Dec 14th, 12:00 AM

How do Fintech Firms Address Financial Inclusion?

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Short Paper

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Abstract

Financial technology (fintech) firms are transforming the financial sector with new innovative services. Indeed, fintech firms have established themselves as viable addition to the traditional financial structure and are potentially playing an important role in addressing financial inclusion. However, hitherto there is limited understanding of how fintech firms address financial inclusion. In this paper, we present a preliminary phase of research and analysis on a case study of fintech start-ups in Ghana. We address the research question: "how do fintech firms address financial inclusion?" Informed through activity theory, our preliminary findings show that fintech firms act as innovators and aggregators, leverage existing infrastructure of incumbents and deploy cooperative strategies comprising elements of competition and cooperation to address financial inclusion. Based on the findings, this study develops a fintech driven financial inclusion model that explains how fintech firms work towards addressing financial inclusion.

Keywords: Activity Theory, Developing Countries, Fintechs, Financial Inclusion, Innovation

Introduction

Globally, there is uneven access to financial services with 1.7 billion unbanked individuals (World Bank 2018), leading to high levels of financial exclusion (Demirgüç-Kunt et al. 2018). To address this problem, financial technology (fintech) firms are offering novel digital financial solutions as alternatives to traditional banking services. Traditionally, the financial sector in most countries has been dominated by incumbent banks. In recent years, fintech start-up firms have gained increasing research and practical attention due to their potential for addressing the challenge of financial inclusion[1], especially in developing countries. While incumbents initially viewed the rise of fintechs as a threat to their existence, they have been quick to respond with their own digital financial services and partnered with the start-ups. As a result, there is a complex relationship between 'old' and 'new' firms (Gozman et al. 2018). Successful examples of digital financial services include MPESA in Kenya (e.g., Morawczynski and Miscione 2008; Oborn et al. 2019), bKash in Bangladesh and N26 in Europe. In spite of these successes, there remains a large number of unbanked persons around the world (World Bank 2018).

While some fintech firms have been successful in addressing financial inclusion, little is known about *how* and *why* some fintech firms achieve this outcome whilst others fail to do so. This gap in the literature can be attributed to a number of issues. First, the majority of studies have largely focused on the evolution and development of fintech firms (e.g., Gozman et al. 2018; Leong et al. 2017). Second, studies have focused on

[1] Financial inclusion refers to effort of making financial services accessible and affordable to individuals and businesses

how incumbent banks are responding to disruption by fintech (e.g., Gomber et al. 2018; Muthukannan and Gozman 2019; Oshodin et al. 2019). Third, despite the promise of fintech for developing countries (Realini and Mehta 2015) the academic literature has focused on developed economies where issues of financial inclusion are less prominent. Notwithstanding the contribution from these studies and given the dynamic nature of relationships in financial environment, it is important to understand how fintech firms overcome the complexities in their ecosystems to address financial inclusion.

Therefore, this study is guided by the research question: *"How do fintech firms address financial inclusion?* Through a case study of fintech start-ups in Ghana and informed by the theoretical lens of activity theory, this study develops an initial fintech driven financial inclusion model that explains how fintech firms work towards addressing financial inclusion. In the next section, the study's background and grounding in activity theory is discussed. Following this, we outline the study's setting and design as well as data collection and analysis. We then present the study's findings and conclude with a discussion of the contributions and how this research will be developed in the future.

Background and Theoretical Foundation

Large parts of the world remain cut off from institutional financial services (Senyo and Osabutey 2020) and the lack of access to formal instruments for saving or borrowing compounds poverty (Friedline et al. 2019). Reasons for this include high cost of using services (Senyo et al. 2016), relevance of services and challenges to obtaining identification etc (Masiero and Prakash 2019). In many cases, bank accounts may be non-transactional, meaning they can only be used for savings and requires travel to branches or post-offices to make deposits and withdrawals. As a result, semi-formal and informal institutions for microfinance and peer-to-peer lending have traditionally filled the gap. Many scholars, development practitioners and governments believe that the ability to save, borrow and exchange money is the key to not only helping escaping poverty but to having access to financial tools that allow people to pay, be paid and improve their quality of life (Demirgüç-Kunt et al. 2018; World Bank 2018). Recent innovations to tackle financial exclusion combine new grassroots models, digital technology (and in particular mobile technology) and branchless banking to deliver the promise of profits for providers, affordability for low income customers and scalability (Realini and Mehta 2015).

Typically, fintech services are offered by extending financial services through mobile banking and payments, micro-credit loans and micro-insurance (Realini and Mehta 2015). The use of mobile technology to access fintech services allows individuals to shrug off limitations of inaccessible branch locations and high-fees (Senyo and Osabutey 2020). To scale-up these services, fintech firms such as MPESA, Klarna, Square and Motif have tapped into the gaps left by the mainstream finance sector—in both the developing and developed world—to provide customers newer, cheaper, easier, faster and more efficient ways of storing and transferring value (Senyo and Osabutey 2020). These fintech firms challenge the established financial sector norms in terms of relationships, governance mechanisms, products, services and markets (Gulamhuseinwala and Lewis 2015). Incumbent financial institutions are also responding by reinventing their products, processes and business models and through strategic partnerships with fintech start-ups (Drummer et al. 2017).

Research into these innovations show that they do not exist on their own, rather they create, and are part of, an ecosystem (Senyo et al. 2019) than involves governments, telecommunication firms, incumbent financial institutions, merchants, start-ups and micro-enterprises as well as individuals at the bottom of the pyramid (Leonardi et al. 2016; Oborn et al. 2019). The combination of new business models, new ecosystems and technology helps to overcome questions around how basic financial services be scaled-up, which is common to ICT innovations in developing countries (Foster and Heeks 2013). In the developing world context MPESA in Kenya remains the shining example of the potential of fintech and absorbed much of the academic interest (Morawczynski and Miscione 2008; Oborn et al. 2019). However, there remains limited understanding of how fintech firms are contributing to addressing financial inclusion.

To understand how fintech firms' activities are geared towards addressing financial inclusions through digital technology as well as how these firm activities exist within a wider network of activities we turn to activity theory (Engeström et al. 1999). We take the view that to understand how fintech firms leverage digital technology it is necessary to take a multi-level perspective that accounts for the range of actors involved as well as how the firms overcome cultural-historical practices and norms and long-standing barriers to financial access. We draw on Engeström's (1999) development of activity theory, which has been extended into the field of information systems (Karanasios 2018) for the study of interaction between digital technology and organisations (e.g. Allen et al. 2013; Slavova and Karanasios 2019). Activity theory frames the enactment of technology as socially and culturally situated through purposeful human activity (Karanasios 2018). It does this by providing theoretical concepts to analyse the inter-relationships between individual and organisational activities as well as between networks of activities.

A typical activity system representation is provided in Figure 1. Relevant to the context of this study, it shows how at the firm level, a fintech firm (the subject), enacts fintech technology (tools) to act on an object (the financially excluded, or unbanked). This process is government by cultural-historical rules and norms, a wider community of actors (such as regulators) and roles (division of labour). The activity aims to achieve an outcome, in this example it is financial inclusion. However, activities do not exist on their own or *tabula rasa*. Rather, they are part of network of intertwining, connective and disconnecting activities and embedded. This is represented in Figure 1 by two activities acting towards a shared object (as well as their own independent objects). However, this process is not harmonious, rather all activities, whether at the firm activity level or network level are infused with contradictions (Engeström et al. 1999).

As contradictions are revealed, they expose the dynamics, inefficiencies, disturbances, and importantly opportunities for change and action (Blackler 2009; Helle 2000), precipitating the development of an activity. Contradictions are '*historically accumulating structural tensions within and between activity systems*' (Engeström 2001, p. 137). They can be disturbances and conflicts but they can also be part of the process of innovative attempts to progress, change and overcome other contradictions (Engeström 2001). Analytically, contradictions manifest in the form of breakdowns, disputes and conflicts within and between elements of activity systems (Karanasios 2018; Malaurent and Karanasios 2020) i.e. between people, collectives, technologies and practices (Engeström et al. 1999). This provides an analytical mechanism to uncover how fintech firms' activities are in contradiction with their desired outcomes.

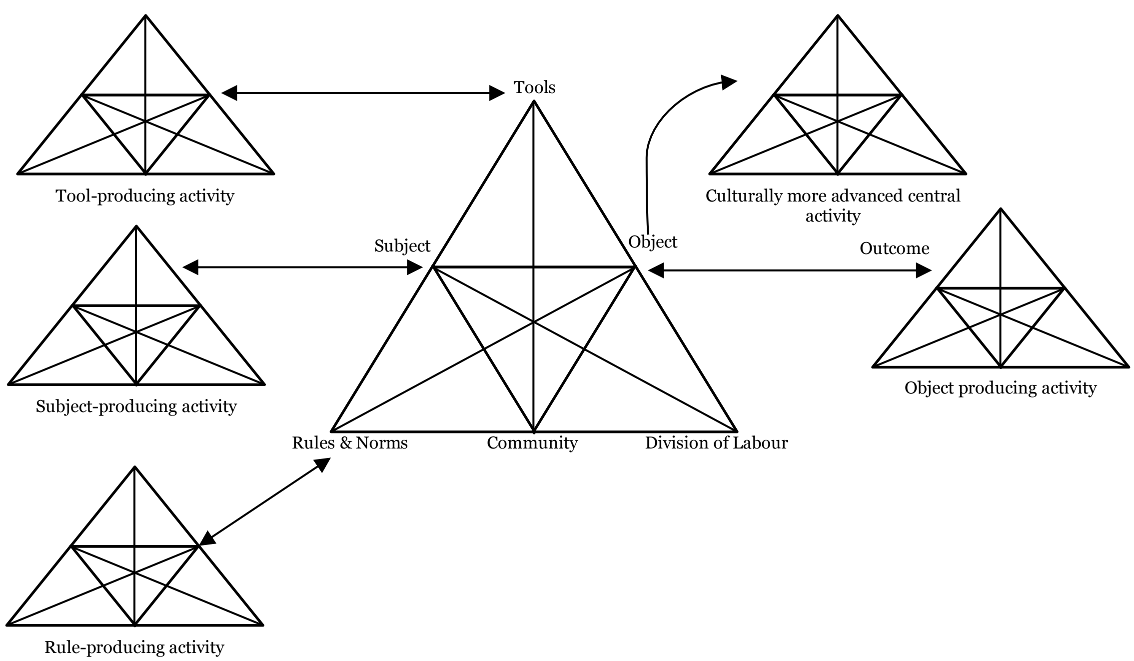

Figure 1. Activity Networks (Adapted from Engeström 2015 p.71)

Methodology

Research setting and design

This study focuses on fintech firms in Ghana, a middle-income African country. Though Ghana was a late adopter of fintech innovations, its payment landscape has witnessed significant growth in the last decade (Mattern 2018). This growth can be attributed to the proliferation of fintech firms leveraging mobile phones for financial services referred to as mobile money. With a mobile phone registered with mobile money services, Ghanaians are able to conduct financial transactions such as payment for goods and services, purchase of insurance services and access micro-loans (Senyo and Osabutey 2020). In 2009, Ghana had only 350,000 mobile money users. However, as at the year 2018, mobile money account ownership increased sharply to 39% of the adult population (Demirgüç-Kunt et al. 2018). As such, Ghana has emerged as one of Sub-Saharan's Africa's fast-growing mobile money markets (Mattern 2018). These unique characteristics motivated the selection of Ghana as the empirical focus for this study to understand how fintech firms are addressing financial inclusion. Given the role of fintech firms in addressing financial inclusion is nascent and under-explored in the literature, the study demanded a qualitative case study approach (Walsham 2006). The qualitative case study approach supports discovery in under-research and complex phenomenon (Yin 2009). Importantly, this approach ensures understanding of contextual sensitive issues.

Data collection

As the first phase of a larger research project, we collected data using semi-structured interviews from fintech firms in Ghana. We adopted a purposive sampling technique, whilst remaining open, to obtain a richer understanding of how fintech firms are addressing financial inclusion in Ghana. Specifically, we conducted 13 interviews with six fintech firms providing numerous financial services such as payment aggregation, mobile money payment services, micro-loans, utilities payment and online payment solutions. The selection of the firms supports our theorising because they were start-ups established with the aim of providing financial services through digital technology to the bottom of the pyramid and unbanked. The interviews were conducted in English and lasted on average for 30 minutes and the questions focused on their genesis, development, operational model and relationship with other actors in the financial sector. A summary of the fintech firms interviewed is provide in Table 1.

Firm Firms	Years in operation	Main financial services	Role of interviewee	No. of interviews
Fintech Firm 1	3 years	Mobile money aggregation and merchant payment integration	Chief Operations Officer	2
Fintech Firm 2	6 years	Utilities payment solutions such as water, electricity and cable TV	Chief Executive Officer	2
Fintech Firm 3	5 years	Utilities payment and online payment solutions	Commercial Manager	2
Fintech Firm 4	4 years	Mobile money integration and utilities payment	Developer	2
Fintech Firm 5	8 years	Integrated payment solutions including card and mobile money	Chief Operations Officer	3
Fintech Firm 6	6 years	Micro-loans	Commercial Manager	2

Table 1. Fintech firms interviewed

Data Analysis

Drawing from our theoretical lens of activity theory and exploratory nature of this phase of research, we followed open-coding data analysis. The coded data was reviewed and discussed in an iterative process and used as a means to group the open-codes into more meaningful categories. Using this as a process of discovery, we moved to use of activity theory as our analytical framework. Specifically, we identified (1) activity systems and (2) the roles played by fintech firms in addressing financial inclusion. Through this analysis, we were able to map out and understand the relationships and contradictions as well as tensions between and within activities to understand how the firm activities and use of fintech work towards addressing financial inclusion.

Findings

Based on our preliminary findings, we observe that the process by which fintech firms work towards addressing financial inclusion is a network of activity systems as presented in Figure 2. Specifically, we find that fintech firms focus on the interrelated activities of *developing fintech solutions, connecting with banks and telecommunication operators to address financial inclusion*. We discuss these two activity systems and the roles played by fintech firms in addressing financial inclusion in the ensuing subsections.

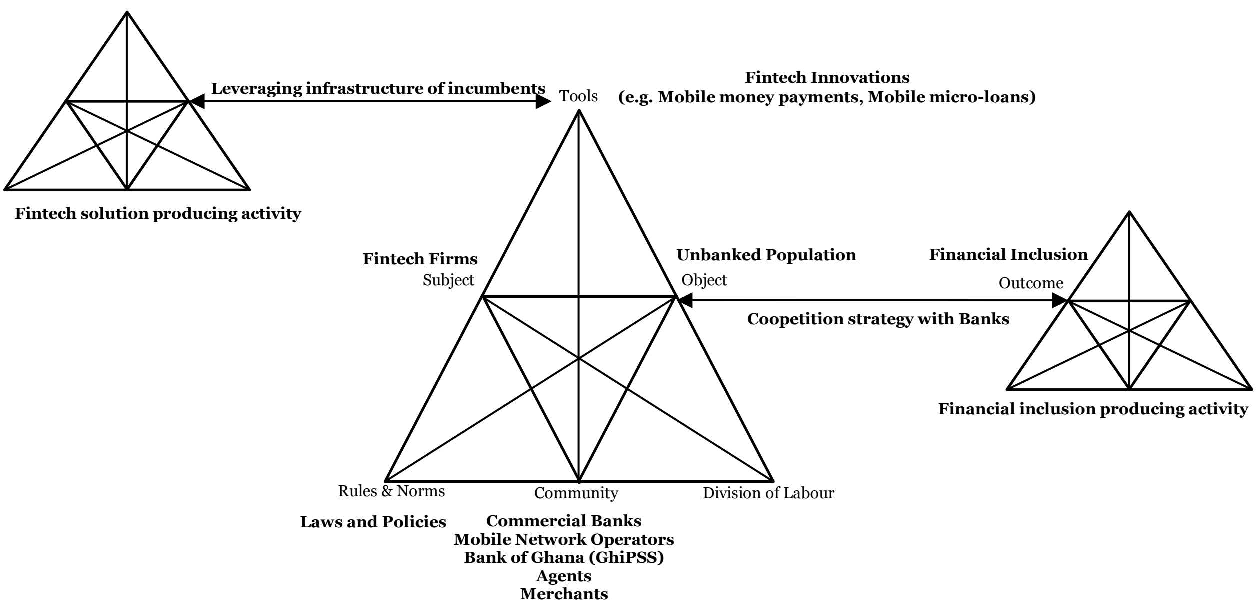

Figure 2. Model for fintech driven financial inclusion

Fintech activity systems in financial inclusion

From our findings and as presented in Figure 2, fintech firms leverage the infrastructure of incumbents in producing their solutions. Specifically, fintech firms leverage the mobile money platforms of mobile telecommunication operators to make available their solution. In Ghana, the majority of the unbanked population have access to mobile phone, but not bank account. Thus, to address financial inclusion, fintech firms leverage application programming interfaces (APIs) of incumbent mobile network operators as the base for their solutions. The chief executive officer of a fintech firm explained:

> *"We see the mobile network operators as strategic partners [...] we use their mobile money platform to reach the unbanked who are already on their networks. What we have created is a bridge between the financially included and the unbanked."* (Fintech Firm 2)

Based on the fintech solutions produced (left side triangle), fintech firms adopt coopetitive strategies in dealing with banks in the financial inclusion producing activity system (central triangle). Traditionally, banks were designated to provide financial services in Ghana. However, banks have not been able to provide financial services to most of the population, resulting in financial exclusion (this is a major contradiction that exists in the Ghanaian financial landscape and exacerbates poverty). At the same time, banks see the unbanked population as their potential customers. This contradiction manifested as tensions between actors in the financial community whereby non-traditional entities were better positioned to provide financial services. This fuelled the development of innovative financial services as a way to align the key capabilities of fintech start-ups and incumbents, leading to increased financial inclusion in Ghana. The chief operations officer of a fintech firm commented:

> *"The banks think the financial sector is their baby so when the fintech firms and mobile network operators wanted to enter into the industry, there were lots of resistance and this led to slow uptake of fintech in Ghana [...] at the beginning, there was no fintech law or policy to guide the sector so there were so many back and forth. Later, the Bank of Ghana came out with a policy that banks become the custodian of deposited funds before things took off..."* (Fintech Firm 5)

With the experience of resistance from banks in mind, fintech firms acting as subject in the activity systems resulted to a coopetition strategy in addressing financial inclusion. On one hand, fintech firms collaborated with the banks by using them as custodians of deposited electronic funds. On the other hand, the fintech firms competed with the banks for the unbanked population. A chief executive officer of a fintech firm explained:

> *"A lot of banks are going digital because of fintech solutions. They have seen that fintech firms are providing solutions they should have provided many years ago and now they are trying to play catchup. The banks are interesting because they are like 'coopetitors' because on one hand we rely on them because the law requires that the funds sits with banks and on the other hand, they are competing with us because some of them offer similar services."* (Fintech Firm 2)

The commercial manager of another fintech firm added:

> *"Our bank partners are happy with us as the eFunds are kept with the them. But for the banks who are not our partners we are seeing some acceptance with some wanting to switch to our solutions. The partnership with banks is not a simple conversation but banks are accepting that there is some value in a relationship."* (Fintech Firm 3)

The contradiction between banks and their inability to address the financially excluded led to the "reverse" collaboration between banks and fintech firms. Initially, fintech firms relied on banks to enter the financial sector. However, given that some banks do not have a strong technology base to reach the unbanked, they are now striking reverse collaborative relationships with fintech firms, leading to new forms of partnerships novel to the financial sector. With new strategic collaboration in place, banks are able to use digital solutions of fintech firm to reach the unbanked. The chief operating officer of a fintech firm summarised the views of others as follows:

> *" Collaboration is happening, we actually extend our services to the banks. Some banks are starting to realise that they are not strong on technology and a few of them are now more willing to engage with fintech firms to outsource some of their technical competences."* (Fintech Firm1)

Roles played by fintech firms in addressing financial inclusion

Fintech firms have become important actors in Ghana's drive for financial inclusion. Through a combination of infrastructure leveraging and coopetition strategies, fintech firms as a subject within the financial inclusion activity systems (right side triangle) are offering innovative financial services to both the banked and more importantly the unbanked. From our findings, we observe that fintech firms are playing the roles of *innovators and aggregators*, roles previously alien to Ghana's financial sector. As innovators, fintech firms have transformed the financial sector with innovative services that have contributed to addressing financial inclusion. For instance, fintech firms have developed mobile phone-based services such as micro-loans and utility payment solutions that are digitalised, quick, low cost and effective. While these solutions contradict the norms previously in the financial sector, they brought new ways to address financial inclusion. As a result, previously unbanked individuals now have access to financial services, thereby leading to higher financial inclusion. The commercial manager of fintech firm explained:

> *"Previously, people could not access small loans from banks because banks are not in most villages and people could not fulfil strict documentation requirements. However, with our services [mobile micro-loans], a user can request for a loan with their mobile phone and within a few minutes, they will have the money in their mobile money account [...] no need for collateral as compared to banks."* (Fintech Firm 6)

In another example of the role of fintech firms as innovators with new tension in addressing financial inclusion, the chief operations officer of a fintech added:

> *"Mobile money is currently across the country, and fintech firms are providing new services. We also assist banks to provide various forms of banking to previously difficult to reach segments, for instance we provide solutions that enable banks build a relationship with traditional Susu[2] groups, using mobile money these Susu groups can build a credit history which the banks can rely on to offer them micro-loans."* (Fintech Firm 3)

Fintech firms as aggregators have also transformed the payment landscape in Ghana by enabling electronic payment and seamless interoperability between actors, leading to greater financial inclusion. Previously, financial services in Ghana were largely limited to cash deposit and withdrawals which required an individual to physically visit the bank. Moreover, it was difficult to pay for products and services electronically and more difficultly remotely. In terms of electronic payment, fintech firms have integrated electronic payment through mobile phones into many products and services. As a result, users are able to transact electronically like purchasing airtime, payment for electricity and cable television services. A fintech developer explained:

> "*We specialise in mobile money aggregation, merchant payments as well as build and integrate payment products for financial institutions, insurance companies, universities and utility companies [...] with this aggregation, users can perform financial transactions without physically visiting these companies."* (Fintech Firm 4)

Furthermore, fintech firms as aggregators have enabled financial interoperability, leading to increased financial inclusion. Previously, it was difficult for people to send money across different mobile network operators. However, with the aggregation of mobile money services of major network operators, people are able to conduct financial transactions irrespective of their mobile network operator, leading to greater financial inclusion. The chief operations officer of a fintech firm narrated:

> *"We have connected to all three mobile money providers; we have created APIs which can be customised by merchants to enable payments via mobile money to their applications. We also enable payments for billers (e.g., Ghana water company, Ghana Electricity Company, purchase of airtime) using mobile money and bank accounts."* (Fintech Firm 1)

Another chief operation officer of a fintech added:

> *"The mobile network operators rely on fintech firms as aggregators to integrate the individual operators with others and then try to aggregate wallet transactions which are passed onto other players like banks to enable them offer holistic solutions to clients. It is based on this aggregation framework that Ghana Interbank Payment and Settlement Systems (GhIPSS) is providing mobile money interoperability which enables member institutions connect to multiple players via one node."* (Fintech Firm 5)

Conclusion and Future Directions

Though the current study is still ongoing, our initial findings provide some theoretical and practical implications. Our model explicates that fintech firms act as innovators and aggregators by leveraging existing infrastructure as well as adopt coopetitive strategies to address financial inclusion. While there are some prior studies on the role of fintech firms (e.g., Gomber et al. 2018; Gozman et al. 2018; Leong et al. 2017), this study is arguably the first to demonstrate how they address financial inclusion. Given that little

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[2] Susu is a traditional cooperative money pooling scheme (see for more on Susu finance https://en.wikipedia.org/wiki/Susu_(informal_loan_club))

is known on how and why some fintech firms achieve financial inclusion whilst others have failed, we consider our insights critical addition to the fintech and financial inclusion literature. Practically, we have moved beyond providing anecdotal evidence to explain how fintech firms are manoeuvring complexities within an established financial sector to address financial inclusion. As the fintech sector is still nascent in many countries, our findings offer practical guide to others fintech firms. Similarly, our findings offer practical lessons to policy makers to cope with contradictions and tensions between incumbents and new entrants into the financial sector. We will develop this study in the following directions. First, we will delve deeper into how fintech firms co-create value in their effort to collectively address financial inclusion. We will also investigate how industry incumbents like banks are strategically responding to fintech firms at the same time working to address financial inclusion. Further, we will investigate how fintech ecosystems are addressing financial inclusion and shaping regulation. Lastly, we will extend the study to examine the spill over effect of dynamics in the financial sector as well as delve deeper into the perspective of other stakeholders such as the regulator, mobile network operators, merchants and mobile money agents.

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