practices for both fintech innovators and policymakers seeking to drive inclusive digital transformation.

This study attempts to answer the following research questions based on the identified research gaps.

RQ 1: Which Traditional and image barriers are significant in the context of E-payment?

RQ 2: How do these barriers decrease the attractiveness of replacing E-payment and behavior intentions?

The main theoretical contribution of the answers to these research questions is that they can provide new insights into undeveloped but critical knowledge in the E-payment literature. This study utilizes the innovation resistance theory as a theoretical lens to identify a resistance mechanism to E-payment has not been studied. This approach highlights why resistance to the adoption of E-payment is formed and explores the impact of innovation resistance on consumers' attitudes and behaviors toward E-payment. The results of this study address pro-innovation bias, which is a gap found in prior literature

Method: Literature Review

Innovation Resistance Theory (IRT)

The IRT offers a theoretical framework for customer resistance. The theory helps in understanding the resistance-oriented behavior of users. Innovation resistance is "the resistance offered by customers to an innovation, either because it poses potential changes from a satisfactory status quo or because it conflicts with their belief structure" (Ram and Sheth, 1989). Innovation resistance theory investigates what influences consumers' resistance to adopting technology-enabled new services or products (Yu et al., 2015; Yu and Chantatub, 2016; Claudy et al., 2015). Innovation resistance theory consists of both functional and psychological barriers. First, the functional barrier is an obstacle that directly

impacts the constraint of consumers; it can be divided into the usage barrier, value barrier, and risk barrier that consumers may associate with a new product or service. Also, the usage barrier mainly implies the role of functional usability of an innovation. Moreover, the value barrier is defined as the perceived superiority of an innovation to the product or service it follows. Furthermore, the risk barrier relates to the form of different risk types, such as fraud or product quality. Second, psychological barriers are often caused by conflict with consumers' prior beliefs, including traditional and image barriers. Besides, the traditional barrier arises when an innovation is incompatible with an individual's existing values, norms, and experience, and may block the adoption of the innovation. On the other hand, the image barrier could be considered as the image of mobile banking services (Yu et al., 2015; Yu and Chantatub, 2016; Jansukpum and Kettem, 2015; Ram and Sheth, 1989; Laukkanen et al., 2007; Luo et al., 2012; McCarthy and Schurmann, 2015; Ram and Sheth, 1989).

Psychological barriers

The psychological barriers to perceived value include consumers' habits, norms, beliefs, images, and traditions. When designing and deploying an innovative product/service, traditional norms should be considered, and a favorable image should be maintained. Any compromise or oversight in this matter will be disastrous for the company.

The current literature (i.e., Claudy et al., 2015; Laukkanen et al., 2007) has divided psychological barriers into two major domains: tradition and image. The traditional barrier is defined as the consumers' perception that adopting or using a new product/service will challenge or change their habit and lifestyle compared to the use of the existing parallel product(s) (Mani and Chouk, 2018). Despite, the image barrier is defined as the degree to which a new product/service is perceived as having an unfavorable or lousy image (Claudy et al., 2015; Ram and Sheth, 1989).

According to Ram and Sheth (1989), traditional barriers usually become stronger when consumers believe that adopting or continually using a new or innovative product will affect their value, and the product should thus be resisted. Likewise, a relatively complex and risky product/service, such as a mobile payment system, may obtain a negative image (Hayashi, 2012), which will reduce its perceived usability, benefits, or value.

Alternative Attractiveness

In competitive environments, the number of alternatives will increase based on the marketplace's principle of demand and supply. This implies that the consumers might choose products or services that fulfill their needs and preferences. As the market is competitive, the possibility of emerging alternatives is high, and, as a result, the likelihood that customers will replace their current service provider is also high.

Alternative attractiveness is conceptualized as a customer's estimate of the likely satisfaction available in an alternative relationship. It is a favorable situation to retain the customers when there is a lack of alternative attractiveness offering (Ping, 1993). Alternative attractiveness is identified when customers perceive that alternative services have many advantages over current services (Cheng et al., 2017; Colgate and Lang, 2001; Jones et al., 2000). Sharma and Patterson (2000) commented that if the customers do not know the better alternative suppliers, they may still stay with the company, although they perceive less than satisfactory. However, if the customers know the better alternative suppliers due to the availability of better service, better location, a full range of services, or lower fees,

they will decide to terminate the relationship with the company and go to a new company. When customers recognize alternative attractiveness to innovative services, the psychological and practical relationship with the current services is negatively changed, and a new relationship is built with the innovative service (Kuo, 2020; Liu et al., 2016; Sibona et al., 2017). Alternative attractiveness influences consumer decision-making to stay with the current service provider (Colgate and Lang, 2001). Although prior studies have discussed alternative attractiveness effects on the relationship between affective and behavior constructs (Zhang et al., 2023), only limited studies have been conducted in the e-payment area, especially in Thailand.

Intention to Use

The dependent variable of the proposed conceptual model is customers' intention to use E-payment in Thailand. The Intention to use is the customer's will or plan to use a new service. Therefore, behavioral intention provides useful information for predicting customers' actual behavior toward new services (Venkatesh et al., 2003), and was measured using the method described by questionnaires (Lee and Kim, 2022; Schierz et al., 2010; Venkatesh et al., 2003)

In previous studies, behavioral intention was used as a key variable to explain customers' behavior toward E-payment in Thailand, that are in the initial stage of introduction. However, previous innovation literature has indicated that customers' innovation resistance decreases their behavioral intention (Joachim et al., 2018; Lian and Yen, 2013; Talwar et al., 2020).

E-Payment

The emergence of electronic payment (e-payment) systems represents a pivotal shift in how consumers and businesses conduct financial transactions. E-payment, broadly defined, refers to digital methods of transferring monetary value without using physical cash or checks, including mobile wallets, internet banking, and contactless payments. These innovations are often promoted for their convenience, speed, and potential to increase financial inclusion (Hayashi, 2012).

Viewed through theoretical frameworks such as the Technology Acceptance Model (TAM) and Innovation Resistance Theory, e-payment adoption is shaped by more than just technology readiness. Emphasized that security, consumer trust, and perceived benefits play crucial roles in consumers' willingness to use mobile payments. The perceived risk of personal data loss, uncertainty about transaction safety, and the absence of universally accepted standards often hinder adoption, despite the technological feasibility (Hayashi, 2012).

Building on these insights, we examined how psychological and functional barriers influence the adoption of new financial technologies. They introduced the notion of "innovation resistance," explaining that consumers may reject e-payment not only due to technical complexity or security concerns, but also because of habit, tradition, and a lack of perceived advantage over existing practices. Mature consumers tend to show higher resistance grounded in routine behavior and skepticism towards digital solutions (Laukkanen et al., 2007).

Resistance can also stem from "image barriers" – negative associations about the unfamiliar or untrusted nature of digital services. When users perceive e-payment brands as insecure or incompatible with their lifestyle and social group, intentions to adopt are further weakened. This is especially true in cultures or age groups with deep-rooted preferences for cash and physical banking (Laukkanen et al., 2007).

Innovation Resistance Theory adds depth to understanding these phenomena by distinguishing between functional barriers (practical obstacles, such as usability issues) and psychological barriers (emotional obstacles, such as tradition or image). Their framework clarifies that for financial innovations like e-payment to succeed, both sets of barriers must be addressed, not merely technological shortcomings (Ram and Sheth, 1989).

In summary, the adoption of e-payment solutions is a complex interplay between system features, perceived risk and advantage, and consumer psychology. Addressing only technical aspects is not enough; proactive efforts supporting trust, perceived value, and compatibility with existing habits are necessary to unlock the full potential of e-payment in society.

Data for the analysis were collected through an online survey. The questionnaire for the survey was developed by adapting pre-validated scales used by prior studies. All items were measured using a 5-point Likert-type scale (from 1=strongly disagree to 5= strongly agree). The model was tested using the partial least squares structural equation modeling (PLS-SEM) method.

Result

Conceptual Model and Research Proposition

Customers have been experiencing human services for a long time and have values and beliefs that lead to satisfaction and trust (Laukkanen et al., 2008; Ram and Sheth, 1989). Previous studies found that customers prefer current services that can maintain their beliefs and values when innovations cause unacceptable changes in their experiences (Joachim et al., 2018; Mani and Chouk, 2018).

The traditional barrier is classified based on psychological innovation resistance as an interference with valued routines. However, the tradition barrier indicates how the influence of tradition on resistance varies (Ram and Sheth, 1989). Given this prior literature, it can be assumed that if the traditional relationship that customers expect is not developed between customers and E-payment, customers will prefer cash (Figure 1).

Proposition 1: Traditional barriers have a negative effect on alternative attractiveness.

If the advantages of innovative services are not highlighted to customers, a negative image of innovation is developed, and they cannot replace current services (Joachim et al., 2018). specially when the innovation belongs to the same category as the current services, innovative services can replace the current services only by providing a positive image to customers (Lian and Yen, 2013). The image barriers are formed by stereotypes of innovation, which are based on the country of origin or the industry, and are likely to result in resistance. The image barrier is established based on prejudices, which are perceived individually (Ram and Sheth, 1989).

Proposition 2: Image barriers have a negative effect on alternative attractiveness.

Alternative Attractiveness and Intention to Use

Alternative attractiveness is an important factor that induces customers' intention to switch from current services to alternative services (Kuo, 2020). If alternative services are not provided or

lack attractiveness, customers will continue to engage with the current services (Ghazali et al., 2016). Moreover, if innovation offers customers more attractiveness than human services, customers' intentions to use the innovation are developed (Kim et al., 2016). These previous studies provide strong theoretical evidence that E-payment can be chosen by customers if using them as an alternative to using cash is attractive.

Proposition 3: Alternative attractiveness has a positive effect on intention to use.

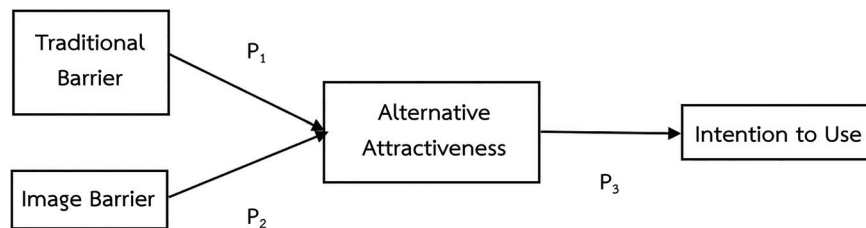


Figure 1 The conceptual model

Theoretical Contributions

This study extends the Innovation Resistance Theory (IRT) by indicating that resistance not only directly inhibits intention but also encourages consumers' perceived alternative attractiveness, a psychological defense mechanism. Last but not least, the attractiveness of the alternative is a key variable in reducing the intention to use the new innovation, such as E-payment.

Conclusion

This study aimed to identify the psychological barriers hindering the adoption of e-payment systems in Thailand and to examine how the attractiveness of alternative payment methods (such as cash) moderates this relationship. Based on the integrated framework proposed, the analysis reveals that psychological resistance—specifically Tradition and Image barriers—plays a critical role in shaping consumer intentions. Unlike functional barriers that can be resolved with technical upgrades, these psychological factors are deeply rooted in user habits and perceptions. The findings confirm that when consumers perceive cash as a more attractive and reliable alternative, their innovative resistance to e-payment significantly increases, thereby diminishing their intention to adopt digital solutions.

The primary theoretical contribution of this research is twofold, extending the boundaries of existing technology adoption literature. First, this study extends Innovation Resistance Theory (IRT) beyond its traditional application. While previous IRT studies primarily focused on product innovation characteristics, this research successfully validates the theory within the context of financial service digitalization in a developing economy. It demonstrates that 'Image' and 'Tradition' barriers are not merely passive hurdles but active psychological inhibitors in the Thai context. Second, and most significantly, this paper fills a critical gap by integrating 'Alternative Attractiveness' as a novel determinant within the resistance framework. Existing models like TAM or UTAUT largely overlook the 'pro-innovation bias' assuming innovation is always better and neglects the pull-power of existing habits. By theoretically

linking psychological barriers with the attractiveness of alternatives, this study provides a more holistic model. It elucidates why resistance persists even when technology is functional because the psychological comfort of the status quo (cash) actively competes with the new technology.

For practitioners and policymakers, these findings suggest that strategies focusing solely on technical efficiency are insufficient. To overcome the 'Image' barrier, marketing campaigns must reposition e-payment not just as a tool, but as a modern, trustworthy norm that aligns with Thai values. To dismantle the 'Tradition' barrier, interventions should aim to decrease the perceived attractiveness of cash perhaps by incentivizing digital transactions or highlighting the hidden costs and risks of cash handling.

Despite these contributions, this study has limitations that offer avenues for future research. As this research utilizes a conceptual framework validated through literature synthesis and initial propositions, future studies should conduct empirical testing using quantitative methods (e.g., Structural Equation Modeling) with a large-scale sample to statistically validate the proposed relationships. Additionally, investigating the moderating role of demographic factors such as age and digital literacy could provide deeper insights. Future research could also expand this framework to compare resistance levels across different types of fintech innovations, such as cryptocurrency or central bank digital currencies (CBDC), to see if the 'Alternative Attractiveness' variable remains a dominant predictor.

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