Presented at the DLSU Research Congress 2017
De La Salle University, Manila, Philippines
June 20 to 22, 2017

Challenges and Opportunities of Electronic Payment Systems in the Philippines

Michelle Renee D. Ching
Doctor of Information Technology (DIT), College of Computer Studies, De La Salle University
michelle.ching@dlsu.edu.ph

Abstract: In the Philippines, to be able to provide a better life to families, sacrifice is essential. This is the reason we have an estimated 2.4 million Overseas Filipino Workers (OFW), which contributes to the country's economic growth through remittances. However, there is financial inclusion where only 42% Filipinos have access to banks, which triggered the need to have a more effective and efficient way of transmitting money. This spawned the cutting-edge innovation of cashless payments. Because of the advent of Internet, it has conceived the business service of e-Commerce. However, even with a strong top-down support from the Philippine government, Philippines is still dependent with cash and cheque mode of payments. This research study explores the factors that influences the adoption of the currently available electronic payment systems in terms of general, privacy, security, and trust perceptions, which were obtained from existing literatures on e-Commerce and transformed to fit the study. With the datasets collected from an online survey from 33 respondents, linear regression was considered as the statistical technique that will help emerge the factors influencing the use and/or non-use of the electronic payment systems. In conclusion, doing online transaction is equivalent to convenience where the current technologies we have contributes and the diverse payment schemes encourages to do online transactions according to the individual preferences based on the perceptions. Furthermore, daily work hours and gender contributes to the adoption of electronic payment systems as well. Through this research study, it affirms the government initiatives that it is improving the adoption of cashless payments. Additionally, it will help businesses target the preferences of their customers at the same time increase their profit.

Keywords: Electronic payment systems; e-Commerce; m-Commerce; e-Commerce Security

1. INTRODUCTION

1.1. Background of the Study

Philippines is an archipelago that is composed of 7,641 islands (Santos, 2016). It is also known for having a lot of overseas workers, which was estimated to 2.4 million based on the Philippine Statistics Authority's 2015 survey (Bersales, 2016). As per Torres (2015), Philippines received the highest amount of remittances after India and China (Nair, 2016). Additionally, Banko Sentral ng Pilipinas (BSP) reported that Philippines received US$ 25.8 billion cash remittances, which comprised

10% of the total Gross Domestic Product (GDP) of the Philippines in 2016 (Nair, 2016). As reported by the World Bank in 2013, about 42% of Filipinos do not have bank accounts (Nair, 2016). For these reason, it had created a division among rural and urban provision of financial services (Nair, 2016). Due to the poor accessibility of Filipinos in rural areas denotes that there is a need to new means of sending money to be able for the families of the overseas workers to support their basic needs (Nair, 2016). And because of this, it has spawned a cutting-edge innovation known as the cashless payments. This innovation can help eliminate the financial barriers now that money transfers will be more accessible (Nair, 2016).

Furthermore, the cashless transactions in the Philippines has been increasing because of the growing popularity of online shopping among young, urban Filipinos (Nair, 2016). For this reason, BSP had been very involved in the cashless transactions growth, where they worked with both private sector and government agencies for evolving the cashless solutions (Nair, 2016). And in 2015, the government announced its initiative on making the Philippines a *cash lite* society in 20-year timeframe, which includes the National Strategy for Financial Inclusion that focuses on the importance of technology to reach out to those who are financially excluded (Banko Sentral ng Pilipinas, 2012; Nair, 2016). However, even with a strong top-down support from BSP, the Philippines is still dependent on cash and cheque mode of payments (Nair, 2016).

1.2. Overview of Related Literatures

As defined, e-commerce is a business transaction conducted over the Internet ("E-commerce | Define E-commerce at Dictionary.com," n.d.). As observed by Yu, His, and Kuo (2002), the onset of e-commerce was due to the advent of Internet, which according to Huang and Chen (2002) and Baddeley (2004), is continuously increasing (Chellapalli & Srinivas Kumar, 2016). It has become important in two interrelated domains, which are Business-to-Business (B2B) and Business-to-Consumer (B2C) that influences the customers in creation and customization of the products and methods on how the products and/or services are delivered (Chellapalli & Srinivas Kumar, 2016; Rachna & Singh, 2013). Moreover, according to Vulkan (2003), it offers its customers a convenient and efficient shopping, banking transactions, and personal finance management experience, where payments are done electronically, which in turn called electronic payments (Chellapalli & Srinivas Kumar, 2016).

As defined by Kalakota and Whinston (1997) and Humphery, Pulley, and Vesala (1996), electronic payment is the financial exchange that happens in an online environment, where the payments are initiated, processed, and received, which is fundamental in e-commerce (Chellapalli & Srinivas Kumar, 2016; Rachna & Singh, 2013). This is one of e-commerce's most critical aspects and as per Koc (2002), must be digitally secured (Chellapalli & Srinivas Kumar, 2016). Furthermore, what constitutes electronic payment systems may vary depending on which country it is being used (Chelawat & Trivedi, 2014). This is because of various regulatory regimes and innovative instruments that is a substitute for cash, which triggered the increase in the role of non-banks and non-cash payments (Chelawat & Trivedi, 2014).

Since electronic payments are now prevalent in many countries today, there are various companies involved on setting up electronic or digital cashless payments support. As per the European Central (2014), there is a 36.39% online transactions done through card payments mode and 2.32% through e-Money based on the Eurozone 2012 report (Liebana-Cabanillas, Muñoz-Leiva, & Sanchez-Fernandez, 2015). According to the B2C Electronic Commerce of the National Observatory for Telecommunications and the Information Society, the top three payment transactions are credit card (64.6%), cash on delivery (COD) (13.6%), and bank transfer (9.2%) (Liebana-Cabanillas et al., 2015). According to Wonglimpiyarat's (2007) research, smart card technology payment systems in USA, UK and several other European countries, Australia, Korea, Hong Kong, and Singapore has not yet become revolutionary due to the organizations are more competitive rather than collaborative. Furthermore, mobile phones paving its way would become an another means of payment system (Mathew, Magnier-Watanabe, Pratheeba, & Balakrishnan, 2014).

One of these that is progressing is the mobile payment, which later on will become widespread (Daştan & Gürler, 2016; Liebana-Cabanillas et al., 2015; Mathew et al., 2014). As defined, mobile payment is a kind of electronic payment system that has more mobility, which involving electronic devices connected to a mobile network where individual or business transactions

are completed successfully (Daştan & Gürler, 2016; Liebana-Cabanillas et al., 2015). Moreover, as per Karnouskos and Fokus (2004), it is a payment system done with the use of mobile devices to initiate, activate, and/or confirm payment (Daştan & Gürler, 2016). According to Liebana-Cabanillas, Muñoz-Leiva, & Sanchez-Fernandez (2015), through this new mode of payment in doing online transactions, it gives significant advantages to companies and vendors alike by increased in versatility, faster transactions, greater convenience, and lower costs among others (Liebana-Cabanillas et al., 2015).

Examples of payment systems being offered by well-known organizations are Samsung Pay, PayPal, Apple Pay, and Google's Softcard and Android Pay (Daştan & Gürler, 2016).

Because of the advent of online transactions, privacy and security become major concerns of users, especially on payment security (Niranjanamurthy & Chahar, 2013). This is because users are required to disclose sensitive information to the vendor, which puts them at great risk (Niranjanamurthy & Chahar, 2013).

According to the research study of Rachna and Singh (2013), the issues and challenges in electronic payment system are (1) *Lack of Usability*, where the online forms require a lot of information from users and using of complex website interface that make it difficult for the users to adopt; (2) *Lack of Security*, when e-commerce becomes a target for acquiring personal sensitive information and/or stealing of money due to users having to provide sensitive information online, such as credit card details, not knowing if its transmission is secured; (3) *Lack of Trust*, which is due to fraud, misuse, and low reliability; (4) *Lack of Awareness*, when users avoid online mode of payments and still prefer the traditional payment transactions; (5) *Issues with e-Cash*, which is not widely used due to limitations of the user and the vendor should share the same bank that offers e-Cash; (6) *Users Perception Regarding Acceptance of Electronic Payment Systems*, which could be because of the neglect in the needs of both the users and vendors; (7) *Online Payments are not Feasible in Rural Areas*, because people living in the rural areas are mostly not literate and not educated on how to use computers, which causes them to become unaware of technological innovations; and (8) *Highly Expensive and Time Consuming*, this is for the vendor side, where setting up an online payment systems would be costly, which include set up cost, machine cost, and management cost among others than physical mode of payment (Rachna & Singh, 2013).

In the Philippines, even with a strong top-down support from BSP, it is still dependent on cash and cheque mode of payments (Nair, 2016). According to Better Than Cash Alliance (BTCA) (2015), out of the 2.5 billion (US$ 74 million) payments made per month, only 1% are digital (Nair, 2016). As part of the initiatives of BSP to further improve the electronic payment systems in the Philippines, they have developed the National Strategy for Financial Inclusion that focuses on the importance of technology to reach out to those who are financially excluded (Nair, 2016). One of the reasons why this is the case is that there is poor banking access for the reason that it is predominantly confined in urban areas, but because of the online transactions are done through the use of financial cards, there are now fewer background checks when availing of debit cards and/or credit cards, which became widely used (Nair, 2016). Furthermore, BSP had mandated banks to migrate their stripe payment to Europay, MasterCard, and Visa (EMV) chip-enabled cards until 2017, which will help increase customer security in using these financial cards through reducing card fraud (Nair, 2016). Moreover, the National Retail Payment System (NRPS) aims to promote interoperability on electronic payment transactions, enhance transparency and accountability in financial transactions and allow provision of broader range of access in financial services that could fill in the gap in the Philippine's predicament on cashless transactions, which BSP hopes to help boost the electronic payments done per month from 1% to 20%, as reported by Rappler in 2015 (Nair, 2016).

1.3. Objectives, Scope, and Limitation of the Study

The objective of this study is to explore the challenges and opportunities pertaining to the adoption of electronic payment systems in the Philippines that affect Filipinos on using the various existing electronic payment systems. The specific objectives are (1) To examine the factors that influence the electronic payment systems adoption of the Filipinos; (2) To uncover the relation between these factors; and (3) To provide recommendations for improvement of the electronic payment systems in the Philippines.

Furthermore, this study employed a quantitative research approach, wherein a survey had been obtained from literatures on e-Commerce and transformed to fit the study. This survey was conducted through Google Forms from 08 March 2017 until 20 March 2017 as part of a class requirement. There is a total of 36 respondents from different demographics but they should have experiences on doing online transactions, which resulted to 33 and is reasonably enough to make conclusion (Field, 2009; Hill, 1998).

2. METHODOLOGY

As mentioned from the Objectives, Scope, and Limitation of the Study, the survey was conducted through Google Forms from 08 March 2017 until 20 March 2017. The sample size was 33 coming from different demographics with experiences on doing online transactions. As per Field (2009), if the sample size is more than 30, the sampling distribution will be normal regardless of the shape of the population from which it was taken, which is reasonably enough to make conclusion (Field, 2009; Hill, 1998).

The questionnaire is composed of three (3) main sections which are (1) Profile; (2) Connectivity; and (3) Electronic Payments Perception. The profile section is comprised of questions pertaining to the respondent's demographic, such as Gender, Age, Civil Status, Source of Income, and Daily Work Hours. Gender, civil status, and source of income were coded as dummy variables. The income was made a categorical variable to avoid the unreliability of data if it was made a continuous variable. Age and daily work hours are both continuous variables. Daily work hours was included because it will connote that it might affect the availability of the respondents to do their transactions physically or online.

Additionally, the connectivity section includes the means the users connect online, kind of online transactions that the respondents do, and the payment methods that they use. These are categorical variables with more than two (2) categories.

Furthermore, the last main section, which is the electronic payments perception, was employed using measurement of scales acquired from Online Shopping Attitudes Survey ("Online Shopping Attitudes Survey Template | SurveyMonkey," n.d.) and Chellapa (2002) but revised to make it more appropriate for this research study (Chellappa, 2002). This main section is further divided into subsections on factors that might affect the use and/or non-use of the electronic payment systems, which are (1) General; (2) Privacy; (3) Security; and (4) Trust. Each of the subsections contains three (3) questions employing five (5) Likert scales. For those negative questions, the scores were reversed.

Moreover, the conceptual framework applied for this research study is shown in Fig. 1. Statistical technique used was linear regression, to help emerge which variables have causality to each other. Furthermore, there are moderating variables that will help uncover if the Devices Used to Transact Online and Payment Schemes used to transact online will have influence on the strength of the relationship of the Kind of Online Transaction with the Electronic Payments Perception.

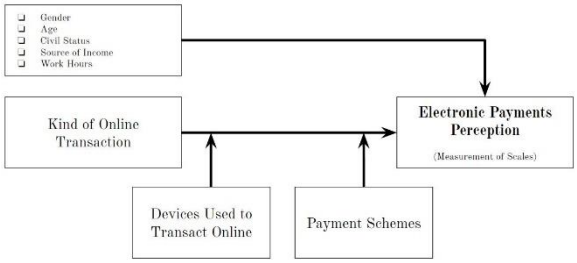

Fig. 1. Conceptual Framework

With the advent of Internet, businesses are making their presence on the web (Ellis, 2014). Because of this, even they have a physical store, they tend to be available online as well to cater the busy schedule of people that cannot go physically to their store. Also, regardless of their source of income, they would transact online. Thus, the researcher proposes that:

H_1: Daily Work Hours contributes significantly related to Electronic Payments Perception score.

H_2: Source of Income contributes significantly related to Electronic Payments Perception score.

Because of this, all kinds of products and/or services can now be availed online that caters to both the needs of males and females regardless of their civil status. Hence, the researcher proposes that:

H_3: Gender contributes significantly related to Electronic Payments Perception score.

H_4: Civil Status contributes significantly related to Electronic Payments Perception score.

However, there could be hindrances in adopting Electronic Payment Systems depending on

the age of the online users, where they may be more comfortable in physically transacting rather than virtually. Therefore, the researcher proposes that:

H_5: Age contributes significantly related to Electronic Payments Perception score.

Furthermore, the awareness of the online users on the various kinds of online transaction can affect their perception on the electronic payments perception. It can be strongly influenced by the kind of devices they use to do online transactions and their knowledge on the various kinds of payment schemes. Thus, the researcher proposes that:

H_6: Kind of Online Transaction is significantly influenced by the Devices Used to Transact Online to Electronic Payments Perception score.

H_7: Kind of Online Transaction is significantly influenced by the Payment Schemes to Electronic Payments Perception score.

These hypotheses were tested based on the gathered data from the online survey with the use of Stata 11.

3. DISCUSSION OF THE RESULTS

As shown on the table below, there is a total of 33 respondents of the online survey. The youngest is 18 years old while the oldest is 51 years old. The minimum Daily Work Hours of the respondents is three (3) hours while the maximum is 24 hours. The average General Electronic Payments Perception score is (M = 9.55), the average Privacy Electronic Payments Perception score is (M = 9.39), the average Security Electronic Payments Perception score is (M = 9.39), and the average Trust Electronic Payments Perception score is (M = 10.70).

Table 1
Descriptive Statistics

	N	Mean	Min	Max
Age	33		18	51
DWH	33		3	24
General	33	9.55		
Privacy	33	9.39		
Security	33	9.39		
Trust	33	10.70		

Furthermore, the continuous variables were tested for normality through swilk and sktest and transformed those that are not normal through Log. Moreover, below are the summary of the linear regression analysis conducted.

Table 2
Regression of the Variables with GeneralEPP DV

GeneralEPP	Coefficient	P > |t|
Age	0.06	0.14
Log DWH	-1.17	0.24
Gender	-1.85	0.05
Civil Status	0.18	0.84
Source of Income	-0.28	0.76
Devices Used to Connect Online Moderating Variable		
FT – Both	-5.56	0.02
Shopping – Mobile	-2.97	0.14
Shopping – Both	-0.74	0.70
FT & Shopping – Both	1.55	0.40
FT & BP – Both	-0.90	0.43
BP & Shop – Computer	-5.67	0.01
BP & Shop – Both	-1.46	0.32
Payment Schemes Moderating Variable		
Shopping – EW	-0.52	0.77
FT & Shopping – EW	-2.30	0.29
FT & Shopping – BC	-3.75	0.04
BP & Shop – PG	-0.65	0.63
BP & Shop – BC	-0.49	0.72
BP & Shop – EW & PG	-0.13	0.94
All – BC	0.42	0.78
All – EW & BC	0.32	0.87
All – PG & BC	3.78	0.04

Table 3
Regression of the Variables with PrivacyEPP DV

PrivacyEPP	Coefficient	P > |t|
Age	-0.08	0.22
Log DWH	-2.09	0.21
Gender	-0.92	0.53
Civil Status	1.24	0.42
Source of Income	2.99	0.07
Devices Used to Connect Online Moderating Variable		
FT – Both	-0.27	0.94
Shopping – Mobile	4.73	0.16
Shopping – Both	2.67	0.40
FT & Shopping – Both	3.89	0.21
FT & BP – Both	-0.80	0.67
BP & Shop – Computer	-4.64	0.16
BP & Shop – Both	-1.55	0.52
Payment Schemes Moderating Variable		
Shopping – EW	-1.73	0.57
FT & Shopping – EW	-4.71	0.20
FT & Shopping – BC	-4.20	0.14
BP & Shop – PG	0.59	0.79
BP & Shop – BC	1.31	0.56
BP & Shop – EW & PG	2.13	0.43

All – BC	-1.10	0.66
All – EW & BC	-0.02	0.99
All – PG & BC	-2.97	0.29

Table 4
Regression of the Variables with SecurityEPP DV

SecurityEPP	Coefficient	P > |t|
Age	-0.05	0.44
Log DWH	-4.37	0.01
Gender	-2.91	0.05
Civil Status	0.74	0.59
Source of Income	4.15	0.01
Devices Used to Connect Online Moderating Variable		
FT – Both	0.42	0.89
Shopping – Mobile	6.72	0.04
Shopping – Both	4.61	0.13
FT & Shopping – Both	-1.64	0.55
FT & BP – Both	-2.61	0.15
BP & Shop – Computer	-5.01	0.10
BP & Shop – Both	-2.64	0.24
Payment Schemes Moderating Variable		
Shopping – EW	-3.04	0.28
FT & Shopping – EW	-1.57	0.63
FT & Shopping – BC	-0.69	0.78
BP & Shop – PG	1.65	0.43
BP & Shop – BC	-0.68	0.74
BP & Shop – EW & PG	0.01	1.00
All – BC	-1.37	0.55
All – EW & BC	-2.93	0.35
All – PG & BC	-3.09	0.23

Table 5
Regression of the Variables with TrustEPP DV

TrustEPP	Coefficient	P > |t|
Age	0.00	0.94
Log DWH	-0.43	0.68
Gender	-3.17	0.01
Civil Status	1.26	0.22
Source of Income	2.68	0.02
Devices Used to Connect Online Moderating Variable		
FT – Both	0.58	0.80
Shopping – Mobile	5.06	0.04
Shopping – Both	6.31	0.01
FT & Shopping – Both	-0.26	0.90
FT & BP – Both	-1.42	0.27
BP & Shop – Computer	-7.77	0.00
BP & Shop – Both	-1.75	0.29
Payment Schemes Moderating Variable		
Shopping – EW	-4.88	0.03
FT & Shopping – EW	-2.56	0.29
FT & Shopping – BC	1.52	0.40
BP & Shop – PG	0.99	0.51
BP & Shop – BC	-0.42	0.78
BP & Shop – EW & PG	2.95	0.12
All – BC	-0.65	0.70
All – EW & BC	-1.85	0.42
All – PG & BC	0.61	0.74

Based on the values presented on the above tables, the following are the hypotheses results.

H_1 is accepted only for Security Electronic Payments Perception. If the users have lesser daily work hours, they would have lesser positive view on security. This means, the lesser daily work hours they have, they would have concerns on the security of the electronic payment systems, which in turn the preference would transacting physically rather than online.

H_2 is accepted for Security and Trust Payments Perceptions. Users with employment as a source of income feel more secured and more trusting with the currently available electronic payment systems. This means, those who are employed would be more accepting of the available electronic payment systems.

H_3 is accepted only for Trust Electronic Payments Perception. Female users would be more trusting with the currently available electronic payment systems compared to males. This means, females would think that their information is kept confidential, their online transactions are safe, and if problems incurred, they will be informed than males.

H_4 is rejected. This means that regardless of the civil status of the users, it will not affect their general, privacy, security, and trust perceptions on the currently available electronic payment systems.

H_5 is rejected. This means that regardless of the age of the users, it will not affect their general, privacy, security, and trust perceptions on the currently available electronic payment systems.

H_6 is accepted for General, Security, and Trust Electronic Payments Perceptions. This means that the devices used to connect online influence the kind of online transactions performed in terms of the frequency, comfortability, and doing of online transactions; their confidence on the security features, their information is secured, and it will not be disclosed to any inappropriate parties; and their confidence that their information will be kept confidential, their online transaction is safe, and that they will be informed if problems incurred.

H_7 is accepted for General and Trust Electronic Payments Perceptions. This means that

the payment schemes used for online transactions influence the kind of online transactions performed in terms of the frequency, comfortability, and doing of online transactions; and their confidence that their information will be kept confidential, their online transaction is safe, and that they will be informed if problems incurred.

4. CONCLUSIONS AND FUTURE STUDIES

Based on the results, doing online transaction is of convenience, where Filipinos have limited time to physically perform their necessary tasks such as paying their utilities and/or sending money to their relatives. Additionally, females have trust in the e-Commerce security, which business can niche. However, males are not. Designing a more secured electronic payment systems will help decrease it. Furthermore, provision of user friendly applications and systems will help encourage more Filipinos in adopting it because the current devices that we have for connecting in the Internet helps in the adoption of the electronic payment systems, such as for mobile, there are applications that caters fund transfers and/or bills payments, which makes it easier for Filipinos to execute. And the kind of electronic payment systems affect the kind of online transactions that Filipinos use, where having diverse payment schemes will encourage more Filipinos in doing online transaction using their preferred method based on their general, privacy, security, and trust perceptions.

With these, the Philippine Government is on the right track on providing channels on improving the use of electronic payment systems thru their National Strategy for Financial Inclusion (Banko Sentral ng Pilipinas, 2012).

This research study can be further improved and validated through longer duration of gathering data to increase the number of respondents and consideration of other variables that could contribute in the perception of Filipinos in electronic payment systems. Additionally, more sophisticated statistical techniques may be applied for better results.

5. ACKNOWLEDGEMENTS

Expressing my utmost gratitude to my Advanced Statistics (DBA721D) professor Brian C. Gozun, PhD, for the opportunity given to conduct a quantitative research and to the monumental knowledge he imparted to me. Additionally, I would like to thank the 36 respondents, whom provided their precious time in answering my survey.

6. REFERENCES

Banko Sentral ng Pilipinas. (2012). *National Strategy for Financial Inclusion*.

Bersales, L. G. S. (2016). Total Number of OFWs Estimated at 2.4 Million (Results from the 2015 Survey on Overseas Filipinos) | Philippine Statistics Authority. Retrieved April 10, 2017, from https://psa.gov.ph/content/total-number-ofws-estimated-24-million-results-2015-survey-overseas-filipinos

Chelawat, H., & Trivedi, I. V. (2014). Implications of Emerging Electronic Payment Systems in India: A Strategic Overview. *Journal of Multidisciplinary Research*, *6*(3), 53–65.

Chellapalli, T., & Srinivas Kumar, D. V. (2016). Electronic Payment Systems: Role of Demographics. *SCMS Journal of Indian Management*, 41–52.

Chellappa, R. K. (2002). *Consumers' Trust in Electronic Commerce Transactions: The Role of Perceived Privacy and Perceived Security*. *Thesis*.

Daştan, I., & Gürler, C. (2016). Factors Affecting the Adoption of Mobile Payment Systems: An Empirical Analysis. *EMAJ: Emerging Markets Journal*, *6*(1), 1. https://doi.org/10.5195/emaj.2016.92

E-commerce | Define E-commerce at Dictionary.com. (n.d.). Retrieved April 3, 2017, from http://www.dictionary.com/browse/e-commerce?s=t

Ellis, M. (2014). The Evolution of the Internet and Its Impact on Retail Spaces | WIRED. Retrieved April 10, 2017, from https://www.wired.com/insights/2014/07/evolution-internet-impact-retail-spaces/

Field, A. (2009). *Discovering Statistics Using SPSS*. *Revista Mexicana de Biodiversidad* (3rd ed., Vol. 82). SAGE Publications, Inc. https://doi.org/10.1234/12345678

Hill, R. (1998). What Sample Size is Enough in Internet. *Interpersonal Computing and Technology: An Electronic Journal for the 21st Century*, *6*(3), 1–10.

Liebana-Cabanillas, F., Muñoz-Leiva, F., & Sanchez-Fernandez, J. (2015). Payment Systems in New Electronic Environments: Consumer Behavior in Payment Systems via SMS. *International*

Journal of Information Technology and Decision Making, *14*(2), 421–449. https://doi.org/10.1142/S0219622015500078

Mathew, M., Magnier-Watanabe, R., Pratheeba, S., & Balakrishnan, N. (2014). Assessing Technology Differences in Electronic and Mobile Payment Systems Among Developed and Developing Countries. *International Journal of Innovation and Technology Management*, *11*(2), 1450005. https://doi.org/10.1142/S0219877014500059

Nair, V. P. (2016). Eschewing Cash: The Challenges of Cashless Transactions in the Philippines. *Journal of Southeast Asian Economies*, *33*(3), 387–398. https://doi.org/10.1355/ae33-3f

Niranjanamurthy, M., & Chahar, D. (2013). The Study of E-Commerce Security Issues and Solutions. *International Journal of Advanced Research in Computer and Communication Engineering*, *2*(7), 2885–2895.

Online Shopping Attitudes Survey Template | SurveyMonkey. (n.d.). Retrieved January 28, 2017, from https://www.surveymonkey.com/mp/online-shopping-attitudes-survey-template/

Rachna, & Singh, P. (2013). Issues and Challenges of Electronic Payment Systems. *International Journal for Research in Management and Pharmacy*, *2*(9), 25–30. Retrieved from http://raijmr.com/wp-content/uploads/2014/02/3_25-30-Rachna-et-al..pdf

Santos, M. (2016). 534 New Islands in the Philippines - PSST! PH. Retrieved April 3, 2017, from http://www.psst.ph/534-new-islands-in-the-philippines/