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Barriers to Mobile Money Penetration in the New African Trade Zone: A study of Ghana and Kenya

Abstract

The blueprint for e-payments is an initiative of the Smart Africa Alliance that aims to drive forward continental trade and digital commerce by unlocking the major challenges faced in making intra-continental cross-border e-payments. Intra-African trade, in general, and e-commerce, specifically, is on the rise and it is expected to deliver immense benefits to African livelihoods and the overall economy. E-payments are fundamental to the full-fledged development of e-commerce. Payment is evolving in Africa, not only through mobile payment platforms, but also through regional integration efforts in real-time gross settlement frameworks, which aim to drive down costs, allow payments in local currencies, and reduce transaction processing time. Rising upon this context,

COVID-19 has further accelerated the need for innovative ways of deploying cross-border retail payments.

Digital strategies are gaining importance in national policy agendas across Africa. Strategies such as Ghana's Digital Acceleration Project, Rwanda's Smart Rwanda Master plan, Kenya's Digital Economy Blueprint, Egypt's E-Commerce strategy, Nigeria's Digital Economy Policy and Strategy, and Mauritius' Digital Government Transformation Strategy Framework have been launched with e-payments and digital business as emerging recurrent pillars. Further, stakeholders have called for a pan-African Digital Economy to facilitate, inter alia, the development of regional markets, harmonisation of policies and regulations, to advance continental interoperability of payment systems and best practice sharing, particularly, in the context of the African Continental Free Trade Area (AfCFTA).

The successful history of Africa's mobile-first payment landscape strengthens the credence to shape an African solution. African consumers have experienced a leapfrog of transitioning directly from cash to mobile payments without ever owning a plastic card. According to estimates, mobile payments revenue would rise from USD 3.5 billion today to between USD 14 billion and 20 billion USD by 2025. The ultimate size of the market across Africa could be as high as 850 million customers, supporting about USD 2.5 trillion to USD 3 trillion in transaction volume and 25 billion USD to 30 billion USD in yearly revenue from the financial transactions alone.

Introduction

A country's mobile payment system is the complete matrix of institutional infrastructure arrangements and processes for starting and transferring monetary claims in the form of commercial and central bank liabilities (Bank of Ghana, 2012). Virtual money has made it feasible to do business using electronic cards such as credit cards, debit cards, ATM cards, smart cards, and so on. The term "virtual" refers to them all (Adaliwei, 2011). Mobile payment systems are a type of virtual money that has shown to be profitable in underdeveloped nations like Kenya (Sultana, 2011). Without a doubt, mobile payment systems have altered society in terms of the simplicity, interconnectedness, and efficiency of daily operations. Practically, mobile payment systems have revolutionized the industry and economy in day-to-day activities. The possibility provided by the payment system represents a life-saving aspect of the situation. Due to the growing popularity of mobile devices and the rapid

growth of mobile commerce activities, Mobile payment systems have become important tools in a variety of transactions (Ondrus & Pigneur, 2006). Although mobile payment systems have not yet achieved widespread adoption, they are utilized by a considerable fraction of active mobile users in several industrialized nations. In Kenya, transactions via mobile payments and phones represent 87% of the country's GDP; in Ghana, they account for 82% of GDP (Creemers, et al., 2020).

400 million users in sub-Saharan Africa are already using mobile payment banking systems to manage $300 billion in mobile money transactions, resulting in $200 billion in client fees for mobile banking. (These numbers do not account for COVID-19's effects.) The market for mobile payments may have between 650 million and 750 million users by 2025. If that were to occur, mobile payments revenue which typically accounts for around 1.1 percent of total transaction volume would increase from $3.5 billion to between $14 billion and $20 billion, up from its current level of $3.5 billion. Up to 850 million consumers might make up the whole market in Africa, supporting $2.5 trillion to $3 trillion in annual transaction volume and $25 billion to $30 billion in income from financial transactions alone. Furthermore, the late 21st century has witnessed revolutionary growth in information technology management and information system infrastructure networks (ARIF et al., 2020). Cash payment systems have become a habit and have been for a long time. Payment for retailed financial services is performed daily and it's the financial services with the least regulated feature (Nguyen et al., 2020). In recent decades, traditional trading services with a cash payment system have been widely adopted by companies in the car, electronics, and technology industries to retain old customers and promote sales of new products (Cao et al., 2020).

Ghana and Kenya have made significant contributions to the expected $15 trillion to $20 trillion in worldwide mobile financial services transactions in 2020. Kenya and Ghana account for a large portion of the fintech industry in Africa thanks to their relatively developed mobile payments industries. But both nations had to overcome significant obstacles over the years to become the best in Africa for fintech, avoiding a variety of legislative and network bottlenecks that posed a danger to innovations in their infancy.

Mobile Payment Systems and Digitalized Trade: The Ghanaian Experience

The payment system in Ghana has significantly advanced recently and is still developing to meet the demands of the nation as it develops. In Ghana, Mobile Money (MM) is steadily replacing cash as

the primary method of payment for the unbanked and underserved. The fast expansion of mobile phone use, particularly in rural areas, is a contributing factor to Ghana's quick development in MM usage. Recent advancements in phone functionality, chip and mobile network technology, and improvements in Point-Of-Sale (POS) infrastructure are the foundation for the continental expansion of MM among the unbanked and underserved. These changes have strengthened the climate for MM solutions and united many stakeholders in the market, including banks and mobile money providers, to launch MM operations. Although Ghana has made great strides in opening up access to financial services through its financial inclusion policy adaptation program, a sizeable percentage of the population still lacks either access or the ability to take advantage of what is offered. The government and people of Ghana will be able to profit from the various advantages that come with payment digitalization if the process of digitalization is sustained, maintained and advanced. The Better than Cash Alliance helped Ghana's Ministry of Finance to develop the mobile Payments Roadmap to actualize the government's objective, facilitate, and expedite the switch to digital payments.

Ghana has made and is still making progress in the direction of greater payment digitalization. Though modest by international standards, Ghana's rise in mobile payments has been made feasible by the payment system's inherent capabilities as well as developing trends that offer chances for increased digital growth. To support the transition to a "cash-lite" economy, the nation has specifically developed essential foundational financial market and payments infrastructure, such as an Automated Clearing House (ACH), Real-Time Gross Settlement System (RTGS), Electronic Funds Transfer (EFT), GIFMIS system, Central Securities Depository with a trading platform, and ATM interoperability within the periods of 2012 - 2020. An interoperable switch that enables payments between financial institutions and mobile money accounts was recently established by the government (2021). Mobile money is by far the most popular method of digital payment, both in terms of volume (981.6 million transactions in 2017) and value (GH155.8 billion). In reality, mobile money transactions made up 90% of the 1% of digital payments by volumes that were made in 2016 as reported by the Diagnostic Report. In terms of value, they made up more than 77 percent of the 37 percent of transactions at that time that were started by digital instruments. However, it should be highlighted that most mobile money transactions involve domestic remittance transfers and airtime top-ups.

In terms of user preferences for digital payments, debit cards and direct credit (the electronic transfer or deposit of money by a payer straight into a payee's bank account) stand in second and third place, respectively. When compared to other payment methods in 2017, Direct Credit transactions showed notable figures (6.1 million by volume and GH24.3 billion by value), while debit cards also achieved respectable numbers (60.4 million transactions valued at GH17.8 billion). Even though checks and cash are still widely used, digital financial services are slowly growing in Ghana, following worldwide trends. By the end of 2016, transactions had virtually quadrupled while registered users of internet banking had increased by 14% over 2015. According to figures from 2017, the value increased in 2016 by 43.7%.

Users of mobile banking increased by 50%, while the number of transactions increased by 25%. It should be emphasized that whereas online banking transactions are mostly driven by business payments, mobile banking transactions are primarily driven by consumer purchases. Over the two years, 2015-2017, other electronic payments (such as debit cards, credit cards, and e-zwich) also experienced growth in both the number and value of transactions. As various banks and fintech launch marketing initiatives to promote the adoption and usage of their digital payment systems, growth is predicted to continue. The public's mentality and behavior around how they make payments will also be shaped by some government announcements boosting the usage of digital payments.

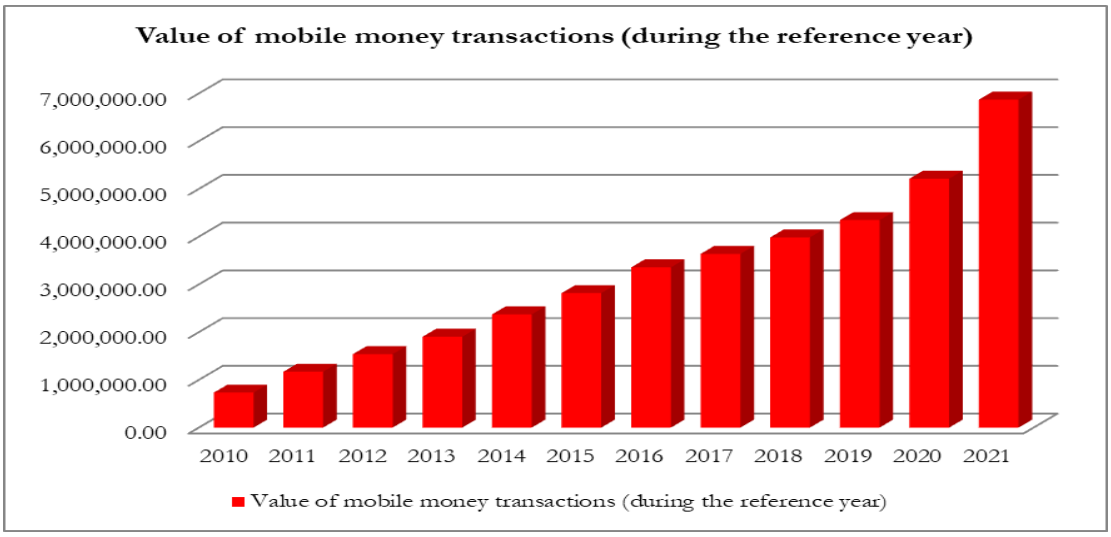
Payment System Statistics in Ghana 2012-2020 (Value in Million GHC)

	2014	2015	2016	2017	2018	2019	2020	2021
Ghana Interbank Settlement (RTGS)	58,312.16	1,032,544.00	1,670,369.46	2,083,846.27	1,963,465.27	2,106,117.85	2,433,537.47	1,922,865.47
Cheque Cleared	113,698.39	131,189.70	152,390.42	179,555.47	203,465.32	173,623.25	177,625	203,854
Automated Clearing House -Direct Credit	10,815.21	15,075.07	19,245.65	24,327.26	30,226.94	7,662.89	6,123.26	-
Automated Clearing House -Direct Debit	31.48	70.91	127.01	126.28	139.15	239.64	1,130.69	1,556.55
E-Zwich Transactions (Biometric Payment Card)	272.70	922.90	2,362.96	3,431.49	5,651.14	6,308.37	9,033.25	7,913.80
National Switch (Gh-link)	183.32	305.14	447.04	603.43	543.74	329.23	329.7	427.30
GhIPSS Instant Pay (GIP)	-	-	-	83.23	534.04	3,456.89	9,146.76	31,357.40
Mobile Money Interoperability	-	-	-	-	212.89	-	-	-
Mobile Money	12,123.89	35,444.38	78,508.90	155,844.84	223,207.23	309,352.25	564,155.90	978,323.79

Source: BoG, 2021

Mobile Payment Systems and Digitalized Trade: The Kenyan Experience

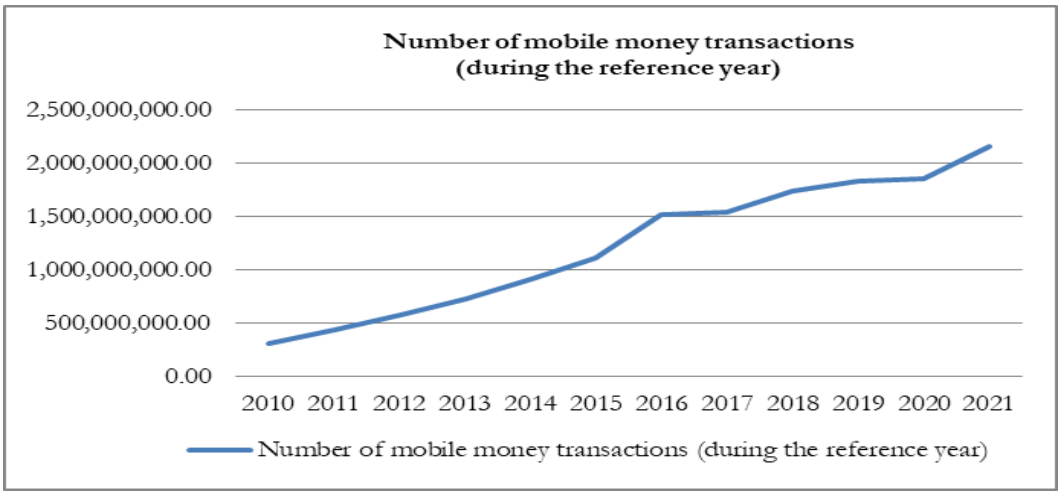
With the inception of the paradigm shift to a cashless economy in most of the developed economies, there was a need for any given nation to adopt automation of its payment systems. This has been noted to increase convenience and reduce social ills such as corruption which decreases frictions in the economy. This in turn spurs economic growth. Kumar & Raheja (2012) denoted that payment system is rated based on how well it can integrate with various types of e-commerce platforms which include business to business, business to consumer, consumer to consumer, consumer to business, and lastly, person to government. The introduction of mobile money, pioneered by Kenya's Safaricom with the M-PESA brand, has resulted in considerable financial inclusion for many (which was not previously the case). Mobile phone services currently account for 5.7 percent of the continent's GDP and grew to 8 percent in 2020.



Source: IMF-Financial Access Survey, 2022

This economic expansion is supported by strong mobile penetration rates of 90%. Reduced smart phone and broadband prices have increased penetration and access. Mobile money payment has gradually increased from Kes.643,905 in March 2007 to Kes.297.437 billion in April 2017 while RTGS has increased from 10,575 transactions worth Kes.624.525billion in January 2006 to 396,353 transactions worth Kes.2.379 trillion in April 2017 as reported by Central Bank of Kenya (2017).

This shows a significant increase in the amount transacted for the highlighted periods. Holding all other factors constant, given that with a significant change in the value of transactions, the change may not necessarily move with the country's economic growth rate. Large swaths of Kenya's population use mobile money extensively, which has had a knock-on impact on the digital environment. According to the Central Bank of Kenya statistics, mobile payments made through the agents totaled $5.8 billion, up 58.7% from the $3.6 billion reported in January 2020. As of January 2021, there were 287,410 registered mobile money agents and 66.59 million registered mobile money accounts, respectively. Due to this expansion and demand, M-Pesa Global, an international money transfer service that will operate in 167 countries by 2020, had to be established.



Source: IMF-Financial Access Survey, 2022

Today, compared to its neighbors, Kenya has exceptionally high financial service availability, which has been primarily ascribed to the acceptance of mobile payments there. M-Pesa is well known for its high penetration rate, which has not yet been effectively copied elsewhere. With a significant percentage of unbanked people, strong mobile penetration, the usage of USSD, the ease and comfort of the service offering, minimal KYC requirements, and, of course, Safaricom's stranglehold on the market, Kenya looks to have become the spot for the big boom of mobile payments. The facts cannot be avoided that, Kenya serves as the model for mobile payments. BAB reports that M-Pesa had 260,000 operational retail locations, over 136,000 agents, and 27 million registered users in 2017 alone. Before 2015, more people had bank accounts than mobile money accounts, however, this ratio has since altered, with mobile money accounts outnumbering bank accounts by more than 30%. By 2016, 97 percent of adult Kenyans had a mobile money account, and nearly seven out of ten had an account with a formal financial institution (bank and/or microfinance account).

Barriers to Payment Systems

Barriers to payment systems may be essentially divided into two categories: consumer acceptance and system effect and usage of such systems in social, economic, and cultural contexts (Wang, 2012). This paper by the Ghana International Trade & Finance Conference – GITFiC focuses on the barriers to accepting mobile payment systems. Jia et al. (2015) discovered that individuals who are exposed to mobile payments are likely to look for information on mobile payments. They contend as well that consumer information searches and exposure to mobile payments both raise customer

trust in these systems. For non-users to be persuaded to utilize mobile payments, their level of trust in payment systems is more crucial than it is for users (Jia et al., 2015) to provide a comprehensive picture of the success criteria for payment systems. Marketing is one of the key elements in a payment system's success. A payment system must immediately gain widespread adoption due to the network effect, which can only be accomplished through intensive marketing efforts. To build a favorable perception of the payment system and win the public's trust, marketing is also crucial. Technical security is a must for a payment system, but ultimately, the user's impression of the system's security will determine its success (Henkel, 2001).

Within the aforementioned study, payment system qualities include convenience, compatibility, and reachability (Kim et al., 2010). Barriers to mobile payment systems are also influenced by trust and perceived-risk through perceived-ease and perceived-usability (Chandra et al., 2010; Shin, 2010). If consumers believe their ideas and conduct are consistent with user expectations, they are more inclined to use mobile payment systems. Additionally, it was argued that the perceived value and security of mobile payment options had a favorable effect on consumers' intentions to use them. Mobile payment usage is influenced favorably by subjective norms in terms of peer group influence. Businesses in the mobile payment industry believe that the biggest obstacle to the adoption of mobile payments is customer acceptability (Edgar Dunn and Company, 2007). Thus, one of the main concerns is how consumers will accept new technologies, and we must consider this when determining if the intended users of new mobile payments will utilize them. Dewan and Chen (2005) and Kreyer et al. (2003) found that customers are typically interested in adopting mobile payment apps, but further study is required to identify the precise variables that affect consumers' decisions to use mobile payments.

In a qualitative study of consumer adoption of mobile payment systems, Mallat (2007) identified several barriers, including perceived risks, premium pricing for mobile service payments, the complexity of payment processes, low adoption rates, perceived incompatibility with high-value purchases, and lack of merchant acceptance. Findings showed that confidence in mobile payment service providers and merchants decreased perceived risks of utilizing mobile payments, suggesting that more dependable service providers had an advantage over smaller rivals. Cyril et al. (2008) looked at security issues that affect the acceptance of mobile payment systems. Their research

focused on how trust affected consumers' intentions to utilize mobile payment systems. The uptake of mobile payments has been significantly hampered by security concerns.

Another issue with mobile payments is their compatibility with foreign countries. Based on present standards, users won't fully use mobile payments unless standardized interfaces are defined. Only when customers can execute transactions using their smart phone rather than the rudimentary traditional channels will they begin to appreciate the advantages of utilizing it as an electronic wallet. Consumers won't need to install new software each time they purchase once a worldwide standard is adopted; instead, they will be able to utilize any program for doing so. The purchase procedure will be greatly streamlined as a result.

Conclusion

The role of payment systems is changing from that of a conduit for the movement of money to that of a much larger, interconnected network for the transfer of other types of value. The pressures on the current infrastructure are rising quickly as the global economy transitions more and more toward digitalization. Processing advanced payment requests quickly and securely require a solid, scalable basis. Since Ghana's payment systems fall behind those of many other industrialized nations (but have seen a sharp advancement in the last four years), the financial services sector must look for ways to improve the payment rails. The designs suggested in this paper by the Ghana International Trade & Finance – GITFiC are feasible but would need a significant amount of industry cooperation. Individuals' confidence and habits about the use of mobile payment systems have grown as a result of the development of more sophisticated technology that enables mobile transactions and makes them transparent and more convenient.

It is clear from banking and commerce as well as from the majority of mobile devices on the market that customer behavior is shifting away from traditional payment methods and toward more sophisticated online payment systems. The use of mobile payment systems will, unavoidably, increase to surpass or even replace cash and other cashless payment options, as it is obvious that mobile devices have become an unavoidable part of almost everyone's life and the opportunities this technology enables for online and offline payment regarding convenience and security. The advancement of the growing market for mobile payments might be facilitated by improving the

compatibility with a wide variety of consumers, utilizing cutting-edge technology, establishing common standards for diverse service providers, and resolving security and privacy concerns.
This paper by GITFiC aims to cover a broad range of potential problems with the use of electronic payment systems and consumer acceptance.

Recommendations

1. This paper proffers some recommendations to governments, businesses, and individuals interested in adopting mobile payment systems, especially in developing countries. First and foremost, business owners must find a way of encouraging consumers to accept mobile payment as a payment option by adjusting their mode of payment from cash or cards to paying through mobile phones.

2. This paper indicates that consumers place much emphasis on the issue of security. Perceived security is an essential factor in the acceptance of new technologies by consumers. Due to this perception, businesses and all other agents involved in the implementation of mobile payment systems must see to the implementation of adequate security measures to win consumer trust in the system and increase the chances of adoption and use of mobile payment systems as a payment method.

3. Additionally, governments, businesses, and organisations should encourage the acceptance and use of the m-payment system to complement existing payment methods and augment consumers' payment behaviour. Moreover, managers and marketers must recognize the implication of cultural values on intention toward M-payment system adoption.

4. The growing digital divide between the rural (or remote) and urban households in most developing countries is a greater concern for industry, successive governments, and policymakers. The lack of digital literacy causes such digital divide, which inhibits technological advancements, including the adoption and use of mobile payment systems and associated services by a wider segment of the population. With that in mind, industry, in collaboration with the policymakers and regulators, should adopt a pronged strategy. Industry should improve the digital literacy of the less privileged segment of society to

promote inclusive development and the wider and more frequent use of mobile payment systems.

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