DECEMBER 2018

DISCUSSION PAPER SERIES NO. 2018-22

E-Finance in the Philippines: Status and Prospects for Digital Financial Inclusion

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Abstract

Digital technology applied to banking and financial transactions or e-finance in general has made financial services more widely available and affordable to consumers. And with appropriate and affordable technologies and applications, the financially excluded and the unserved can participate in mainstream banking and finance that will open many opportunities for consumption smoothing and investment and earning possibilities. This paper attempts to study the contribution of technology towards financial inclusion in the Philippines and analyze whether e-finance has enabled the last mile consumers to avail of financial products and services affordably and conveniently. It uses data from financial inclusion databases, and results from a national financial inclusion survey, key informant interviews and focus group discussions with users of a mobile banking application. Electronic money transfers are found to be increasing in the country, but digital adoption rate, particularly for mobile payments, is relatively low especially if compared with countries in the region. The study probes into the experience and concerns of digital finance users, and presents recommendations to improve provision and use of digital financial products and services.

Keywords: e-finance, digital finance, digital financial inclusion, mobile banking, electronic banking, electronic money, e-money,

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E-finance in the Philippines:
Status and prospects for digital financial inclusion

Gilberto M. Llanto, Maureen Ane D. Rosellon, and Ma. Kristina P. Ortiz[1]

1. Introduction

Digital financial inclusion, defined as digital access to and use of formal financial services by excluded and underserved populations (Lauer and Lyman 2015) has caught worldwide attention because of its great potential in contributing to inclusive growth and income inequality. Digital technology applied to banking and financial transactions or e-finance in general has made financial services more widely available and affordable to millions of poor customers. This has induced the welcome phenomenon of "poor customers moving from exclusively cash-based transactions to formal financial services" (Lauer and Lyman 2015, page 1). Financial inclusion means bringing all segments of a population irrespective of their economic situation to have effective access to a wide range of financial products and services (World Bank, BSP, Llanto 2017). Bourguignon and Klein (2008) emphasized the role of lack of access to finance in generating persistent income inequality, as well as slower growth.

Because of financial inclusion's great potential in contributing to inclusive growth and income equality, several global initiatives to foster it have been made. G20 leaders established the Financial Inclusion Action Plan and the Global Partnership for Financial Inclusion. In Southeast Asia, the region's leaders have made the promotion of financial inclusion a key objective under the ASEAN Framework on Equitable Economic Development (Yoshino and Morgan 2017).

Various global efforts to provide inclusive financial services seem to indicate the positive difference of access to financial services to people's lives[2]. Reviewing various studies on financial inclusion, Cull, Ehrbeck and Holle (2014) reported recent evidence based on rigorous research methodologies indicating the potential of inclusive and efficient financial markets to improve welfare, reduce transaction costs, spur economic activity, and improve delivery of social benefits and innovative private-sector solutions. These authors made the observation that development of inclusive financial systems is an important element for economic and social progress on the development agenda. However, notwithstanding those efforts, there still are many others, especially millions of poor households, who have remained financially excluded and underserved. A key indicator of financial inclusion is the percentage of adults who have an individual or joint account at a formal financial institution, such as a bank, credit union, cooperative, post office, or microfinance institution (MFI), or with a mobile money provider. According to the Global Findex database for 2014, which is based on survey interviews, the worldwide average for this measure is 62%, and the total number of adults without accounts is about 2.0 billion, down substantially from 2.7 billion in 2011, but still high (Yoshino and Morgan 2017).

In the Philippines, the country's two successive development plans, namely Philippine Development Plan (PDP) 2011-2016 and 2017-2022, have identified financial inclusion as a key objective for achieving the country's goal of inclusive growth. The experience of Philippine microfinance banks and NGOs in the past two decades has pointed to the salutary

[1] Philippine Institute for Development Studies. The authors thank Mr. Arjan Paulo S. Salvanera for his research assistance.
[2] Some of these have been documented by the World Bank's Consultative Group to Assist the Poor (CGAP).

effects on the lower-income groups arising from wider access to basic finance services (deposits, loans, micro-insurance). The Philippines is considered a pioneer in financial inclusion because of its many initiatives and gains in microfinance that are especially focused on the underserved, the unserved, and the small and medium enterprises (SMEs). This has emboldened policy makers in pushing for inclusive finance in view of the sizeable number of the population that continues to be financially excluded. Greater financial inclusion presents a major challenge to policy makers who see it as an effective mechanism for addressing problems of growth and income inequality.

In line with the PDPs, which was crafted by the government in consultation with private stakeholders, the Bangko Sentral ng Pilipinas (BSP)[3] is working toward an inclusive financial system that is fully responsive to the needs of the domestic economy. Inclusive finance will be achieved through innovative delivery channels and use of technology to reach the financially excluded. The BSP has been very active and consistent in coordinating efforts to expand financial inclusion and has adopted a facilitative regulatory stance toward microfinance initiatives, including e-finance for the financially excluded (Llanto 2017). Among other initiatives, the BSP has encouraged micro-savings and allowed banks to expand their financial footprint through the establishment of micro-banking offices (MBOs) in areas where it may not be economically feasible to open a full branch immediately. About 54% of disbursements are currently done electronically and the National Retail Payments System (NRPS) developed by BSP provides the necessary policy and technology framework for the interoperability[4] of mobile money and e-money services offered by different players. Today, policy-makers perceive interoperability as an emerging concern in the provision of digital finance since this has implications on the goal toward financial inclusion. In the Philippines, it remains a work in progress for as noted by Arabehety, Chen, Cook, and McKay (2016), the interoperability arrangements in the country still does not show any clear pattern as opposed to other countries which already have market-wide interoperability across digital financial service providers.

Mainly through the BSP's efforts in pursuing digital and financial inclusion, the country's global ranking has improved according to the 2016 Financial and Digital Inclusion Project reported by the Brookings Institution in Washington. The Philippines ranked sixth place in 2016, an eight percentage points higher than its rank in 2015. Likewise, BSP was commended for its support to pursue the shift from global use of physical cash to digital transactions. Brookings also cited the BSP as a front-runner among central banks in establishing a dedicated financial inclusion unit for its work on financial inclusion data and reporting and issuance of enabling and proportionate regulations.

Digital finance is crucial in attaining the goal of a more inclusive finance. CGAP has underscored the high cost of building and operating brick-and-mortar bank branches, their expensive maintenance especially in hard-to-reach areas in the interior and uplands and the costly travel faced by rural customers to urban areas where financial institutions choose to locate their branches[5]. The immediate solution seems to lie in leveraging digital finance to deal with the problems of physical (traditional) banking. As current global experience shows digital financial services are a major instrument for financial inclusion. They are a potent instrument for providing the financially excluded (that is, the underserved and the unserved) and SMEs with access to relevant, appropriately designed and affordable financial services.

[3] Central Bank of the Philippines.
[4] This paper uses the definition of interoperability provided in Arabehety, Chen, Cook and McKay (2016) which is, "the ability for mass market users of DFS accounts to perform specific use case payment transactions between accounts at different providers."
[5] "Digital Financial Services" http://www.cgap.org/topics/digital-financial-services [Accessed March 6, 2018].

Digital financial services (e-finance) have the potential to make a large impact in financial inclusion as evidenced by progress in some African and Asian markets. According to CGAP, digital financial services are increasingly being made available to unbanked individuals through a variety of digital channels such as mobile phones, point-of-sale (POS) terminals, networks of small-scale agents, payment aggregators[6]. CGAP cites estimates from the 2015 GSMA Global Adoption Survey of more than 400 million people who are linked globally through basic mobile payments services, allowing them to send money, pay bills, or purchase prepaid electricity with greater ease, affordability and access.

A few studies on financial inclusion have been conducted in the Philippines (Llanto 2015, 2017; Llanto and Rosellon 2017) but the role of digital technology in financial inclusion has not been studied in detail. There has been very limited information available in the existing literature that examines the role of e-finance in achieving the objective of inclusive growth. This paper is an attempt to study the contribution of technology towards financial inclusion in the country and analyze how different applications of e-finance have enabled the last mile consumers to avail of conveniently and affordably. This would directly or indirectly reflect the effectiveness of the financial institutions efforts to bring-in underprivileged people to the mainstream financial system, especially in rural areas. Thus, this study seeks to determine whether e-finance has made it easier for consumers to avail a full set of basic financial products and services such as savings, credit, payments or remittance, and insurance. Toward this end the following questions are raised:

- What is the current landscape of digital finance in the Philippines?
- What are the users' perceived advantages and disadvantages in using e-money?
- What are the challenges, as well as the facilitating factors, in using e-money among households?
- What are the roles of the regulators in the propagation of digital finance in the Philippines?

The paper uses financial inclusion statistics from the BSP and the World Bank Global Findex database. It also uses data from the National Baseline Survey on Financial Inclusion (NBSFI) 2015 undertaken by the BSP, which is the first attempt to measure financial inclusion in the Philippines in terms of consumer experience and product impact.[7] To complement these data, key informant interviews (KII) and focus group discussions (FGD) were conducted with a consumer group, e-money service providers (a rural bank and a fintech company, regulator (BSP) and users of e-money (clients of a rural bank)). Using these data sources, the assessment in section 3 of the paper provides a comprehensive analysis of the characteristics of consumers, the determinants of use of e-finance and the overall impact of the product or service on the lives of consumers.

The paper is organized as follows: after the Introduction, Section 2 proceeds with a brief review of the rise of the digital economy in the world today citing global trends, benefits and issues in order to provide context to the discussion of e-finance in this paper. Section 3 discusses e-finance and e-money in the Philippines and presents a case study of the use of digital technology in making financial services accessible to low-income groups. The last section summarizes the discussion and provides some policy recommendations.

[6] Ibid.
[7] The NBSFI is a nationally representative survey of Filipino adults on financial inclusion. It has a sample size of 1,200 adults covering the areas of NCR, Balance Luzon, Visayas and Mindanao. The respondents were selected using a multi-stage probability sampling and the conduct of the survey was done through face-to-face interviews.

2. Current global trends in the digital economy

The digital economy has created unprecedented changes in global markets. In a recent essay, Kimura and Chen (2017) pointed out the radical changes that e-commerce has brought to modern society, especially in the Asia-Pacific where it has experienced the fastest growth worldwide. Projected global revenues from cross-border e-commerce are projected to reach as much as US$600 billion in 2018, two times as much as that in 2012. According to Kimura and Chen (2017), the share of e-commerce in total global retail sales increased by 12 percentage points between 2015 and 2016. By June 2016, the scale of online shoppers in China has reached 448 million and online shopping usage rate has reached 63% (CNNIC 2016). Singapore (60%), Malaysia (52%), and Thailand (51%) are among the world's top markets with the highest online shopping penetration rate as well. Overall, the scale of digital economy in ASEAN is projected to increase by 5.5 times by 2025 (Think with Google 2017). In the near future, the Asian market will account for nearly 40% of the world total revenues generated by cross border e-commerce, making Asia the global epicenter of e-commerce (BCG, 2014)[8].

Global digital commerce is now estimated to be over US$1 trillion annually. Cases of e-commerce platforms which were able to access global markets are perceived in the likes of Amazon, eBay, Alibaba, Flipkart, and Rakuten among others.[9] According to Gartner, Inc. (NYSE: IT) e-commerce will drive 125,000 large organizations to launch digital business initiatives by 2020, with more than 80% estimated digital revenue increase, and companies that are adapting digital technologies will be 26% more profitable than competition.[10]

The UNCTAD (2017) indicated that around 100 million people worldwide are employed in the Information and Communications Technology (ICT) sector. The reported growth in global e-commerce at 57% from US$16 trillion in 2013 to US$25 trillion in 2015 is staggering. The sector contributes roughly 6.5% to global GDP. From 2010 to 2015, the exports of telecommunications, computer and information services increased by 40%, amounting to US$467 billion, and trade in ICT goods was over US$2 trillion in 2015. Sales of robots and 3D printers was at its highest level and the volume of Internet traffic is expected to grow 66 times higher in 2019 than it was in 2005[11].

McKinsey & Company (2017) reported that the Internet today connects about two billion people worldwide. Half of these live in "aspiring countries" which it defines as "countries that are climbing the developmental ladder quickly, with diverse populations and inarguable economic potentialities, countries as varied as Algeria, South Africa, China, Iran, and Mexico" (page 1). It also noted the rapid growth of Internet penetration in the aspiring countries, estimated at 25 percent per year for the past five years in the 30 aspiring countries, compared with 5 percent per year in developed countries. This was basically accomplished through the ubiquitous mobile phones that use mobile technology applications for providing various services to the population. Mobile subscriptions in these countries have increased from 53 percent of worldwide mobile subscriptions in 2005 to 73 percent in 2010 (McKinsey & Company 2012).

[8] As cited in Kimura and Chen (2017).
[9] Data compiled by Madeline Cabauatan in her consultant's inception report submitted to PIDS, "The Rise of Digital Economy in the Philippines: Review of Literature, February 2018
[10] https://www.gartner.com/newsroom/id/3142917
[11] Data compiled by Madeline Cabauatan in her consultant's inception report submitted to PIDS, "The Rise of Digital Economy in the Philippines: Review of Literature, February 2018.

The McKinsey report indicated the significant contribution of the Internet in aspiring countries at an average 1.9 percent of GDP in aspiring countries, around US$366 billion in 2010. By comparison, the Internet in developed countries contributes an average 3.4 percent of GDP. In absolute terms, McKinsey & Company estimated the economic value generated annually by the Internet at US$119 per capita in aspiring countries compared with US$1,488 per capita in developed countries. All these indicate the great potential of "robust Internet ecosystems" (page 9) in unlocking value and in growing the economies of aspiring countries and the developing countries in general.

In the ASEAN, Kimura and Chen (2012) citing a report of McKinsey Global Institute noted that nearly 90% of households in Singapore are Internet users. In 2012, Internet-related economy accounted for 4.1% of Malaysian GDP (McKinsey Global Institute 2016). Less-developed CLMV countries– Cambodia, Lao PDR, Myanmar, and Viet Nam–are quickly catching up. For instance, the share of Internet users in the total population of Viet Nam increased from 1.3% to 52.7% between 2001 and 2015. The number of Internet users grew at 34.7% in Cambodia and 32.4% in Myanmar every year (Kimura and Chen 2012).

The digital economy is propelling growth across many different countries; it is changing the way economic agents such as buyers and sellers interact in the marketplace, and it is creating profound impacts on productivity, creating many growth opportunities even as it offers innovative solutions to age-old problems such as those in providing the financially excluded and unserved with access to an array of financial services, including micro-insurance and payments system designed for small-scale agents. There of course are many challenges. Moneo (2017) speaks of the continuing emergence of new technologies, changes in consumer habits and as well of threats faced by businesses in different sectors[12]. Among others, he calls attention to vast changes in *technologies* (e.g., blockchain technologies, biometric authentication, quantum computing, etc.), *new competitors* (e.g., in digital finance, fintech companies vs large digital banks, large corporations such as Apple, Google and Facebook which will focus on online payments and general financial services), *new regulations* (e.g., payment service directives to stimulate competition, general data protection directives to ensure against fraud), *new customers* (e.g., millennials, new digital generation adept with and comfortable with data) and *new business models* (e.g., cashless, completely digital businesses exploiting vast data streams and augmented reality).

In the financial services industry, digital finance has disrupted the industry through many significant innovations that address rising consumer expectations about usefulness and appropriateness of the product or service, affordability, immediacy and lately inter-operability across different financial services providers. Its impact on the financial services industry is unsettling. From the view of Saal, Starnes, and Rehermann (2017), digital transformation, which has upended various industries in the real sector, is now also sweeping the financial services industry. Meanwhile fintech firms and other non-bank financial innovators have risen to give stiff competition to traditional brick-and-mortal banks that have been grappling with ever increasing capital requirements and other rules imposed by regulators who still smart from the unexpected shake-up of the banking industry in the aftermath of the 2008 financial crisis. FinTechs offer solutions in product areas such as payments, remittances, savings and investments, personal financial management, trade and invoice finance, small and medium-sized enterprises (SMEs), lending, and insurance (Saal, Starnes and Rehermann 2017). Digital finance has also made inroads in emerging economies but there are serious challenges that

[12]"7 Challenges for the Global Digital Economy" https://www.bbvadata.com/7-challenges-for-the-global-digital-economy/ [Accessed March 7, 2018].

policymakers, financial service providers (banks and non-banks alike) and consumers must address (Box 1).

Box 1: Challenges for Banks and FinTech Companies in Emerging Market

- Low levels of formal financial services (cash dominance in transactions, informal credit and savings)
- Lower income and financial literacy levels (low value transactions, smaller fees, need for user education)
- Underdeveloped technology and venture capital ecosystems (shortage of skilled tech/finance entrepreneurs, small markets, limited revenue potential)
- Relatively weak infrastructure (underdeveloped payment systems, customer credit data, legal enforcement mechanisms for payment obligations, power, telco/Internet coverage).

Source: Saal, Starnes and Rehermann (2017), International Finance Corporation (2017)

3. Philippine case of e-finance and e-money

Lauer and Lyman (2015) categorizes financial service providers into four groups based on the party holding the contractual relationship with the customer: (i) a full-service bank offering a "basic" or "simplified" transactional account for payments, transfers, and value storage via mobile device or payment card plus point-of-sale (POS) terminal; (ii) a limited-service niche bank offering such an account via mobile device or payment card plus POS terminal; (iii) a mobile network operator (MNO) e-money issuer; and (iv) a nonbank non-MNO e-money issuer . Our review of the Philippine case shows that all four categories of financial service providers have implemented and continue to develop e-finance applications to reach a greater number of the population, especially those who have traditionally been financially excluded but who now represents a potentially profitable mass market for these providers.

3.1. Current Trends

Many Filipinos are still unbanked and unserved by formal financial services. According to the 2015 NBSFI, only 43.2% of adult Filipinos have savings account of which 32.7% have actual savings in banks; meanwhile, of the 47.1% of Filipino adults who have outstanding loans, only 4.4% of it have borrowed from banks while 72.3% resorted to informal sources. This is a clear indication that a great portion of adult Filipinos remains unbanked and tends to rely on informal lenders which are unregulated and thus could be providers of predatory financial services. This situation motivates the introduction of e-finance in the country to reach the unbanked and underserved with appropriate financial products and services.

The Philippine central bank, Bangko Sentral ng Pilipinas (BSP), formulated regulations in the year 2000, which allowed local players to offer electronic banking services (Lopez, 2017). The pioneer e-wallets, Gcash and Smart Money, were identified to be one of the fruits of these regulations by the BSP, in collaboration with the financial services industry, to support digital finance. Since then, banks and non-bank entities have offered e-financial services such as e-banking (for banks) and e-money applications. Through these channels, the government aims to reach the unbanked and unserved/underserved population. According to a 2015 report by Better than Cash Alliance,[13] retail payments in the Philippines is still largely cash-based (only 1% of the 2.5 billion monthly retail payments were done electronically). The BSP is looking to

[13] https://www.betterthancash.org/tools-research/case-studies/country-diagnostic-the-philippines. Better Than Cash Alliance is a partnership of governments, companies, and international organizations that accelerates the transition from cash to digital payments in order to reduce poverty and drive inclusive growth. It is an implementing partner for the G20 Global Partnership for Financial Inclusion, and is based at the UN.

steer transactions towards electronic fund transfers and payments, and thereby increase share of digital transactions from 1% in 2013 to 20% in 2020 (Lopez 2017).

A big chunk of e-money transactions, 78.2%, is reportedly done through banks, while the rest can be accounted for other e-money issuers or EMIs (non-bank financial institutions and other entities).[14] There are 2 non-bank financial institutions and 8 other entities listed as EMIs supervised by BSP, as of December 2017. As for banks, the BSP reported that as of June 2017, there are 70 banks with electronic banking facilities, of which 35 are universal and commercial banks, 24 are thrift banks, and 11 are rural and cooperative banks (Table 1). About 60% of banks with e-banking facilities offer internet banking, whether bank-owned internet facility or through BancNet, a Philippine-based interbank network. Mobile banking is offered by 35.7% (25) of banks, while mobile apps have been introduced by 21.4% (15). In terms of e-money instruments such as prepaid card, cash card or remittance card, 40% (28) of the banks with e-banking are registered as EMIs.

While most of the banks that offer these e-banking and e-money applications are universal and commercial banks, there are rural banks that offer mobile banking (1 bank), internet banking through BancNet online (4), BancNet cash-out aggregator/acquirer services (6), and e-money prepaid card/cash card/remittance card (1).[15]

Table 1. Number of banks authorized by BSP to engage in e-banking operations
As of end-June 2017

Type of Bank	No. of Banks with Electronic Banking Facilities (as approved by the BSP)	No. of Banks with E-Banking and E-Money Applications						
		Mobile Banking	Phone Banking	Internet Banking (Proprietary)	Internet Banking thru BancNet Online	Mobile Financial Services thru Mobile Apps	BancNet POS Cash-Out Aggregator/ Acquirer	Electronic Money Issuers (Prepaid Card/Cash Card/ Remittance Card)
Universal and Commercial Banks	**35**	**15**	**14**	**32**	**20**	**12**	**5**	**19**
Universal Banks	19	13	13	18	12	9	3	13
Commercial Banks	16	2	1	14	8	3	2	6
Thrift Banks	**24**	**9**	**4**	**10**	**18**	**3**	**4**	**8**
Rural and Cooperative Banks	**11**	**1**	**-**	**-**	**4**	**-**	**6**	**1**
Total	**70**	**25**	**18**	**42**	**42**	**15**	**15**	**28**

Note: BancNet is a Philippine-based interbank network.
Source: Appendix 7, BSP (2017b)

The Rural Bankers Association of the Philippines (RBAP) also reported that rural banks have been using mobile banking in partnership with third-party entities (RBAP 2014). Many rural banks have been offering mobile money-enabled services, e.g. GCash and Smart Money-

[14] Lopez, M.L., "E-money transactions hit all-time high in 2016", Business World Online, May 23, 2017.
[15] The figures come from a BSP report with data as of June 2017. Some e-banking and e-money applications, for instance, CARD Bank's mobile app, Konek2CARD, may have not been counted.

enabled ATM card services to their clients. SMS banking is also one mobile banking technology that is being offered in the rural banking industry. An RBAP 2014 article indicated that the rural banking industry has already processed more than PHP 16 million in mobile money transactions, which involved almost 100 rural banks, their 1,200 branches and other banking offices (RBAP 2014).

Non-bank entities have also used financial technology (fintech) to enhance usage of financial services. Fintech firms in the Philippines have established a group called "FintechAlliance.ph", composed of strategic non-bank, financial technology players.[16] The alliance generally aims to promote and support building a sustainable financial ecosystem. One of the members of this alliance is FINTQ and Voyager Innovations, the financial technology unit and digital innovations arm, respectively, of PLDT, a big telecommunications company in the Philippines, developed the product called "Lendr." Lendr uses a mobile technology platform in applying and processing any type of loan. Subscribers of the mobiles networks in the Philippines, through their mobile device, are able to make use of a one-stop application/portal showing multiple loan products of all partner banks and microfinance institutions and companies, for faster, more convenient, dynamic and secure application process. FINTQ also offers microinsurance through the KasamaKa Microinsurance program.

Nonetheless, average technological adoption in the Philippines has been lagging in comparison with other Asian countries. In 2016, the World Bank's Digital Adoption Index showed that the Philippines' score was at 0.43 only which falls below that of the global average of 0.53 and East Asia and the Pacific at 0.50 (Table 2). In addition, it can be seen that those with higher GDP per capita have higher adoption rate.

Table 2. Digital Adoption Index of Selected Asian Countries

	2012 GDP per capita (constant 2005 US$)	Business	Governments	People	Overall DAI
China	3,866	0.41	0.67	0.77	0.62
India	1,235	0.25	0.77	0.49	0.50
Indonesia	1,854	0.35	0.57	0.42	0.45
Japan	37,595	0.65	0.94	0.84	0.81
Korea, Rep.	24,566	0.78	0.99	0.89	0.89
Malaysia	7,374	0.42	0.85	0.80	0.69
Philippines	**1,665**	**0.35**	**0.43**	**0.52**	**0.43**
Singapore	38,088	0.73	0.97	0.93	0.88
Thailand	3,426	0.43	0.56	0.65	0.55
Vietnam	1,078	0.26	0.49	0.62	0.46
East Asia & Pacific		**0.40**	**0.43**	**0.63**	**0.50**
Global average	**3,968**	**0.35**	**0.52**	**0.66**	**0.51**

Source: World Bank's Digital Adoption Index

[16] "Financial technology firms form industry group", October 21, 2017. Business World Online. http://bworldonline.com/financial-technology-firms-form-industry-group/.

Table 3 shows the extent of usage of digital financial transactions in the country relative to other Asian economies. Data shows that on average, financial account holders in the Philippines mostly conduct digital mobile transactions when sending or receiving remittances and when users have accounts that are connected to a financial institution.

Table 3. Some indicators on digital financial transactions in selected Asian countries

Indicators [a]	CN	IN	ID	JP	KR	MY	**PH**	SG	TH	VN	Ave.[b]
Made transaction from an account at a financial institution using a mobile phone	19.1	6.1	4.3	5.8	35.5	10.3	**9.3**	16.7	4.9	9.3	12.1
Paid utility bills: using a mobile phone	1.7	0.5	0.7	0.5	8.9	5.8	**0.6**	4.8	0.9	0.2	2.5
Received domestic remittances: through a mobile phone	6.0	-	0.2	-	-	6.9	**10.8**	8.9	1.2	0.7	5.0
Sent domestic remittances: through a mobile phone	10.1	-	3.6	-	-	7.5	**16.2**	9.9	2.0	0.7	7.1
Used a mobile phone to pay utility bills	1.3	0.2	0.4	0.4	6.0	3.2	**0.3**	2.5	0.8	0.2	1.5
Used an account to make a transaction through a mobile phone	14.3	3.1	1.5	5.6	32.9	7.8	**2.5**	16.0	3.8	2.7	9.0

Note: [a] % with an account, age 15+ ; [b]Average among these 10 countries.
Source: World Bank's 2014 Findex Database

Financial innovation is not new in the Philippines. Realizing that the country is one of the world's top home to very high volume of SMS exchange, local telecommunication companies have designed a basic product which addresses the interest of the consumers (GSMA, 2012). The basic product is only for sending and receiving remittances but it has helped consumers because of a reduction in transaction time and cost. However, mobile-to-mobile payment transactions did not prosper. This is the reason why these companies introduced an ATM card with an account alongside with their mobile account. This has boosted the figures of Filipinos having an account but not the transactions through mobile account. The Philippines lags behind its neighbors in terms of "using an account to make a transaction through a mobile phone" and is still being considered as a nation using mostly cash-based transactions. Most of the users have to withdraw their cash first before doing their transactions. Since 2000, Filipinos have been successful in using mobile money, thanks to the rapid adoption of mobile phones from 3% to 68% in 2012. SMS-based transaction has been the medium of mobile money. But internet speed has stayed stagnant since then. With this, the country cannot cope with the development of financial products globally (GSMA, 2012). The binding constraint is the inefficient telecommunications services in the country. Data from the International Telecommunication Union (ITU) indicate that more than 50% of individuals in the Philippines use the internet, specifically, 53.7% in 2015 and 55.5% in 2016. With the introduction of a larger internet bandwidth, financial industry will have greater room to develop and innovate their products.

The hope lies in the higher adoption rate exhibited by consumers, which enterprising businesses who would dare to embrace the new technologies, can profitably tap on. However, much of the task of developing and improving the digital financial landscape rests on the shoulder of government and business because they have basically the means and the motivation (profits for business; inclusive finance for government) to do it. As will be discussed in detail later in the paper, early adopters of a digital financial service (i.e. mobile application of CARD Bank such as "konek2CARD") are enthusiastically using the application to make some transaction, sending, receiving money and even payments. CARD Bank, a rural microfinance bank, used "social trust" as one of its key success factors in advocating its digital mobile application. This would not have been possible without the support and even encouragement by the regulator (BSP).

Philippine internet infrastructure is still a persistent problem in the country. An internet download speed of 16.1 Mbps for fixed broadband and 12.7 for mobile phones are way below than the global average of 42.7 Mbps and 22.2 Mbps, respectively (SpeedTest, 2018). Internet providers are aware of the gravity of the problem, as mentioned by FINTQ, a SMART/PLDT company. Startup companies and traditional companies have the capacity to innovate and cooperate with one another. In fact, these companies, if they want to, can develop a synergetic relationship with the regulators toward improving drastically internet service in the country. A combination of positive and negative incentives should be used by the government and the regulators to encourage competitive and responsible behavior in the two major telecommunications service providers in the country.

3.2. Factors affecting use of e-money

E-money transactions increased, while share of active e-money accounts decreased, as indicated by data from the BSP in 2015 and 2016. Particularly, the number and amount of inflow and outflow transactions and number of accounts increased, and e-money cards remained steady except for ATM debit cards (Table 4). Inflow and outflow transactions in 2016 are slowly approaching one trillion pesos, amounting to PHP 956.1 billion, which is a 4.3% increase from 2015. The number of registered and active e-wallet accounts also increased by 21.4% and 8.9% respectively; while an increase in issuances of ATM debit cards of 24.1% was recorded. However, the share of active e-money accounts (among registered accounts) decreased from 68.1% to 61.4%, and e-money prepaid cards and credit cards did not increase substantially (less than 1%), which suggest that current adoption of digital financial transactions leaves room for improvement.

Table 4. Electronic money in the Philippines

	2015	2016	Growth (%)
Number of Transactions (in millions)			
Inflow	60	67	11.9
Outflow	267	299	11.9
Amount of Transaction (in billion pesos)			
Inflow	456.4	477.7	4.7
Outflow	460.2	478.4	4.0
Number of E-Money Accounts (in millions)			
Registered e-money accounts (Gcash, Smart Money)	9.4	11.4	21.4
Active e-money accounts (among registered)	6.4	7	8.9
Cards (in millions)			

	2015	2016	Growth (%)
Prepaid cards (linked to e-money)*	26	26.1	0.6
ATM debit cards**	40.9	50.8	24.1
Credit cards**	8.43	8.4	0.1

*E-money accounts (excluding Gcash and Smart Money) issued by other E-Money issuers
**2014 vs 2015
Source: Financial Inclusion in the Philippines Dashboard, as of Third Quarter 2017, BSP.

Expanding on the previous section's discussion on concerns referring to the inadequate digital infrastructure (i.e. internet speed) and the low digital adoption level in the Philippines, we look closely at deterrents to using digital finance products and services using a national baseline survey on financial inclusion (NBSFI) conducted by the BSP in 2015 (covers Filipino adults aged 15 years and above). The survey covers different access points and providers of financial products and services, one of which is e-money agents. The portion of the survey referring to e-money agents is used here for discussion.

Results of the survey indicate that most of the Filipino adults surveyed (59.3%) reported that they do not need the products and services offered by the e-money agents (Table 5). E-money agents facilitate cash-in and cash-out transactions;[17] hence it is likely that these respondents do not conduct these types of transaction. On the other hand, about 15% said that the products and services are not suited to their personal requirements and preferences. There are other access points such as money/cash couriers (one type of remittance agent) and banks (for those with bank account that has bank transfer facility). There could be concerns on the quality of service given and preference for the go-to access points/financial service providers.

Meanwhile, 7.2% mentioned that they are not aware of how transactions are done with e-money agents. There are respondents who also reported that they are uncomfortable going to access point; they find the products and services are not cheap; and they do not have/they lack the necessary documents required in the transaction.

Table 5. Reasons for not transacting with e-money agents

	No. of respondents	%
Products and services offered by the access point are not necessary	124	59.3
Products and services are not suited to personal requirements and preferences	31	14.8
Uncomfortable in going to the access point	10	4.8
Presence of long lines and long waiting time in the access point	2	1
Products and services are not cheap	8	3.8
Lack / Absence of necessary documents required in transacting with the access point	8	3.8
Lack of trust in the access point	6	2.9
Lack of awareness in conducting transactions	15	7.2

[17] Involves loading value into the mobile money system and then converting it back out again.

	No. of respondents	%
Other people (i.e. relatives) does the transaction for them	5	2.4
Total	*209*	*100*

Source: 2015 NBSFI, BSP

While these refer to transactions with e-money agents, the results can be a good reference for other digital financial service providers. Consumers have certain preferences and requirements, that if not met, they may continue traditional cash transactions. Financial inclusion does not only refer access, but also to products and services that are appropriately designed and of good quality for them to be relevant and be used. People have different levels of knowledge and experience in the access and use of financial services, and may have different preference or level of requirements.

Lack of awareness on how to transact is also mentioned as a reason for not using a digital service. This result points to the importance of educating consumers on the options available in the market, and providing them pertinent information that will allow them to choose which option is suitable or more preferable for them.

Results also indicate that cost is a factor. Digital financial services may also come with a fee or cost to the consumer. It is therefore worth looking at how these fees and charges compare to costs incurred when conducting traditional, cash-based transactions. Consumers will prefer the option that will entail less/lower cost to them.

Furthermore, document and other related requirements are also identified to discourage transacting digitally. This could be referring to identification cards or documents (as the results being discussed refer to e-money agents). How would the poor and low income population who may not possess or have difficulty securing ID cards be able to access and use digital financial service if such documentations are required. The government is still developing a credit information database, and a national ID system is being discussed. While these plans have not been established, the private sector providers can initiate innovations aimed at identifying customers. Forward-looking, providers can explore investing for instance in biometric scans.

3.3. Case study: CARD Bank's "konek2CARD" mobile application

"Konek2CARD" or "k2c" is a mobile banking application introduced by CARD Bank, a microfinance-oriented rural bank in the Philippines (Box 2 presents information about the bank). The k2C app, which is installed in smartphones, has the following available services according to CARD Bank members (clients and agents): 1) cash-in (deposit/savings); 2) cash-out (withdrawal/loans); 3) cash payment which may be agent-assisted / client-assisted; 4) balance inquiry; 5) fund transfer (accounts within the bank); 6) transaction history, and; 7) customer service.

The succeeding discussion presents the results of the focus group discussion (FGD) with members of the CARD Bank. All of these members are registered in k2C. The main objectives of the FGD are to determine the members' receptiveness in using digital financial services, usage behavior, challenges and issues, and the likelihood to continue using the k2C. There were

a total of 37 of FGD participants.[18] Most of them have at least 5 years of membership in the bank, and opened a bank account for savings and loans--mostly for business and school tuition (a few opened accounts for insurance). Most of are at least high school graduates or have reached college education and are married. Majority of the participants are self-employed (e.g. microenterprise owners, vendors), and acquire their income from their own businesses (more details on their profile in Annex A).

Box 2. Background on CARD Bank, Inc.

In 1997, the Center for Agriculture and Rural Development (CARD) Bank, Inc. was formally established as the CARD, Inc.'s first microfinance-oriented rural bank in the Philippines. It then became a member of the CARD Mutually Reinforcing Institutions (MRI) which aims to provide various financial and non-financial services (e.g. social development services) to the poor especially among women and families (e.g. children) situated in the countryside. Following this vision, in 2000, the CARD Bank allowed its members to become shareholders through the transfer of the members' compulsory savings to the Bank. Today, it continues to grow with 69 micro banking offices (MBOs) and 2.29 million clients nationwide of which one million are with loans[19] (CARD Bank, 2018). Almost 75% of CARD Bank's clients are female, close to 75% are married (or formerly married), and about 80% are over 30 years old. Around 56% of the active clients are borrowers. Their loans are mostly under microfinance (72.3%), housing (8.7%), and agricultural loans (5.3%); while other loans include health, education and calamity loan, etc. Most of the Bank's clients are from rural municipalities/provinces and areas where most of the poor households are located. For instance, half of the ten poorest provinces in 2016 are from the Mindanao area (southernmost island group in the Philippines), which is one of the areas reached by CARD Bank's services.[20]

Having been awarded as a "Financial Inclusion Champion" by the Bangko Sentral ng Pilipinas (*Central Bank of the Philippines*) for three consecutive years, the CARD Bank perseveres to increase its client coverage and bring innovation to its services[21].

[18] Originally, the total number of invited participants was 40. However, due to unforeseen circumstances, only 37 participants arrived.
[19] https://cardbankph.com/wp-content/uploads/2017/10/2-CARD-BANK-AR-2016-final.pdf
[20] https://www.philstar.com/headlines/2016/06/27/1597101/da-focus-10-poorest-provinces
[21] Today, the Bank is working for the full implementation of remittances services.

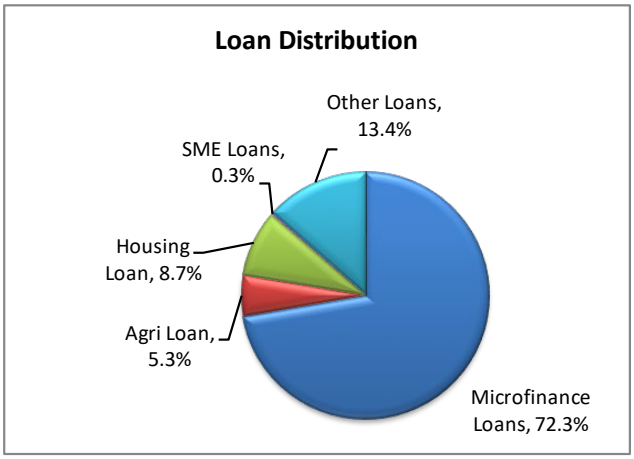
Figure 1. CARD Bank's client profile

GENDER:	1,843,154
Male	462,022
Female	1,381,132

AGE BRACKET	1,843,154
Below18	925
Age1830	378,977
Age3140	475,659
Age4150	451,380
Age51Above	536,213

CIVIL STATUS	1,843,154
Single	431,791
Married	1,356,236
Widow	44,296
Other	10,831

	Borrowers	Active Clients
AREAS	1,025,616	1,843,154
Baguio	21,509	45,582
Bicol	171,619	285,346
Ilocos	25,187	34,741
La Union	18,409	26,627
Laguna	55,163	121,492
Marinduque	30,939	63,866
Masbate	77,187	141,982
Mindanao	78,844	120,891
National Capital Region	56,980	106,375
Occidental Mindoro	47,375	86,073
Oriental Mindoro	96,089	179,276
Panay	109,682	210,935
Pangasinan	35,710	48,776
Quezon	146,170	284,219
Tarlac	9,120	12,903
Visayas	45,633	74,070



Note: The statistics include only the bank branches that have migrated to their new core banking system. Data as of March 31, 2018.

Source: CARD Bank, Inc.

3.3.1. The konek2CARD or k2C mobile application

Aside from technological upgrade in its operations, CARD Bank has initiated various innovations in its provision of services as early as 2011. The first attempt was called the Mobile Financial Services (MFS) which allowed members to conduct financial transactions (e.g. balance inquiry, savings notification) through the clients' mobile phones. This makes use of SMS / text messages only so non-smartphone users can also access this mobile service. This was tested in nine centers across the provinces of Laguna and Quezon. However, despite the overall favorable response, the project was cut short because of issues with the service provider. Improvements were also called for because delays in the notification were later on reported by the users.

In September 2017, the CARD Bank rolled out its second attempt to digitalize its financial services. They called it the "konek2CARD (k2C)" program, which was inspired by the Bank's key success factor: its strong connection to the members. Unlike the MFS, the k2C makes use of mobile data (i.e. internet) which allows members to conduct real-time financial transactions online. The savings accounts of the members (i.e. "Capital Build Up") is now connected not only to their ATM accounts, but also to k2C. To date, k2C is the only digital application that is offered by the CARD Bank. Its module may be accessed via all CARD Bank's ATMs.

The dissemination of the information about the k2C mobile application was done during the center meetings.[22] These center meetings are regularly conducted (i.e. weekly / monthly depending on the center's performance) among CARD Bank members in various areas. This gives the members the opportunity to discuss activities and current and future plans, voice out their concerns and issues, report about project status, as well as, develop the members' leadership and management skills. This is headed by officers, i.e. center chief, secretary and treasurer, who are elected by the members themselves. Account Officers (AO) from the Bank are also present in these meetings. Every session, the repayment rate is reported to the group thus keeping track of the repayment performance of the center. As emphasized by the officers of the Bank, this mechanism does not only serve as a tracking tool, but more importantly, it helps build and maintain ties with its members. Such kind of relationship serves as the Bank's anchor towards greater coverage and service provision.

According to the clients[23], the AOs introduced to them the k2C mobile application and demonstrated to each one of them its features and functions (e.g. balance inquiry, savings, loans, payments). They filled out a form and indicated whether they own an android phone or not. Members who owned android phones received notification for them to register to k2C. They noted that it was hassle-free since the AOs were the ones who brought the documents to the bank. The entire registration process took one day only. As for the learning process, it was also very quick. Some of them took only five minutes to explore and navigate the application. Noticeably, the respondents who answered these were the younger ones in the group. Others answered 10 minutes to an hour.

The AOs also had the opportunity to recruit agents. These members underwent a three-session seminar before they become official agents. These agents act like tellers in a bank where a member can withdraw from. The only difference is that the agent must have enough capital[24] (i.e. requirement of at least PHP5,000 capital according to CARD Bank) before they can actually transact with the members. To illustrate, should the clients decide to remit savings to their accounts, but find it difficult to reach the bank, what they can do is seek the assistance of an agent. This transaction is called agent-assisted transaction; the other one is client-assisted which is free of charge since clients need not rent the service of an agent. Likewise, when they need to withdraw / cash out from their accounts, they can go to an agent who has enough capital to provide the amount of cash they need. These agent-assisted transactions have corresponding fees (Table 6).

[22] CARD Bank organizes its members into groups called 'centers'.
[23] For the purposes of the discussion, the term "clients" would refer to members who are users only, i.e. they are not staff of the bank and/or agents.
[24] During the FGD, the agents however noted that they were not fully informed that they would need a significantly large budget for their capital as agents.

3.3.2. Advantages of using k2C

The clients pointed out some significant advantages of using k2C. They reported that the transaction process got easier, faster, and hassle-free. They noted that the members can now transact at any time of the day (e.g. withdraw at night / beyond banking hours through agents) which is very important as most of them are either working or at home, doing errands (e.g. picking up their children from school).

There has been less cost, too. The amount of money that they pay to the agents (for agent-assisted transactions) is way lower than the cost of going to the banks themselves. Aside from paying high amount of fare (e.g. PHP100.00), they would no longer need to spend longer time (e.g. waiting in line which could take the entire day) in accomplishing the needed transactions. This is especially true for farmers who are distant from banks. With k2C, they only need to go to the nearest sari-sari store / agent to transact. In addition, late payments (loan payments or deposits after bank operations or center meetings) can be accommodated by agents who are located just within the community. Late-paying members need not go to the bank.[25] Nonetheless, according to the officials of CARD Bank, there are members who really opt to go to the banks which are located in the city proper (more urbanized area) to unwind.

One of the center chiefs also shared her experience with the members when k2C was introduced to them. Nobody from the members wanted to register to k2C because of the perception that this entails a cumbersome process. But with great persistence, she was able to convince the members to download at the very least the application and follow the bank's initiative to digitalize. There came a time when the members had no choice but to transact with the agents through k2C. When they experienced the convenience brought about by the new mobile application, one by one, the members started buying their own android phones and used the agent-assisted feature of the application. In the case of this center chief, all of the 120 members of the center have registered to k2C.

3.3.3. Bottlenecks

Despite these benefits, the resistance to learn and use such technology is still apparent among the members mainly due to the following factors: 1) misconception about technological upgrade; 2) presence of alternative options; 3) seemingly high overall charges; 4) absence of required gadget (i.e. android smartphone), and; 5) weak and/or intermittent mobile phone signal.

As mentioned earlier, some of the center chiefs reported during the FGD that several members hesitated to register to k2C because of the perception that it is difficult to use such digital application. According to them, this notion particularly emanated from the elderly who have less patience to learn new technology and thereby resort to old practice (almost 30% of the Bank's clients are over 50 years old). Such misconception about the application easily discourages users from migrating to digital transactions. The officers of the CARD Bank however noted that this does not pose a significant threat to the success of the application as the center chiefs tend to be creative and tactful when it comes to convincing members to adopt the new technology. Moreover, they emphasized that the current trend in banking is towards the incorporation of, if not moving towards, digital financial services.

[25] According to the agents, the agent-assisted transactions occur almost every day, and these transactions are usually for late payments.

The second factor is the presence of other choices. For instance, in the case of one area (Alaminos), there are members who opted not to connect to k2C because they can give their deposits to the AO or sometimes, to the elected treasurer. Before k2C, the members were used to giving their deposits/regular savings to the AOs who would then deposit the money to the bank. This is free of charge. The only condition is that they give the money (e.g. payment) during the center meetings. In k2C, regardless whether it is client-based or agent-assisted, there is a corresponding fee per transaction. For those who give late payments, they have no choice but to transact with the agents. Hence, in the presence of alternative option (i.e. old practice), some of the members would naturally be reluctant to use k2C. This practice relates to the third contributing factor.

The member's decision to resort to traditional banking over using k2C is not entirely due to the presence of an alternative choice, but also because of the direct charges that the members would have to pay. Some members think that it would be better if they pay at the centers (through the AOs/treasurers) with a charge amounting to PHP5.00 (previously PHP10.00) only, which they call "butaw"[26], rather than use k2C because of excessive charges (e.g. "growing interest"). Via the k2C application, the higher the amount of cash in/out, the higher the amount of fee charged. For instance, for cash-out requests ranging from PHP100 to PHP500, the total charge is PHP10.00, wherein PHP7.00 goes to the agent, while the remaining PHP3.00 goes to the Bank (Table 6).

Table 6. Schedule of Fees, konek2CARD

Cash-In Range (in Pesos)	**Collectible of Agent**	**Total Charge to CARD member**
50-15,000	3.00	5.00
Cash-Out	**Collectible of Agent**	**Total Charge to CARD member**
Cash-Out Request	-	1.00
100-500	7.00	10.00
501-1,000	15.00	18.00
1,001-2,000	22.00	25.00
2,001-5,000	35.00	38.00
5,001-10,000	55.00	58.00
Agent-Assisted Payment	**Collectible of Agent**	**Total Charge to CARD member**
50-500	4.00	6.00
501-1,000	7.00	9.00
1,001-2,000	10.00	12.00
2,001-5,000	16.00	18.00
5,001-10,000	26.00	28.00
10,001-15,000	36.00	38.00

[26] "Butaw" is a small fee (similar to the concept of membership fee) collected from each member on a regular basis. According to the center chiefs, the fund pool is used for special gatherings (e.g. Christmas party), buying of supplies (e.g. logbook, pens) for the collector, delivering of remittance and other activities relevant to the conduct of CARD Bank transactions. The paying of this fee is optional.

Despite this perception, the chiefs tried to explain to the members that it would still be costlier for them to go to bank (e.g. including transaction costs of going to the bank and time spent for processing the loans) than simply pay to the agent the due amount. Meanwhile, one of the chiefs reiterated that the "by-transaction" charges of the k2C discourage the members from using the application. For instance, if there are three members in the household who needs to conduct three separate transactions, they will be charged thrice as much (e.g. PHP10.00 times 3) as compared to the fee that they will be charged when they transact at the centers (e.g. PHP 10.00 only for the three transactions).

The fourth reason is a common issue especially among low-income groups. It is the absence of the necessary gadget to use k2C. As of now, the app can only be accessed via smart phones, which can cater one user/member only. This is not yet available on computers which could allow members who do not have android phones to simply go to computer shops and rent. According to the officers of CARD Bank, they are still working on this aspect, i.e. accessibility in terms of availability in other gadgets and multi-user feature.

The fifth reason, which is a major problem nationwide, is the issue on telecommunication service providers. Even before the discussion on the bottlenecks during the FGD, the members were already raising their concern with regard to the connectivity. According to them, some of the members are discouraged when they see the notification, "Connection failed". Often, the server is offline and the application cannot be accessed. For those in the farms, this factor is a major setback when it comes to the usability of the application. Due to this obstacle, members, especially the elderly ones, easily lose their interest in exploring the application and transacting through it. Moreover, according to the agents, there are also days when the application has downtime, particularly on Saturdays and/or Sundays. Recognizing this serious constraint, the Bank is already finding ways to allow members to connect to the application even without data. This means that they would be able to transact offline. The Bank is also exploring other means to get around this major hurdle and they have been receiving suggestions from the private sector.

Other reasons as to the unwillingness of the members to use the app include the geographical distance of the members' houses from the bank; if there is a nearby bank, the member is less likely to conduct transaction through k2C. Also, there is the presence of glitches in the use of the application. One of the members experienced a doubling of the transaction.

3.3.4. Case study insights

CARD Bank, as a microfinance-oriented rural bank, reaches out to the low income/poor households, aiming to provide them with diverse financial as well as non-financial services. Introducing the K2C program reaches even more to their members as it offers convenient, time-saving and less costly banking transactions, especially to those who live distantly from city or town centers where bank branches are located, who have work or have chores to take care of. As discussed earlier, having the mobile app has allowed the members accessibility to their accounts anytime of the day, which saves on transport cost, on the time spent to travel, and on the cost of waiting in line at the bank branch (instead of spending time at work and earning, or doing chores).

The literature on financial inclusion discusses benefits of digital finance for households and individuals (compilation by McKinsey & Company 2016). For one, digital finance gives

opportunity to own a financial account. In owning an account, especially by women in the household, there is tendency to spend more on food, education and health care, thereby increasing the welfare and productivity of the family. On another note, studies have also looked at the impact of convenience and lower costs associated with digital finance. A study by Acker et al. (2015) in Niger, Africa, found that people avoided trips to nearby towns and lining up in banks when they used digital payments, and this has saved them an hour of travel time and more than 3 hours of waiting time per transaction. The amount of time and money saved has helped them improve their management of their time, e.g. spend more time at work/income-generating activities, as well as their expenses. In Malawi, a study found that farmers whose crops sales income are deposited into accounts were able to spend 13% more on inputs for future crops and reached a 21% average increase from the previous year's harvest, compared to farmers who received payments in cash (Brune et al. 2015). These studies indicate that through digital finance, people could improve management of their income and expenses, and are able to invest (more) in their businesses/occupation, spend more on food, education and health care, and even put money aside for unanticipated economic shocks.

Meanwhile, financial inclusion also entails relevance of financial services provided to customers. K2C's mobile application offers basic banking transactions, e.g. cash-in (deposit/savings), cash-out (withdrawal/loans), cash payment which may be agent-assisted / client-assisted; balance inquiry; fund transfer (accounts within the bank); transaction history, and customer service, and will be offering more features in the next phase, according to the bank executives. During the FGD, the members mentioned of certain services that they wish to include in the application for future transactions. These include money transfer (from CARD Bank to other banks, and vice versa), bills payment, and remittances. They also suggested having multiple log-in feature in the application so that other members can access their accounts using other member's cellphones. As for the side of the Bank, it is on its way to implement its various digitalization initiatives. The aforementioned services will be eventually integrated in the application, including electronic load. These added features, among others, will be implemented soon and by phases. Also, they are now targeting to expand their membership to all members of the household.

The FGD participants recognize the benefits of k2C and are aware of members that are not too willing to use the app. They suggested that one of the ways through which the bank can encourage other members to use k2C is through house-to-house visit. According to them, this would greatly rely on the persistence of the elected Center Chief, Secretary, and Treasurer.

Issues and concerns of members as to the use of k2C are related to access cost, connectivity and hesitation to use technology. As mentioned earlier, some of the members find the mobile access/transaction charge relatively high, especially when compared with options to transact in group through agents, or to just go directly to the bank particularly for those living in close proximity to the bank/center. Meanwhile, there is some hesitation to use the app especially by the older and the less tech savvy members. On both these cases, continuous and financial education could lessen the concerns. As for the weak and intermittent internet connectivity, it has been a big concern especially for businesses including individual users who have clamored for a review/reform of government regulations.

But overall, given a choice, the clients unanimously think that they would prefer to use k2C over the ongoing traditional banking process. It is just that the members encounter difficulties in using their phones or connecting to the internet and some still prefer to the write in their own passbook, withdraw, and go to banks, that is why many are still not convinced to migrate or at

least utilize the app. It is even acceptable for them to fall in line in banks. This is especially true for the older members of the CARD Bank. According to the bank, the public acceptance of this upgrade, just like most innovations, would definitely take time, but they are positive that eventually, members would appreciate the benefits of using the mobile application provided that the major issues are resolved.

3.4. Role of the regulator

The Bangko Sentral ng Pilipinas (BSP) perceives digital finance as an enabler of efficiency and scalability in the delivery of financial products and services to the people. Financial inclusion originally rested a lot on physical reach of the service providers; however, with digital technology, providers are now able to immensely expand their reach especially among the low-income groups because of declining transactions costs.

To support further access and usage of digital financial services, the BSP Inclusive Finance Advocacy Office (IFAO) identified three major prerequisites that need to be achieved. The first one is the establishment of a national identification (ID) system that would facilitate the penetration of low-income groups in the digital economy. Currently, there is a pending bill in the Senate which aims to create a national ID system that is simpler and incentive-based rather than the previously proposed security-based system (Avendaño, 2017). The BSP IFAO emphasized that this initiative is a pivotal step toward financial inclusion especially in the conduct of digital transactions. According to them, there are still banks today that require two IDs and some are even selective when it comes to choosing the right ID. Without the national ID system in place, joining the digital economy would prove to be very problematic. Fears that this would compromise the people's right to privacy still remain and this has to be properly dealt with by the government and the regulator. To avoid any conflict with regard to data privacy, the BSP IFAO asserts that it would suffice to have very minimal information such as biometrics.

The second factor is that there is still a need for low-cost, low-key access points nationwide especially in unbanked and underserved local government units (LGUs). In terms of physical reach, current data shows that the overall access situation in terms of areas with banking presence remains low at 65.5% while those with at least one access point, that can either be bank or other access point, is at 90.2% (Bangko Sentral ng Pilipinas, 2017a). According to the BSP, they still aim to have at least one bank and not just an access point in every municipality. Even if digital finance requires less need to build "brick and mortar" units, people would still need an access point through which they can open a transaction account. Recently, the BSP has allowed banks and commercial establishments such as mini-grocery shops (e.g., 7 Eleven) and pawnshops to become access points. Through this policy, these entities can now expand their services without spending as much.

Under Memorandum Circular (MC) No. 987, series of 2017, the BSP has also allowed the creation of branch-lite units to expand the physical reach of the banks' services and thus provide the people a democratized access to financial transactions regardless of their socio-economic status. To complement this, the BSP has recently implemented a policy on "Basic Deposit Account" (BDA) that will encourage banks to offer micro-deposit products (i.e. zero minimum balance and low dormancy fee charges) and services to clients by incentivizing these banks with zero-reserve requirement. These policies will promote the expansion of coverage in unbanked and underserved areas.

The third prerequisite is the implementation of the National Retail Payment System (NRPS) framework which serves one of the backbones of digital finance in the Philippines. This was adopted by the BSP in November 2017 through MC No. 980 and covers "all retail payment-related activities, mechanisms, and users" in the Philippines. Through this collaborative effort, the government aims to promote cashless payment system while ensuring the safety of consumers and the efficiency, affordability and reliability of the retail payment systems. Right now, the percentage of digital payments to the overall retail payments is very low at about 2 percent. By 2020, the BSP aims to increase this to 20 percent. Implementation of activities are now underway (e.g. creation of the "Payment Management System Body") toward this goal.

As for consumer protection, the BSP IFAO noted that even without financial inclusion, consumer protection has always been a priority in digital financial transactions. In fact, there is a separate department within BSP (i.e. Financial Consumer Protection Department) that ensures consumer protection as stipulated under MC No. 857, series of 2014. This foundation is very important in the pursuit of financial inclusion and digital finance because the people, especially the unbanked and underserved, need to trust the system. One of the recent initiatives that the BSP is currently undertaking is on disclosure and pricing (NRPS; Circular No. 980) which requires banks to submit their pricing scheme on fund transfers for publication on the BSP website. Also, aside from the requirements among banks to come up with their own consumer protection policies, the BSP asks them to include BSP standards with regard to transparency and fairness.

With regard to the emergence of crypto-currencies, the BSP is ensuring that banking entities conduct responsible innovations. The BSP implements the "test and learn" approach wherein it engages with the private sector to run pilot tests and see the projects' risks and possible impacts. GCash, a micro-payment service under Globe Telecom, underwent this process. There are innovations / new platforms that undergo test and learn but can already be covered by the existing regulatory framework; there are others, however, that need policy adjustments or create an entirely new issuance (e.g. issuance of E-money regulation). That said, the BSP noted that they do not directly regulate these emerging digital finance platforms; rather, it is the banks that they regulate. Therefore, it is the responsibility of the banks to ensure that the platforms that they are partnering with are operating in accordance with the existing laws and regulations of the BSP.

Despite these efforts and upcoming initiatives, the BSP IFAO perceives some challenges that abound. First is on cybersecurity. There is a need to increase digital awareness among the providers and end-users as safety has become a primary concern in the usage of cyberspace worldwide. This includes also the potential threat to anti-money laundering since the transferring of money abroad is becoming more seamless nowadays. Second is the lack of infrastructure (e.g. connectivity) which is of significant concern to those residing in the rural areas; notwithstanding the very high internet connection rates / connection fees that inhibits greater access and usage. Third is the need to promote further digital literacy and protection because trust issue among the consumers is a real problem as suggested by the BSP IFAO. And fourth is the need for the BSP to maintain its regulatory tools and capabilities, while anticipating the future demands of the market (e.g. case of bitcoin) as technological evolution is becoming more fast-paced. The plans, as well as the needed regulations, have already been laid out. What the BSP must work on is the adoption. They have to strongly engage with banks which entails stronger promotional activities.

In terms of connectivity, the Department of Information and Communications Technology (DICT) is currently implementing the National Broadband Plan project which aims to provide faster affordable and secured internet connection in the country especially in the rural areas or those unserved / unreached by private providers. It has three broad strategies, namely: 1) creation of policy and regulatory reforms; 2) investment of government in broadband "infostructure"[27]; and 3) support for the stimulation of broadband demand (DICT, 2017). Some examples include the provision of free Wi-Fi in public places with high foot traffic (e.g. train stations, waiting shed).

Based on the interview conducted, the DICT iGovPh also supports the move to have a national ID system that could account for everyone especially those in the rural areas. There is also a need to address issues on policy, regulation, security with regard to entering a digital economy. Introducing this technology is hard due to who are reluctant to changes.

In the case of the Department of Finance (DOF), its main contribution in achieving financial inclusion is the development of financial products that are specifically designed for the poor. These financial products must be accessible, affordable and comprehensible by the mass. One of the financial products that prove to be essential is the microinsurance which is supervised by the Insurance Commission (IC) under the DOF. Microinsurance can now be transacted through mobile phone, specifically through text messages for areas without internet data coverage. Recently, the IC hailed FINTQ's KasamaKA Microinsurance program, a private sector initiative, as a national digital enabler in achieving its goal of reaching the country's insurance penetration rate of 4% by 2020 (BusinessWorld, 2018). Currently, it stands about 1.7% only. This crucial innovation is very helpful in informing the unbanked and uninsured Filipinos about the importance of financial security. Nonetheless, the DOF mentioned of the difficulty that is being experienced by the Credit Information Corporation (CIC) in implementing Republic Act No. 9510 or the Credit Information System Act. To provide credit information to all lenders, the registry needs to have a unique identifier of the borrowers which could not be easily provided for one reason or another. This is another motivation in establishing a national ID system.

Gleaning from the results of the interviews with the regulators, it is apparent that the digitalization of financial transactions greatly helps in the achievement of financial inclusion because as emphasized by Llanto (2015), digital financial innovations such as e-money and mobile banking can overcome issues on physical barriers including poor physical infrastructure (e.g. roads and seaports) and high transaction costs resulting from the inaccessibility of some areas. Collaborative efforts between the BSP and the telecommunication companies, on the other hand, remain intact and strong – a factor that has been deemed to be one of the success factors in the implementation of the electronic money (e-money) and electronic money issuers (EMI) operations in the country (Llanto and Rosellon, 2017).

4. Conclusion and policy recommendation

Digital finance presents a great potential for more inclusive finance. With appropriate and affordable technologies and applications, the financially excluded and the unserved could hope for participation in mainstream banking and finance that will open many opportunities for consumption smoothing and investment and earning possibilities. Yet CGAP stresses that the

[27] Refers to Philippine Integrated Infostructure

digital ecosystem will take time to develop as there are also barriers that need to be addressed to create access and scale.[28] The global (and the Philippine) financial inclusion agenda underlines the importance of building consumer financial capabilities, fostering financial literacy and ensuring consumer protection especially for the less capable members of society.[29]

In the Philippines, e-banking and e-money applications are offered in the market. The government, through BSP, issued regulations to support the development of digital finance in the country and ultimately promote an inclusive financial system. Digital finance in the Philippines has its strengths and potentials, but also has weaknesses and faces threats (Annex B provides a summary). As the data revealed, the number of accounts and value in e-money transactions is increasing, but there still appears to be low digital adoption rate, such as in mobile payments. The study found some issues and concerns that would need to be addressed to improve provision and use of digital finance. Below are key findings.

- Based on the FGD at CARD Bank, the extent of usage among registered clients varies from young to old and irrespective of educational attainment. Nonetheless, seemingly the younger ones tend to use the application more often since the respondents explained that most of the older clients let their grandchildren or younger relatives operate the mobile application. Moreover, much of the transactions are still agent-assisted.
- Despite the early stage of e-finance services (i.e. k2C), people start to recognize its importance and strong potential in bringing about convenience and less cost in conducting financial transactions. The k2C mobile application has been particularly helpful to clients who have other work or errands to do.
- Users of k2C save travel cost and time from using the service. The money and time saved can be spent on work or chores and the money saved used for other family expenses. This indicates that digital finance could help people manage their time and expenses and use this to improve their productivity e.g. able to invest more and spend more time in business. Moreover, digital finance allows for wider coverage and utilization of financial services. Savings, loans, and other important financial services that can be easily tapped are great mobilizers of consumption smoothing which is particularly useful to poor households. Given the opportunity to access and use financial services, households can spend more on food, education, health care, and even put aside money for unexpected economic shocks, thereby improving the welfare of the family.
- Based on World Bank's Digital Adoption Index, the Philippines performs lower than its ASEAN counterparts such as Indonesia, Malaysia, Thailand and Viet Nam.
- Users of k2C consider weak and intermittent mobile network signal as one of their concerns. There are spots in the Philippines that have weak mobile network signals and data indicate that the Philippines' internet speed is way below the global average.
- Misconception or lack of understanding about digital finance hinders greater coverage especially among the underserved and unbanked people in rural areas. Trust issues are also prevalent among this segment of the economy. In this light, stronger and more extensive financial literacy programs becomes of particular importance.
- Based on data from the 2015 NBSFI, Filipino adults reported the following barriers to transacting with e-money agents include: the product/service is not needed or does not suit their requirements and preference; lack of awareness of how to transact; transaction is not cheap; lack/absence of required documents.

[28] http://www.cgap.org/topics/digital-financial-services
[29] "Financial Inclusion" http://www.cgap.org/topics/financial-inclusion

The following recommendations are presented, based on these findings:

- Financial education/literacy should be incorporated in the implementation of digital finance. Our study found that there is some hesitation to use digital services by the older/less tech savvy segment of the population, who are considerably a sizeable section of the population and should. Apart from education, a review of the complexity of digital platforms can be done.
- Usage of e-finance depends largely on existing infrastructure. Weak infrastructure, notably in rural areas, highly discourages potential users to learn the technology. Reliable internet connection also contributes in building trust among users and financial service providers. Internet connectivity has been a problem in the country for many years. The government, together with the private sector/providers, should thoughtfully consider soon how to improve the digital infrastructure.
- As exemplified by the CARD Bank and FINTQ, the private sector in the Philippines are very active and innovative in terms of bring about change in the financial landscape despite the existing constraints (e.g. weak infrastructure). Recognizing the size of the remaining underserved market and inevitable move toward digitalization, these companies should continue to find ways to extend more affordable, suitable, and convenient services to Filipinos especially those situated in hard-to-penetrate areas.
- The BSP remains committed in its goal to achieve financial inclusion. Necessary regulations have been put in place and complementary programs are currently ongoing. Today, their thrust is more on ensuring the adoption of the regulations among banks and in strengthening its financial literacy efforts among all Filipinos nationwide. Nonetheless, there seems to be a need for greater collaborative efforts among other national government agencies in expanding the usage of digital finance in the country. The government, through BSP, in collaboration with the private sector should continue to support and test competitive business models by companies that introduce innovations in the digital financial market. Having a financial market and business environment that is dynamic will be conducive to progress in digital finance.
- The law to implement the national ID system is currently being reviewed in the Senate. If successfully legislated, this will help facilitate the inclusion of the unbanked Filipinos in the digital economy. Meanwhile, forward-looking, the private sector can explore investing in innovative methods of identification, such as biometric scans.
- The interoperability could be a source of concern in the future since this affects the costs of service provision. Regulators must be wary of its potential implications especially to the consumers and in pursuing financial inclusion.

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Annex A. Profile of FGD Respondents

The focus group discussion (FGD) was conducted with the members (i.e. clients and agents) of the CARD Bank. All of these members are registered in the recently launched mobile application of the Bank branded as, "konek2Card" or "k2C". The FGD was conducted in two parts – the first one was with the agents, who are also users of the mobile application and the second one, with the users only. The main objectives of the discussions are to determine the members' receptiveness in using digital financial services, usage behavior, challenges and issues, and the likelihood to continue using the k2C.

Profile of the Respondents

The total number of FGD participants[30] is 37 who are all active members and registered to the k2C. Looking at their educational background, most are at least high school graduates, of which three respondents have attained post-graduate degree (Table 1). Majority are also married (92 percent), while the remaining are either widowed or single.

Table A.1

Level of Education	
Elementary Graduate	2
Some High School	4
High School Graduate	9
Vocational Graduate	2
Some College	9
College Graduate	8
Post-Graduate Degree	3
Total	37

As for the job or occupation, most of the participants have their own "sari-sari" stores / neighborhood sundry stores (40.5 percent) while the rest are engaged in direct selling / buy and sell, selling of electronic mobile load and digital financial transfer services (e.g. Smart Money Padala). This implies that majority of the participants acquire their income from their own businesses (Table 3), while a considerable number relies on remittances from family/relatives and friends and from wages / salary from the companies they are employed in.

Table A.2

Job / Occupation	
Sari-sari store (owner)	15
Direct selling/Buy and Sell (e.g. cosmetics, chicken, vendor)	5
E-load / Smart Money Padala	4
Computer shop rental	3
Family Business (i.e. small piggery, rental)	3
Business woman	2
Housekeeper / Care Taker	2
Professional (i.e. Architect)	1

[30] Originally, the total number of invited participants was 40. However, due to unforeseen circumstances, only 37 participants arrived.

Job / Occupation	
Farmer	1
Sewist	1
No job	3
No response	2

Table A.3

Source of Income	
Income from own business	28
Pension	2
Remittance	7
Receive wages or salary from a company	5
Rental income	1
No response	1

Meanwhile, 19 out of the 37 participants (51.4 percent) have been clients of CARD Bank for more than 5 to 10 years and 7 have been members for more than 10 years now. Their reasons for opening bank account are for savings (31 respondents) and loans (17 respondents) which will be primarily used for their businesses and tuition of their children. Notably, there were 4 participants who answered that one of their main consideration is having an insurance.

Table A.4

Years of Membership	
0 to 1	2
Greater than 1 to 5	9
Greater than 5 to 10	19
Greater than 10 to 20	6
20 and above	1
Total	37

Table A.5

Reason/s for Opening Bank Account	
Savings	31
Loans (e.g. business)	17
Insurance	4
No response	2

Annex B. Digital Finance in the Philippines: A SWOT Analysis

Strengths	**Weaknesses**
Regulators: • Main regulator (i.e. BSP) is very supportive of responsible digital innovation in pursuit of financial inclusion – necessary regulations are in place ***Providers:*** • Strong collaboration with the government toward achieving financial inclusion (e.g. programs such as "Lendr" and "KasamaKA") • Number of e-money accounts has been growing (i.e. from 9.4 million registered accounts in 2015 to 11.4 million in 2016) ***Clients:*** • Filipinos are generally tech-savvy and can easily adapt to technological change	***Regulators:*** • Slow implementation or lack of actions in terms of addressing expensive and poor internet performance especially in far-flung municipalities • Lack of necessary infrastructure to implement the national ID system which serves as a major facilitator to digital financial inclusion ***Providers:*** • Banks may need to improve their technical infrastructure to protect the privacy of its users – this is necessary to increase the trust among the unbanked clients ***Clients:*** • Some may not have the necessary gadget to conduct digital transaction
Opportunities	**Threats**
Regulators: • Ongoing digital financial literacy programs of the BSP among Filipinos ***Providers:*** • Presence of greater market opportunities /demand: About 35% of the municipalities in the Philippines remain unbanked which translates to more than 50% of adult Filipino who do not have bank account[31] ***Clients:*** • Filipinos are generally tech-savvy and can easily adapt to technological change • Increasing use of the internet by Filipinos	***Regulators:*** • Continued poor performance of the telecommunication companies • Continued slow implementation of relevant government programs such as the National Broadband Plan • Security and privacy breach of clients • Issue on interoperability • Consumer protection ***Providers:*** • Slow-to-adapt service providers – some of the MBOs / rural banks who largely cater low-income individuals may not have the necessary capital and technical capacity to invest on digital mobile services • Security and data privacy breach • Despite growing number of registered e-money accounts, utilization remains low. ***Clients:*** • In the case of those who rely on cash agents, fraud or mismanagement of money (e.g. deposits) can occur on the side of the agents.

[31] http://www.bsp.gov.ph/downloads/Publications/2017/FIDashboard_3Q2017.pdf