Global Scientific JOURNALS

GSJ: Volume 9, Issue 6, June 2021, Online: ISSN 2320-9186
www.globalscientificjournal.com

FACTORS AFFECTING THE ADOPTION OF MOBILE PAYMENTS IN THE PHILIPPINES

(A Literature Review)

Brenda G. Deloritos

University of Rizal Systems, Graduate School
(Antipolo Campus)

Abstract

Mobile payments are increasingly being adopted by organizations as a new way of doing business in the 21st century. During the last few years, the use of mobile payments as a new payment channel has resulted in an increase in the volume of literature dedicated to the topic. For this reason, this study aims to cover the importance and use of mobile payments in the current era. It shall also try to identify issues and risks associated with it. The findings will describe the studies taken to identify and further understand the factors affecting the adoption of mobile payments in the Philippines.

Keywords: Mobile payments, adoption, digital payments, e-money, financial inclusion

Introduction

The Philippines was one of the first countries to pioneer digital payments in 2001 with the launch of mobile money. This platform allowed the transfer of funds, the payment of bills, and purchase of goods with the use of mobile phones and reloadable prepaid cards. But its adoption and use has been largely limited. In 2013, digital payments accounted for only one percent of the country's total transaction volume. By 2018, the volume of digital payments has increased to 10 percent corresponding to 20 percent share in the total transaction volume. However, according to the 2018 Financial Inclusion report of Bangko Sentral ng Pilipinas (BSP), 52.8 million adults in the Philippines remain unbanked which is 71% of the total adult population in the country, one of the lowest levels of financial inclusion in South East Asia. Some of the reasons for not having an account are inability to meet the required minimum balance set by the banks, perceived lack of need, and absence of documentary requirements. This low banking penetration drove the e-money in the Philippines (Hasnain, GMSA, 2016).

Mobile payment is defined as payments for goods, services, and bills with a mobile device (like mobile phones, smartphones) using wireless and other communication technologies (Dahlberg et al., 2008, p. 165). It is a process that involves three parties: the consumers, merchants, and the banks.

Smartphones have evolved into a powerful and vital commercial tool for mobile product and service delivery. The rapid expansion of mobile location-based service is aided by the widespread use of smart mobile devices. Another aspect influencing this expansion is mobile payments. Leading players in the mobile market provide a variety of solutions facilitating mobile payments. Given the widespread use of mobile devices and users' needs for convenient and timely payment, mobile payment is expected to become a crucial channel for conducting financial transactions. Once realized, it could become a further revenue stream to service providers and investors.

Moreover, the sudden onset of the COVID-19 global pandemic has paved the way for Mobile payment applications. Access to basic bank accounts and financial services have been a challenge because of strict implementation of health protocols. This situation opened the doors to innovative financial technology firms like G-Cash, PayMaya, and GrabPay A data research team Statista is predicting that the Philippine mobile payments market is expected to surpass $15 billion by the end of 2021 and grow by more than 16 percent to $28 billion by 2024. These initiatives

will support BSP's goal to increase the share of digital payments to 50 percent of all retail transactions and expand financial inclusion to 70 percent of Filipino adults by 2023.

Literature Review

The research area of mobile payments in general is still in its earliest stage compared to other related fields like mobile commerce, internet banking or mobile banking (Oliveira et al. 2016). However, there is a significant increase in the number of studies in recent years which shows the value and relevance of mobile payments in our consumers today and how it helps in the conduct of businesses.

I. Types of Mobile Payment Systems

Mobile browser-based payments. Like desktop-based eCommerce shopping. Mobile browser-based payments allow users to make card-not-present (CNP) purchases with either a credit, debit, or gift card, or even banking information (ACH) using a smartphone. Customers can visit a website with their mobile devices, add the products and services to a shopping cart, and enter payment details into the website's checkout form to complete the purchase – all on their phone or tablet.

In-app mobile payments. This type of payment is similar to mobile browser-based payment, however, instead of navigating to a website, you can open up the app if that store or business has one. Users benefit from a range of in-app mobile stores and businesses that allow them to buy products and services within closed ecosystems. Simply register your credit card, debit, or ACH information once, and then you can purchase goods, download a book or song, buy a coffee, or pay a bill with a few clicks.

Mobile or wireless credit card readers. Wireless credit card terminals do not require a direct hookup to a phone line, but instead, work off Wi-Fi to accept credit cards at various locations. A credit card reader is not necessary for accepting mobile payments. Businesses can use a smartphone or tablet to log into a virtual terminal application and manually enter credit card or ACH information that way. Any of these mobile payment solutions enable retailers to process transactions anywhere – including at off-site events like fundraisers, trade shows, and conferences,

Contactless mobile payments, or mobile wallets. Bluetooth and similar technologies have made it possible for shoppers and businesses to authorize transactions without having to physically swipe or dip any credit card or debit cards at all. In order to complete a purchase, simply tap your mobile device across a contactless reader that wirelessly captures the relevant payment information. Mobile wallets are not limited to in-store payments. Customers may checkout online using a mobile wallet wherever the preferred app is accepted.

II. Usefulness and Convenience of Mobile Payments

E-Commerce enterprises use paperless monetary transactions, which has revolutionized business processing by reducing paperwork, transaction costs, and labor costs. Being user-friendly

and less time consuming than manual processing, e-commerce helps business organizations expand their market reach.

A big trend of digital financial inclusion, Bill Gates predicted that "by 2030, 2 billion people who do not have a bank account today would be storing money and making payments using their phones." This report adds to the body of knowledge on digital financial inclusion in Southeast Asia by surveying the existing state of such inclusion.

One of the most important features that distinguish mobile payment from traditional payment is mobility (Dastan et al, 2016). It is the ability of an individual to make payments independent of time and place. People are unable to purchase their needs when they are at work, at home or even when travelling. Now, they can make all these transactions through mobile payments.

Based on The Nerve (2019) survey, 27.4 % used mobile payments for online shopping, 23.4 % to pay their bills, 18.5 % to transfer/receive money to/from another person, 13.1% used mobile payment in buying telco load, 12.1% used mobile payment to pay in stores or restaurants., and 5.4% used mobile payment for other reasons.

Mobile Payments in the Philippines. In the Philippines, sacrifice is required to offer a better life for families. This is the reason why there are an estimated 2.4 million Overseas Filipino Workers who subsidize the country's economic growth through remittances which contributed to the development of e-money in the Philippines. However, there remains a lack of financial inclusion with 52.8 million adults with no account with any financial institutions due to lack of funds. This may mean that the majority of Filipinos are not capable of meeting the required minimum balance set by financial institutions (Lopez, 2018). As a result of this and with the introduction of the internet, a method of transferring money using cashless payments became a cutting-edge innovation.

E-payments in the Philippines mostly do not require a bank account and can be easily accessible using mobile phones. Systems such as GrabPay, G-Cash and PayMaya make it easier for Filipinos to use digital payment platforms. Eliminating the requirement of bank accounts, e-payment systems have a strong potential in a low bank country like the Philippines. Previous studies on e-payment mainly used the Technology Acceptance Model (TAM) as a framework as it is still considered the most solid and reliable model related to the behavior of technology acceptance. Platforms such as GCash and PayMaya became an option for Filipinos to do digital financial transactions without physical cash and credit cards.

Mobile Payments in Online Shopping. Internet marketing differs from conventional marketing channels in that it encourages one-on-one connection between the seller and the end user, as well as 24-hour customer care. The fastest expanding component of online commerce nowadays is business internet marketing. The degree of engagement between the consumer and the seller is the main distinction between traditional and online selling. Nevertheless, currently, online payment is a huge hit, as all merchants and businesses are moving to online buying, which is more convenient for both customers and businesses. The growth of online shopping platforms like Shopee, Lazada and Zalora are testament on how online shopping has been transformed. Some of the most significant advantages of online buying are convenience in paying using mobile phones and it is accessible anywhere and anytime. Gene Signorini, Vice-president of Mobile Insights, states that "it is easier for small businesses to adopt mobile payment programs because they don't

have a large infrastructure to work through, so small businesses can jump right in (Gregory, 2012)."

Mobile Payments as a convenient way in Paying Bills. Settling our household bills on time is important in keeping our house running smoothly. After all, we rely on electricity, water, and the internet for most of our household activities. To avoid the hassle of paying late penalty charges and service disconnection, we simply use our mobile phones to pay for our utility bills. One does not need to leave their house or their work and even fall in line in the Bank or Bayad Centers to pay, they just need to register with their service provider, while others simply ask you to fill in specific reference numbers and the amount to be paid. They may also opt to enroll for an automatic payment, so you never have to worry about missing your utility bills again.

III. Challenges towards the use Mobile Payments

In a survey conducted by The Nerve in February 2019, 20.1 % think that mobile payments are not secure, 17.7 % are afraid that someone might steal their personal details from their phone, 17.6% do not see the need to use mobile payment, 10.9% do not know how mobile payment application work, 10.6% choose other reason, 9.1% do not trust the companies behind the mobile applications, 8.2% are not aware of the retailers that accept mobile payments, and 5.9% do not have a mobile data (The Nerve, 2019).

Security and Trust. While we identify several benefits of mobile payment, Huh et al. (2016) found that the biggest concern of mobile payment users is the security risk. Most mobile payments involve contactless transactions which makes security an important and vital concern for users. There is a common perception that mobile payments are not safe and not secured. When one is paying with a credit card through a mobile payment facility, the Card Security Code (CSC) is being asked and needs to be inputted to complete the transaction. The CSC is a 3-digit number found at the bank of your credit card which serves as a security feature when transacting virtually. This requirement poses concern to the users and they find it too risky.

Others, like Creative Strategies Incorporation (CSI), studied the behaviors of mobile payment users where they have identified trust as the primary barrier for non-adopters of mobile payment. Biometric technology plus conventional digital signatures such as personal identification numbers (PINs) are proposed to be used to provide an additional layer of authentication and protection to help build trust. Recently, local banks in the Philippines added an additional layer in verifying the transaction by encoding the One-Time Pin (OTP) sent via SMS (short message service) to the registered mobile number. Wang et al (2016), however, promotes the creation of a regulator for mobile wallet service. Regulators should be able to analyze security threats such as data breaches, Secure Sockets Layer (SSL)/ Transport Layer Security (TLS) vulnerabilities, malware detection, and fraud detection and prevention.

Several reasons have been identified why trust is harder to build with mobile payments. The development of mobile payments is still in its early stages and consumers have less experience in using the mobile payment applications. The changed environment makes consumers worry about the leaking of their personal sensitive information and the continuing technology enhancement warrants continuous attention and time from consumers.

User adoption is low. Many people, especially in the Philippines, are still comfortable using cash and credit cards when purchasing. Based on The Nerve (2019) survey, 51.3% still preferred to pay in cash, while only 7.1% are into mobile payments as their preferred payment method.

Unknowledgeable. An individual's inability to use technology effectively can be associated with lack of digital literacy, skills, and knowledge. Even if the Philippines is considered the text capital of the world, many Filipinos do not have sufficient digital literacy. The lack of technical abilities to navigate an application makes them an inactive user of digital initiatives. In a GSMA (2016) research, 27% of Filipinos felt that lack of technical abilities was holding them back in using mobile data.

Poor Internet Connection. For developing countries like the Philippines, internet connection speeds are slow, unreliable, network reach is minimal, and the infrastructure is weak. This is one painful reality that Filipinos must face.

In a speed test conducted using Ookla, the Philippines ranks at the lower part of the world index relative to the average broadband and mobile speeds. Philippines was in the 84th spot out of 134 with an average of 29.12 Mbps average mobile speed and 80th out of 176 in terms of broadband speed. The table below shows Philippine's Internet Speed versus those of other countries.

Country	Average Mobile Speed	Average Broadband Speed
South Korea	241.58 Mbps	186.06 Mbps
China	172.96 Mbps	149.40 Mbps
Australia	118.24 Mbps	77.8 Mbps
Singapore	79.25 Mbps	245.50 Mbps
Hong Kong	76.98 Mbps	240.83 Mbps
Iraq	35.47 Mbps	29.88 Mbps
Philippines	29.12 Mbps	49.31 Mbps
Sri Lanka	17.75 Mbps	30.44 Mbps
India	12.82 Mbps	55.76 Mbps
Bangladesh	11.32 Mbps	36.02 Mbps

It is also a fact that internet in the Philippines is expensive (please see table below) which makes a lot of Filipinos feel deprived. But what are the possible reasons for the slow and expensive internet connection in the Philippines? One, Philippines is an Archipelago with 7,641 islands. This makes it hard to build infrastructure like construction of cell towers to different parts of the country. It will take time to build such infrastructures. Second, building Cell Towers is expensive. Logistics in the construction of cell towers like transport of materials and labors are some of the major challenges. There are also concerns in the application of the construction of cell towers. The process for the permit applications for cell towers is costly and time-consuming where one needs to secure a close to 30 permits and eight to ten months to build a single tower. Apparently, much of the burden is being carried out by telecommunications company. Third, there are not many players in the industry. Lack of competition contributes to the poor internet service in the Philippines. PLDT/SMART and Globe Telecom are the only two giants in the industry. There are some small and mid-sized companies, but they do not provide the same comprehensive products, services, and reach with that of PLDT and Globe. Recently, a new

telco company, which is DITO, has been granted a franchise which makes it the third telco player in the Philippines. Albeit being at its infancy stage, a lot is putting their faith on it that it will disrupt the long-standing duopoly in the Philippines.

Table showing how Philippines fares when it comes to the price of internet

Country	Price per Month (with 60 Mbps Average Speed)	
United Arab Emirates	USD 98.45	Php 4,704
United States	USD 65.81	Php 3,145
New Zealand	USD 59.40	Php 2,838
Netherlands	USD 48.08	Php 2,297
Philippines	USD 47.15	Php 2,253
United Kingdom	USD 43.97	Php 2,101
Japan	USD 43.15	Php 2,061
Germany	USD 39.55	Php 1,889
Sweden	USD 35.74	Php 1,708
Indonesia	USD 31.70	Php 1,515

Synthesis

The rapid growth of mobile payment has paved the way for Financial Inclusion in the Philippines, most especially during the onset of the COVID-19 pandemic. This is a great opportunity for Filipinos to engage in digital payments notwithstanding the fact that millions of Filipinos remain unbanked. Several literatures have shown and explained the benefits and convenience of using mobile payments. Despite this, the usage of mobile payment in the Philippines remains low. Different studies have shown several aspects of the possible reason for the low adoption of mobile payments. But what are the specific factors that greatly affect the adoption of mobile payments in the Philippines? This is the problem that this study wishes to address and hopefully could help in identifying possible solutions to address this gap.

References

Adrian, M. (2018 January 4). Is the Philippines ready to go cashless? Retrieved on 2019 May 6 from https://www.imoney.ph/articles/cashless-payment-philippines/.

Bahia, K., & Muthiora, B. (2019, February). The mobile money regulatory index. GSMA: https://www.gsma.com/mobilefordevelopment/wp-content/uploads/2019/03/The-Mobile-Money-Regulatory-Index-1.pdf

Bangko Sentral ng Pilipinas, Center for Learning and Inclusion Advocacy. (2018). Financial inclusion in the Philippines as of third quarter 2018, http://www.bsp.gov.ph/downloads/Publications/2018/FIDashboard_3Q2018.pdf

Bangko Sentral ng Pilipinas, Core Information Technology Specialist Group. (n.d.). E-money and e-banking in the Philippines. http://siteresources.worldbank.org/FINANCIALSECTOR/Resources/282044-1302620831996Additional_Information_Phillippines.pdf

Bangko Sentral ng Pilipinas, Inclusive Finance Advocacy Office. (2017). Financial inclusion survey: Moving towards digital financial inclusion. http://www.bsp.gov.ph/downloads/Publications/2017/2017FISToplineReport.pdf

Bangko Sentral ng Pilipinas. (2009, March 9). Circular 649 http://www.bsp.gov.ph/downloads/Regulations/attachments/2009/c649.pdf

Carr, M. (2007). Mobile payment systems and services: an introduction. In *Mobile Payment Forum* (Vol. 1, p. 12).

Chen, L. Y., & Wu, W. N. (2017). An exploration of the factors affecting users' satisfaction with mobile payments. *International Journal of Computer Science & Information Technology (IJCSIT)*, *9*(3), 97-105.

Chen, R., Yamaka, W., & Osathanunkul, R. (2019, October). Determinants of non-cash payments in Asian countries. In *Journal of Physics: Conference Series* (Vol. 1324, No. 1, p. 012103). IOP Publishing.

Dahlberg, T., Guo, J. & Ondrus, J. (2015). A critical review of mobile payment research. Electronic Commerce Research and Applications, 14 (5), 265-284.

Daştan, İ., & Gürler, C. (2016). Factors affecting the adoption of mobile payment systems: An empirical analysis. *EMAJ: Emerging Markets Journal*, *6*(1), 17-24.

Dumlao, D. C. (2013, February 14). Filipinos more savvy about finances, study shows. From Inquirer: https://business.inquirer.net/105779/filipinos-financial-quotient-at-record-high-online-poll-shows

Fan, K., Li, H., Jiang, W., Xiao, C., & Yang, Y. (2018). Secure authentication protocol for mobile payment. *Tsinghua Science and Technology*, *23*(5), 610-620.

Gibney, C., Trites, S., Ufoegbune, N., & Lévesque, B. (2016). *International review: Mobile payments and consumer protection*. Research Division, Financial Consumer Agency of Canada.

Go, A. M. D. (2018). Determinants of Mobile Money Adoption: Evidence from Urban Philippines.

Gregory, J. G. (2012). "5 Major Benefits of Mobile Payments." Read more: https://www.americanexpress.com/us/small-business/openforum/articles/5-major-benefits-of-mobilepayments

Gregson, M. L. (2016). "Less is NOT More: The Need to Regulate Apple Pay." North Carolina Banking Institute, Vol. 20, Issue 1, Article 16, 2016.

GSMA. (2016, June). Consumer Barriers to Mobile Internet Adoption in Asia. https://www.gsma.com/mobilefordevelopment/wp-content/uploads/2016/06/Consumer-Barriers-to-Mobile-Internet-Adoption-in-Asia.pdf

GSMA. (2018). Mobile money metrics. Retrieved April 30, 2019, from GSMA: https://www.gsma.com/mobilemoneymetrics/#regulatory-index

GSMA. (2018). State of the industry report on mobile money. Retrieved April 28, 2019, from GSMA: https://www.gsma.com/r/wp-content/uploads/2019/02/2018-State-of-the-Industry-Report-on-Mobile-Money-1.pdf

Gumba, B. (2019). Socioeconomic Factors Influencing Participation in Mobile Money by Poor Fishing Families of a Municipality in the Philippines. *Southeast Asian Journal of Science and Technology*, *4*(1), 101-107.

Huh, J. H; Verma, S; Rayala, S. S; Bobba, R; Beznosov, K; & Kim, H. (2016). "I Don't Use Apple Pay Because It's Less Secure - Perception of Security and Usability in Mobile Tap-and-Pay." USEC '16, 21 February 2016, San Diego, CA, USA.

Llanto, G. M., Rosellon, M. A. D., Ortiz, M., & Kristina, P. (2018). E-finance in the Philippines: Status and prospects for digital financial inclusion.

Lopez, M. T. (2018, July 12). BSP check shows most Filipinos unbanked. From BusinessWorld: https://www.bworldonline.com/bsp-check-shows-most-filipinos-unbanked.

Lowry, C. (2016). "What's in Your Mobile Wallet? An Analysis of Trends in Mobile Payments and Regulation." Issue 2, Federal Communications Law Journal Vol. 68

Masihuddin, M., Khan, B. U. I., Mattoo, M. M. U. I., & Olanrewaju, R. F. (2017). A survey on e-payment systems: elements, adoption, architecture, challenges, and security concepts. *Indian Journal of Science and Technology*, *10*(20), 1-19.

Mondego, D., & Gide, E. (2018). The effect of trust on mobile payment adoption: A comprehensive review of literature. *International Journal of Arts & Sciences*, *11*(1), 375-389.

Nair, V. (2016). Eschewing Cash: The Challenges of Cashless Transactions in the Philippines. *Journal of Southeast Asian Economies, 33*(3), 387-397. http://www.jstor.org/stable/44132412

Oliveira, T., Thomas, M., Baptista, G., & Campos, F. (2016). Full length article: Mobile payment: Understanding the determinants of customer adoption and intention to recommend the technology. *Computers in Human Behavior*, 61, 404-414.

Okereke, D., & Hedderman, M. (2017). Factors Driving Mobile Payment Adoption: Benefits Challenges & Opportunities.

Operana, B. (2016). Financial Inclusion and Financial Stability in the Philippines. *Graduate School of Public Policy (GraSPP).*

Pinchot, J. L., Mishra, S., Paullet, K. L., & Kohun, F. G. (2016). Exploring Barriers to Adoption of Mobile Payments for University Students: Lack of Awareness, Lack of Availability, and Perceived Security Y RISKS. *Issues in Information Systems*, *17*(3).

Schellhase, J., & Garcia, A. (2018). FinTech in the Philippines: Assessing the State of Play. *Singapore: Milken Institute*.

Shaikh, A. A., & Karjaluoto, H. (2015). Mobile banking adoption: A literature review. *Telematics and informatics*, *32*(1), 129-142.

Speedtest. (2019, March). Speedtest global index, from Speedtest: https://www.speedtest.net/global-index

Tansakul, P., Halgamuge, M. N., & Syed, A. (2019). Distinguish significant adoption factors that influence users' behavioral expectation to utilize mobile payment. In Y. Akgul (Ed.), *Advances in Marketing, Customer Relationship Management, and E-Services* (pp. 148–168). IGI Global.

TheNerve. (2019, April 2). Coins.ph, GCash, GrabPay, PayMaya: Who's leading the mobile payments war in PH?, from Rappler: https://www.rappler.com/brandrap/data-stories/225782-mobile-payments-leading-philippines.

TheNerve. (2019, March 18). Why the Philippines has been slow to adopt e-wallets, from Rappler: https://www.rappler.com/brandrap/data-stories/225452-reasons-philippines-slow-adopt-e-wallet.

Trütsch, T. (2016, July 19). The impact of mobile payment on payment choice. financial markets and portfolio management, 30(3), 299–336. doi: 10.1007/s11408-016-0272-x.

Wang, Y; Hahn, C; Sutrave, K. (2016). "Mobile Payment Security, Threats, and Challenges." MobiSecServ, 2016, 2nd Int'l Conference Feb, 2016, IEEE.