The Strategic Decision on Mobile Payment: A Study on Merchants’ Adoption

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Abstract

Mobile payment is the activity in which a monetary transaction is made through a mobile device, it has been experiencing impressive growth in recent years. It is not only a means of payment, but also a way to increase consumers’ willingness to pay. Mobile payment generates positive business outcomes including higher revenues and increased hiring. Although mobile payment is strategically important for merchants to achieve their financial goals, very few researches systematically studied merchants’ adoption of mobile payment. The missing knowledge makes it hard to understand what influence merchants’ decision on the adoption of mobile payment. This study extracted 172 mobile payment related papers from three reputable databases, 32 of them were included in this study as they focus on organizations. A systematic analysis on those included papers identified the factors that impact merchants’ adoption.

Keywords

Mobile payment, M-payment, Near-field communication, NFC, QR code

Introduction

Mobile payment is the activity in which a monetary transaction is made through a mobile device (Ghezzi et al., 2010). In recent years, mobile payment has been experiencing impressive growth. In June 2012, nearly 30 million active users performed transactions totaling 4.6 billion U.S. dollars through 78 mobile payment service providers in 49 countries (Horne et al., 2015). Mobile payments in the U.S. were 50 billion U.S. dollars in 2014, and it is expected to reach 142 billion U.S. dollars in 2019 (New York Times, 2014). Mobile payment is believed to replace traditional payment methods such as checks, debit cards and credit cards (Congdon, 2016). As mobile payment can significantly increase customers’ willingness to pay (Falk et al., 2016), it is not only a fast method of payment, but also a new tool to positively influence customers’ purchasing decisions. Higher revenues and increased hiring have been identified as the business outcomes of mobile payment (Horne et al., 2015). Although the diffusion of mobile payment in different regions of the world is very different (Guo and Bouwman, 2016) and different regions favor distinct mobile payment technologies, mobile payment is playing an important role for merchants. As strategic management concerns about how organizations formulate and implement strategies to achieve desired performances (Schendel and Hofer, 1979), and customers’ payment is a critical step towards reaching organizations’ desired financial performance, mobile payment represents an important aspect of the strategic management of IT. Researchers also stated that mobile payment has strategic impacts on many companies (Mallot, 2007; Lim, 2008; Wurster, 2014). However, very few researches studied the factors that impact merchants’ intention to adopt mobile payment. This gap makes the knowledge about mobile payment incomplete. Understanding the factors that impact merchants’ adoption is critical for researchers to have a holistic view. For practitioners, especially the mobile payment service companies, knowing how merchants perceive mobile payment is a prerequisite condition to deliver the right service to clients. As mobile payment can decrease the volume of cash payment and make tax evasion harder, governments also need to know how to advocate mobile payment, then they can utilize it to solve real issues. To fill this important gap, we established the following research question.

RQ: What factors impact merchants’ intention to adopt mobile payment?
Literature Review

To answer the research question, we did a systematic literature review on mobile payment related papers. Webster and Watson’s (2002) study was respected in order to achieve an effective review. To guarantee that the literature review process is systematic and rigorous, we followed the guidelines proposed in Arksey and O’Malley (2005), Levac et al. (2010), and Daudt et al. (2013), the review process is composed of five steps.

Step 1, establishing a review protocol. Before doing the literature review, we established a review protocol. This protocol serves as the mandate to instruct, monitor and control the review process. It depicts what research question we want to answer, what boundaries we specify, how we search for the literature, what inclusion and exclusion criteria we use, what content analysis technique we adopt, how we develop the coding scheme, how to analyze data, and how we synthesize knowledge. The initial version of the review protocol was drafted before we actually review the literature, and it is being updated over time. As the more time we spend on this study, the more understanding we have on mobile payment, the review protocol evolves over time in order to well serve our research purposes.

Step 2, searching for the literature. In the searching process, we did a pilot test on different databases that collect scientific papers. Finally, we selected three reputable databases as our literature sources, they are ABI/INFORM Collection (ProQuest), Academic Search Complete (EBSCO) and ScienceDirect (Elsevier). The reasons for choosing them are that their collections of scientific papers are comprehensive, and the papers are searchable via different combinations of searching criteria. Since the selection of keywords has a significant impact on the databases’ output of literature, we did a pilot test on different keywords before doing the formal search. We found that “mobile payment” and “m-payment” are the two best keywords that can represent mobile payment related papers, so we used them to search for the literature. The searching criteria were: 1. must be written in English; 2. must be peer reviewed scientific paper; 3. the abstract section must contain at least one of the two keywords. The searching resulted 172 papers (nABI/INFORM Collection (ProQuest) = 70, nAcademic Search Complete (EBSCO) = 22, nScienceDirect (Elsevier) = 80).

Step 3, screening the literature. Although in the searching step we used reputable databases, refined keywords and well-tested searching criteria, we still found irrelevant literature when reading through the papers that were extracted from the databases. Therefore, a manual screening process was conducted to exclude those irrelevant papers. The excluded papers were: the duplicate papers, news reports or articles in other forms rather than scientific paper, the papers that are not peer reviewed, the papers focus on consumers rather than organizations, and the papers that study mobile payment solely from a technological perspective. Although written-in-English was set to be one of the searching criteria, the databases still output non-English papers, they were also excluded in this step. Finally, 32 papers were included in this study.

Step 4, charting the literature. According to Arksey and O’Malley (2005), the literature should be charted according to key themes and issues. To do so, a content analysis is needed. Hsieh and Shannon (2005) proposed three approaches to do content analysis. Because we planned to review the literature from merchants’ standpoint, and there were no existing coding schemes that we could use to chart the literature, so we decided to use conventional content analysis technique. Conventional content analysis is usually used when existing studies are not abundant. It does not use preconceived categories to analyze and code the data, but to let the categories to emerge when analyzing the literature. In the first few rounds of reviewing the literature, we did not immediately code the data, but looked for insights, and built our classification framework and the coding scheme. In the following rounds, we charted the literature and synthesized the knowledge.

Step 5, analyzing the data. In this step, the charted data were systematically analyzed in order to answer our research question. In addition to our research focus, we also paid attention to the aspects that we might be not aware of.

Preliminary Findings

In the first few rounds of reviewing the literature, we found that tremendous effort was made to study consumers’ adoption of mobile payment. However, very few papers are from organizations’ perspective. After synthesizing the knowledge in the organization-focused papers, we identified seven factors and established the hypotheses.
Mobile Efficacy

Mobile payment is a new payment method, it is related to both information technologies and financial technologies (fintech). To adopt mobile payment, merchants have to possess the knowledge about their resources, capabilities, mobile payment service providers and mobile strategies (Guo and Bouwman, 2016). But in reality, merchants may have no idea about what they can do with their existing hardware and software, it is not uncommon to see merchants stick a label on a mobile-payment-ready POS, saying “mobile payment not supported”. Owning the proper hardware and software does not necessarily mean that merchants have the power to take advantage of it. Confidence and know-how are as important as the necessary equipment to adopt mobile payment.

H1. Mobile efficacy positively impacts merchants’ intention to adopt mobile payment.

Facilitating Conditions

Globally speaking, mobile phone manufacturers are playing a major role in the diffusion of mobile payment. Apple pay, Android pay and Samsung pay are deployed all over the world, NFC is the leading technology in the mobile payment market (Park and Lee, 2016). In developed countries, the popularity of NFC-enabled POS is a key facilitating condition for NFC-based mobile payment. In China, which is a major mobile payment market, Alipay, (owned by Alibaba, a large E-commerce company) and WeChat (owned by Tencent, a large social network company) are dominating the country’s mobile payment market. As NFC is not widely used in China, the two large mobile payment service providers take advantage of mobile app to facilitate the adoption of QR-code-based mobile payment services. In Kenya, mobile companies act as mobile payment service provider, they use airtime resellers to facilitate the adoption of mobile payment. High market share in the mobile market has been found to have a positive impact on the adoption of mobile payment (Horne et al., 2015). For the merchants who have low mobile efficacy, strong facilitating condition may offset their weakness.

H2a. Facilitating condition positively impacts merchants’ intention to adopt mobile payment.
H2b. Facilitating condition moderates the relationship between mobile efficacy and merchants’ intention of adoption.

Perceived Convenience

Shin (2010) stated that what makes mobile payment very interesting is that the payment services for any retail purchases are no longer bounded to the established banking systems. Merchants may get mobile payment services from non-banking companies and avoid the bureaucratic procedures that they have to go through with banks. Simplified procedures make payment transaction more convenient, and convenience is favored by merchants (Wurster, 2014). Especially QR-code-based mobile payment does not require new hardware setup, merchants can even establish it without engineer’s intervention.

H3. Perceived convenience positively impacts merchants’ intention to adopt mobile payment.

Perceived Costs

Cost is a major consideration when making a decision on the adoption of mobile payment. As QR-code-based mobile payment does not require extra hardware, low deployment cost stimulated its wide spread in China. NFC-based mobile payment usually needs merchants to install new POS or update their existing POS, the added costs can be a barrier for merchants’ adoption (Ghezzi et al., 2010).

H4. Perceived costs negatively impact merchants’ intention to adopt mobile payment.

Perceived Benefits

In the countries where credit cards are not popular, mobile payment can be an effective way to replace cash. The benefits of this transition are the avoidance of the loss due to counterfeit banknotes and the saving of time when checking customers out. Mobile payment also makes remote transaction easier to be done, building more contact points and serving more customers (Mallat and Tuunainen, 2008). Identifying the
benefits is important for merchants, otherwise the adoption of mobile payment can be hindered (Ghezzi et al., 2010).

**H5. Perceived benefits positively impact merchants' intention to adopt mobile payment.**

**Perceived Risks**

According to Morosan and DeFranco (2016), credit card companies urged the U.S. merchants to replace magnetic stripe credit cards and POS with chip-based EMV cards due to the rampant credit card fraud. However, the deployment of EMV cards in the U.S. is slow, and this gives mobile payment a chance to grow. Counterfeit banknotes and fake credit cards are threats to merchants’ profit, so reducing those risks is a high-priority task. Technically speaking, mobile payment is relatively safer than credit cards, as mobile payment can use password, fingerprint or face ID to identify legal users. But the merchants who are not familiar with mobile payment technologies may perceive high risks associated with new technologies (Liébana-Cabanillas and Lara-Rubio, 2017), and perceived risks may inhibit merchants’ intention of adoption.

**H6. Perceived risks negatively impact merchants’ intention to adopt mobile payment.**

**Social Influence**

In Europe, the U.S. and other countries where credit card is popular, mobile payment is less used (Ghezzi et al., 2010; Kapoor et al., 2015; Miao and Jayakar, 2016). This is because in developed countries credit cards have become part of people’s life, and many credit cards already support contactless payment, which is convenient and fast. People do not have the needs for mobile payment. However, in the countries where cash is popular and counterfeit banknotes are rampant, not only merchants are afraid of receiving counterfeit banknotes as payments, but also consumers are alert when receiving changes. Both sellers and buyers have the need for a tool that can protect them. As mobile payment replaces cash payment, the transition from cash to non-cash meets the society’s need for safe transaction. Also, non-cash transaction makes tax evasion harder, governments are willing to support mobile payment in order to secure their financial input. Industrial standards and clear governmental policies can positively impact merchants’ adoption (Guo and Bouwman, 2016). Although merchants may perceive risks on new technologies and third-party companies, when there is strong social demand for non-cash payment, the social influence may moderate perceived risks’ negative impact on merchants’ intention to adopt mobile payment.

**H7a. Social influence positively impacts merchants’ intention to adopt mobile payment.**

**H7b. Social influence moderates the relationship between perceived risks and merchants’ intention of adoption.**

**Future Work**

The future work that remained to be done is to complete the questionnaire, survey merchants and analyze data in order to test this framework. The survey will focus on small and medium merchants in North America. Because small and medium merchants are active participants in the economy, they are sensitive to environmental factors, and they respond faster to new payment technologies than large companies do. Also, small and medium merchants may be more interested in this study, as they can use this study’s result as guidance to make strategic decision on the adoption of mobile payment.

**Discussion**

Compared with the abundant number of papers that study mobile payment from consumers’ standpoint, the studies from merchants’ perspective are much fewer. Although we located 32 papers that focus on organizations, most of them propose business models or analyze issues. The overlooking of merchants’ adoption leaves a gap in researchers’ knowledge base. Merchants, mobile payment service providers and policymakers need theoretical guidance to better deploy mobile payment and take advantage of it, this study tries to fill the gap and help them to achieve their goals.
REFERENCES


