



Embracing mobile financial inclusion in the wake of Covid-19 pandemic: The mediating role of cognitive and affective-based trust embeddedness

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Abstract

The aim of the study is to examine the role of social capital in the formation of mobile financial service users' adoptive behaviours toward service providers in the context of the financial technological regime of Ghana. The study used a total of 417 sample data from a self-administered questionnaire to achieve its objectives. Structural equation modeling was employed to analyze the direct effects of social capital and the mediation role of cognitive-based trust and affective-based trust on mobile financial service. The results of the study demonstrate that social capital, cognitive-based and affective-based trust collaboratively impact on the adoptive lifestyle of mobile financial service users. Specifically, both cognitive-based and affective-based trust mediate between social capital and mobile financial inclusion to inform users' behavioral intentions. The results however, reveals that affective-based trust plays a significant role in shaping mobile financial service users' behavioral intentions than cognitive-based trust. In detail, the study indicates that social capital directly impacts on the adoptive behavior of mobile financial service users. It is therefore, recommended that in the present era of Covid-19 pandemic and its attendant social distancing protocols, mobile financial service providers should invest heavily in social media channels to develop their corporate social capital brand in order to deepen their bondage with users. The study makes a vital contribution to the evolving debate on mobile financial inclusion, information system and consumer psychology from African perspective. The study acknowledges the contributions of prior studies to the afore-mentioned strands of discipline and the chasm in literature. Specifically, this study is the first of its kind to empirically examine the influential functions of social capital, cognitive-based trust and affective-based

trust on mobile financial inclusion from the lens of the Ghanaian financial technological landscape. The study will equip industry players with the needed know-how to enhance their profitability and operational competitiveness.

Keywords: Financial inclusion, Ghana, social capital, trust, mobile financial service

1. Introduction

In both strict and loose definitions of infrastructural investment, the sub-Saharan Africa (SSA) enclave has consistently lagged behind for several decades. More specifically, the SSA faces acute and endemic shortages of every human development index. These include good health systems, decent housing, gender equality, high literacy rate, befitting jobs, equitable distribution of essential services (utility, security and judicial service) (Okello and Munene, 2019). Another index of human development with an appalling and horrendous conditions in the SSA is accessibility to mainstream financial service. Several decades of underdeveloped mainstream financial service industry in Africa, has left the continent with dire financial exclusion consequences (Demirguc-Kunt *et al.*, 2018). The preceding dark images of the SSA, have pushed against the actualization of certain key parameters of the Sustainable Development Goals (SDGs) and the Millennium Development Goals (MDGs) (Jonathan and Camilo, 2008). However, in the present era of digital economy, the financial exclusivity story of Africa is told differently. This is attributable to the unparalleled penetration of mobile telephony across the length and breadth of the continent and the resultant effect of disruptive financial service landscape. Emerging body of studies demonstrate that the evolution of mobile telephony has given a new impetus to the financial service landscape and other socio-economic variables in the SSA and other emerging economies around the globe. “Mobile money is unlocking new solutions to some of the world’s most intractable development challenges.” (GSMA, 2019).

Through the power of the mobile telephony industry, humanitarian assistance has been extended to millions of forcibly displaced persons in over 44 countries globally, in the form of mobile-enabled financial services – i.e. mobile money and adjacent services such as savings, credit and insurance (GSMA, 2019). Moreover, extant studies suggest that vegetable and cereal growers residing in Northern Ghana are able to know the prevailing market prices of their produce at Ghana’s capital – Accra, via short message service (SMS). This means the mobile telephony industry has the aptitude for reducing the cost of information search expressively. Empirical studies indicate that in cosmopolitan regions such as Nigeria, South Africa, and Kenya, residents are able to send real time SMS reports on crime scenes to the security agencies for prompt action. People who are living with HIV/AIDS menace in places including Malawi are sent health alert messages via SMS by health care professionals to remind them of their next reporting dates, and medication schedules within the complete purview of telemedicine (m-health) (GSMA, 2019). Mobile money financial service, on the other hand, is well known for its low-cost remittance services to the vulnerable and financially excluded groups in a plethora of communities.

Mobile financial service is touted as the lynchpin of financial engineering and innovation on the African continent owing to its catalytic function in dwarfing financial exclusivity. It is believed to be the spine of the digital financial machinery needed for the attainment of certain key features of the SDGs and MDGs (GSMA, 2019). More specifically, the (GSMA, 2019), advances that “...mobile

money is a key driver of socio-economic growth by creating employment, driving business productivity and entrepreneurship, helping to formalize the economy and, providing stability during economic downturn.” (Aker and Mbiti, 2010) also assert that mobile telephony “...can facilitate communication among social networks in response to shocks and thereby, reduce households’ exposure risk.” Indeed, mobile telephony has “greatly reduced communication cost and has subsequently, allowed individuals and firms to send and obtain information quickly and cheaply on a variety of economic, social and political topics.” Tangible economic benefits accruing from communication cost reduction are “improved agricultural and labour market efficiency and producer/consumer welfare in specific circumstances and countries” (Aker and Mbiti, 2010).

Financial inclusion is defined as the “process of ensuring access to financial services and timely and adequate credit where needed by vulnerable groups at an affordable cost” (Okello and Munene, 2019). Following (Okello and Munene, 2019), mobile-mediated financial is defined in the context of this study as “a mobile-based money transfer service that uses information and communication technology tools and non-banking channels to offer and extend financial services to subscribers who are not profitable to be reached by formal and traditional services such as deposit, withdrawal, remittances delivery, and payment of bills.” Advocates of financial inclusion project that the application of mobile-mediated financial service has the propensity to amplify the delivery of adaptable, safe, economical and convenient financial services to a substantial number of people who do not have the wherewithal to access mainstream financial services (Kikulwe, Fischer and Qaim, 2014).

Indeed, the enormous socio-economic role of mobile-enabled financial services in the last decade has attracted a mammoth attention among academics and professions from the strand of studies on financial technology, information system, financial inclusion, banking, human development, consumer psychology, to mention a few (Jonathan and Camilo, 2008; Aker and Mbilti, 2010; GSMA, 2019; Okello and Munene, 2019). However, empirical evidence on the roles of social capital, cognitive-based and affective-based trust in shaping the causes of mobile-enabled financial service adoption for optimal benefits are still lacking in prior studies to the best of our knowledge. (Jonathan and Camilo, 2008) studied the impact of mobile-mediated financial service on the lives of rural-poor household. The results of their studies established that the introduction of digital financing in rural communities has impressively transformed their economic lives via efficient communication and financial services.

The World Bank (2014), conducted a study on the possible factors that give rise to the adoption of mobile financial services among the vulnerable communities in developing countries. The findings of the study indicated that factors such as affordable service, high rate of mobile telephony adoption, and absence of affordable substitutes promote the adoption of mobile financial services. Aker and Mbiti (2010), researched that rural-urban migrates in developing countries solely adopt mobile financial service as a medium to remit their relatives at their source villages. Also, (Okello and Munene, 2019), investigated the financial exclusivity of the poor in Uganda from the perspective of mainstream financial service providers. The analysis of their empirical study demonstrates that welfare improvement, reliability, convenience, reasonable account opening charges, and limited eligible requirement were some of the critical determinants of financial inclusion in rural Uganda.

Furthermore, (Tania and Adalbert, 2018), examined the challenges of rural financial inclusion based on a dataset from 772 microfinance institutions (MFIs). Their study concluded that high risk, unfavorable contracting environment, and high transaction cost were inimical to the growth of

financial inclusion. They furthered that a great deal of rural borrowers have no direct bearing on the sustainability of MFIs. (Yan, Hueng and Wenxiu, 2019), empirically, studied the relationship among digital financial service usage, financial literacy, internet usage and financial inclusion in China. The conclusion of their study was that digital financial service and internet usage play manifold functions between financial inclusion and financial literacy. They subsequently advised that policymakers ought to concentrate on financial literacy campaign, while projecting digital financial service usage.

While acknowledging the effort of researchers in extant literature on the above subject matter, it is noteworthy to bring to bear their obvious disregard on the contribution of social capital, cognitive-based and affective-based trust in deepening the frontiers of financial inclusion. Thus, the objective of the present study is to address the foregoing gap in prior studies. It is envisaged that managerial implications of the study will be instrumental in digital financing and financial inclusion policy formulation in the present era of Covid-19 pandemic and its attendant protocols.

The remainder of the study is organized as follows. Section 2 involves literature review. Section 3 comprises of conceptual framework and hypotheses development. Section 4 covers methodology and section 5 comprises of results and discussion. Lastly, section 6 covers the conclusion of the study.

2. Literature Review

2.1 Financial Inclusion, mobile financial Service and social network in Africa

According to the (GSMA, 2019), the SSA holds the epicenter of mobile-enabled financial services (Figure 1). A total of 290 mobile-enabled live services are dotted across 95 nations mostly, in Africa due to the unique underlying socio-economic factors prevailing on the continent. Many scholars have stressed that both price and non-price associated blockades in the form of high service cost, minimum balance requirement, traveling distance, lack of collateral security and long procedural sessions for documentations have collaboratively morphed into financial exclusion outcomes in the lives of a significant proportion of the African population (Beck and Cull, 2014). Consequently, financial inclusion advocates such as the World Bank, and the United Nations Capital Development Fund (UNCDF) have proposed the application of digital financing to engender convenient, affordable, secure, usable, safety and adaptable financial service regime in both urban and rural enclaves in developing countries (Kikulwe, Fischer and Qaim, 2014). In line with this, (Duncombe, 2009), studied that mobile phones have the outstanding capabilities to provide innovative financial service models to meet the needs of the unbanked and the underbanked cohorts. Leveraging mobile technology creates avenues beyond traditional branch networks by removing distance barriers of financial services to underprivileged and vulnerable groups (Kikulwe, Fischer and Qaim, 2014). Again, the Consultative Group to Assist the Poor (CGAP, 2018), posits that mobile phone has the propensity to rejuvenate the conventional banking landscape of labor-intensive through the introduction of lean procedural approach to financial service delivery.

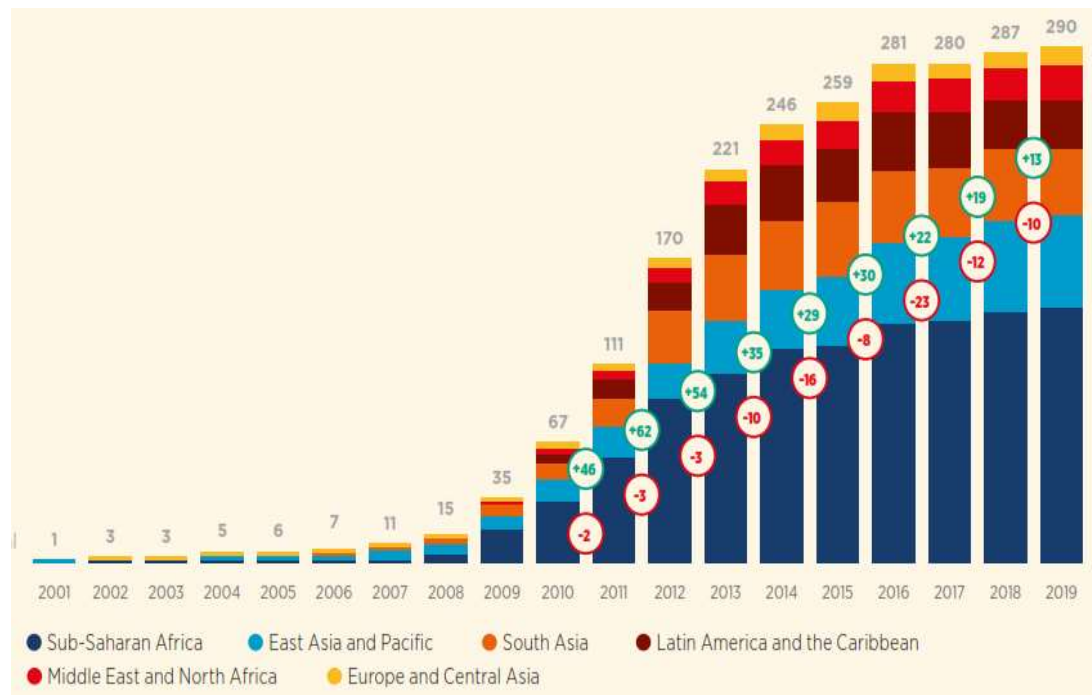


Figure 1: The Evolution of global mobile money landscape, 2001-2019. **Source:** GSMA, 2019

(Demirguc-Kunt *et al.*, 2018) contend that the impressive rate of network penetration, mass adoption of mobile phone and realistic documentations compared to traditional financial service prerequisites for service acquisition have being the underlying factors behind the ubiquity of mobile financial services. (Riquelme and Rios, 2010), similarly, argued that mobile phone subscribers employ mobile technology as a financial intermediary based on the opinions of their colleagues and family members. This therefore, suggest that majority of mobile phone subscribers who are poor depend on their relatives and their network of friends to obtain and disseminate vital information. In the perspective of (CGAP, 2018) most of the marketing arrangements in developing countries (like in the case of sub-Saharan African countries) are noted for their dependence on informal system of networks to execute their economic transactions. For instance, it was identified that among the rural dwellers of Uganda, a chunk of the poor community members depends greatly on local networks such as religious clusters and communal relations to heighten their familiarity on recent technologies and ideas.

Subsequently, (Yang *et al.*, 2015), espoused that social networks function as an information source. It promotes individual's adoption rate in terms of emerging products or services. Social network has also been identified to contribute to the post-adoptive behaviors of people. The trading of vital information among social and religious club members has been identified as an enabler for trust and security for the adoption of mobile money services. This assertion was confirmed by (Granovetter, 1973) who contends that societal and family links are the essentials of networks that connect the agents of economic coordination. They function as enablers for information accessibility and knowledge pertaining to recent socio-economic opportunities.

More so, (Demirguc-Kunt *et al.*, 2018) argued that some of the characteristics of undeveloped market systems where underprivileged people often trade are overdependence on social networks and word of mouth communications for economic transactions. Strong nodes and ties have been identified as

indispensable and instrumental in information acquisition and dissemination. Indeed, these empirical findings corroborate independent studies conducted by (Ajani and Tijani, 2009), who posited that there is a significant positive relationship between social networks and accessibility to microfinance service in poverty endemic regions. Also, (Sun and Barnett, 1994) stressed on the irreplaceable role of the universal telecommunication network industry in advancing social growth and economic development. In effect, the study reiterated the conspicuous impact of social network on financial technology adoption. Against this framework, (Riquelme and Rios, 2010) found that the probability that subscribers will buy into a given technology is significantly affected by the sentiments from network of clubs and relatives. It has also been established by (Stiglitz, 1990), that typically, the cost of transaction and other factors such as information asymmetry translate into imperfect conditions in most market economies. Consequently, this undesirable conditions on the market deepens the financial exclusion woes of the poor. Specifically, market imperfection has been identified to have the propensity to raise the cost of formal financial services. Thus, extending credit and insurance services to poor households become virtually impossible. From the foregoing, the only available means by which the poor segment in societies can have access to credit and insurance uptake to actualize their social-economic aspirations is through informal networks.

In practice, these networks in some instances, serve as a form of guarantee or collateral security for members to secure credit facilities. Some microfinance institutions screen prospective credit beneficiaries based on their social and family network affinities (Okello *et al.*, no date). In fact, this argument is in consistent with (Ahlin and Townsend, 2007), who came out that social networks or ties have the potential to dwarf the rate of reimbursement as a result of social sanctions. On the basis of this, (Floro and Yotopolous, 1991), stipulate that the vulnerable cohort in communities are able to moderate the twin problem of moral hazard and adverse selection as a result of likely social-ties related sanctions from the standpoint of joint liability credit applications. A corroborative study conducted by (Biggs, Raturi and Srivastava, 2002) extends that in the event of loan applications at most financial institutions in developing countries, social network acts as an enabler for economically-handicapped groups.

Prior literature also contends that the application of mobile money in communities can engender the usage of financial services and deepen financial inclusion especially, among rural folks (Jack and Suri, 2014). Similarly, (Jonathan and Camilo, 2008) advance that the socio-economic lives of numerous rural households have been transformed tremendously as a result of the ease of access to innovative financial services such as mobile money as well as improved communication service among friends and family members. Thus, mobile-mediated financial services have vastly crippled financial exclusion in most places in urban and rural Africa. Economic activities have therefore, improved astronomically in these regions due to easy access to microfinance and microinsurance facilities.

3. Conceptual framework and hypotheses development

3.1 Social network, social learning, attachment and social capital theories

Extant literature demonstrates that majority of mobile financial service users are low-income earners (Allen *et al.*, 2016; Okello and Munene, 2019). Moreover, the overwhelming utilization of mobile financial services in Africa is attributable to several factors such as shared security, satisfaction and the

perception of enhance service quality being propagated via groups or social affiliations (Aker and Mbiti, 2010; GSMA, 2019). In line with this, theories such as social learning, social network and attachment have been advanced to explain the behavioral dispositions of social affinities. (Putnam, Leonardi and Nanetti, 1993), defined social capital as “features of social life - networks, norms, and trust that enable participants to act together more effectively to pursue shared objectives.” (Bourdieu, 1980), advances that the beneficiaries of social capital, either individuals or otherwise, adopt group affiliations as the conduit to heighten their socio-economic aspirations. Similarly, (Bastelaer, 2000), posits that whenever social club members hold certain values and norms like mutual trust together, they are deemed to have social capital which can be used to advance their common goals. According to (Coleman, 1990), relationships become social capital on the ground that they yield and maintain outcomes for mutual benefits for participants.

(Warren, Sulaiman and Jaafar, 2015), however, defined social capital in the spirit of civic engagement, shared languages, social ties, interaction, trust, vision, among others. The constituents of social capital are positively related to one another. Intuitively, social capital emerges as a result of the presence of resources available to individuals whenever they engage in the social arena to champion their socio-economic ends. Social capital is believed to increase proportionally with the size of social contacts of actors. Against this backdrop, social networking actors, willfully invest massively in social engagement so as to have an accumulation of social capital. Social engagement engenders trustful relationships and give-and-take gestures. These are deemed as critical precursors of healthy socio-economic exchanges. Social capital deepens actors’ wellbeing as a result of the availability of handy information and avenues of opportunities. (Valenzuela, Park and Kee, 2009), however, decomposed social capital into three dimensions namely, behavioral, intrapersonal and interpersonal. Specifically, the behavioral dimension is linked to the active engagement of actors’ participation in the civic arena. The intrapersonal dimension is associated with matters of life satisfaction. Interpersonal social capital, on the other hand, relates to trustful behaviors among economic agents.

In view of social learning theory, (Bandura, 1986), espoused that individuals, systematically, learn from their peers or among their social network via modeling, observation and mimicking. Social learning philosophy further asserts that individuals learn via constants observation of people they assume to be extremely well-informed, well-read and credible in the social network arena. From the ongoing narrative, the behavioral disposition of social groups such as their close affinity with a specific mobile financial service provider is heavily dependent on the advice of some prominent individuals in the group (Ramsden, 1992). Again, (Putnam, Leonardi and Nanetti, 1993), identified a significant positive association among educational outcomes, social capital and economic development in a harmonious setting of networks. Other scholarly research indicate that through social capital, stronger networks are formulated and in the process, technological transfer and idea sharing are facilitated among most vulnerable and poor demographics (Balatti, 2007). This therefore, means that the interactive disposition among vulnerable and poor demographics in social network serves as a medium for knowledge, skill and information diffusion (Reagans and McEvily, 2003). (Bastelaer, 2000), contends that networks are highly significant in the financial services behavior of the vulnerable. In the light of this, (Woolcock, 1999), espouses that social networks are endowed with the propensity to create channels of information.

Furthermore, some empirical sources suggest that networks help to provide security for the poor and vulnerable groups by supplying the requisite information on group members, while serving as a conduit to expedite reimbursement obligations. (Bastelaer, 2000), advances that the availability of networks enhances information accessibility of vulnerable groups. In furtherance to this assertion, (Ellison, Steinfield and Lampe, 2007), claim that social networks have the capacity to greatly downsize the cost of information search as a result of bond formation among social network members. Again, there is a mountain of evidence in literature which assert that social ties are extremely formidable in safeguarding against moral selection, information asymmetry and adverse selection (Floro and Yotopolous, 1991).

A study by (Okello *et al.*, 2016), established that financial inclusion activities among poor households are significantly related to their social networks and social capital. In a similar study, (Okello and Munene, 2019), acknowledge that information diffusion on financial inclusion mechanisms (such as mobile financial service) are accelerated among vulnerable groups such as women as a result of their engagement or affinity with social weak ties or bridges. This assertion was confirmed by (Kuada, 2009) in a study which demonstrated that most start-up female entrepreneurs at the foundational stages of their economic lives depend heavily on financial advice and moral support emanating from social network quarters.

Another significant theory which has been used in extant literature to shed light on the underpinning factors of the behavioral dispositions of persons is the attachment theory (Scannell and Gifford, 2010). Specifically, the attachment theory advances that individuals are naturally endowed with the tendency to be bonded emotionally with other persons in the family, community or society as a result of the proximity of their relationships or the frequency of their interactional behaviors (Ainsworth, 1967). A familiar example which is oftentimes cited is the classical emotional attachment which is systematically developed between a mother and a babe. By extension, (Scannell and Gifford, 2010) posits that place attachment has the proclivity for bonding or create structural component in the lives of most consumers. The features of organizations constitute structural components. Within the framework of the attachment theory, these features mostly create the congenial environment for individuals to be attached to organizations. The attachment theory espouses that bonding encapsulate individuals' natural affection for a given organization. These elements of natural affections create a bonding mechanism between individuals and their service providers. For instance, within the mobile money financial service ecosystem, it is evident that structural components such as service providers' network coverage, network quality and service credibility, jointly function as the enablers for developing subscribers' unflinching attachment to a specific mobile financial service provider (Chakraborty and Sengupta, 2013).

Lastly, the UTAUT2 model has significantly contributed to theories which explain the pre-adoption dispositions of consumers by acknowledging the indispensable role of social influence in technology adoption (Venkatesh, Morris and Davis, 2003). The UTAUT2 model employs four constructs namely, social influence, facilitating conditions, effort expectancy and performance expectation to explain the behavioral intentions toward technology-driven services as such mobile financial services. In particular, social influence in the UTAUT2 model denotes consumers' attachment to value and importance to pieces of advice or information obtain from close associates in relations to the adoption and continuance usage of a technology. Studies indicate that most people find it convenient to use

mobile financial services as a result of recommendations from family members or close social ties (Chakraborty and Sengupta, 2013).

In general, social capital has empirically, served as avenue for trustful behavioral lifestyle formation (McAllister, Bourdieu, Coleman, Putman). The acknowledgement of trust as a basic prerequisite for economic exchanges has been highlighted by (Smith, 1979) in his classic “The Theory of Moral Sentiments.” On the basis of the foregoing, we hypothesis that:

H₁: Social capital functions as an enabler of cognitive-based trust.

H₂: Social capital functions as an enabler of affective-based trust.

H₃: Social capital functions as an enabler of financial inclusion.

3.2 Cognitive-based trust and affective-based trust

Financial inclusion, simply means, economic system actors have a seamless access to convenient and affordable financial service. Mobile financial services have been described as the financial service savior for the lion’s share of the African population since the last decade (GSMA, 2019). It is touted to have caused a considerable stride in deepening financial inclusion among the underserved and unbanked sub-groups in developing countries due to the lean nature of the service (Demirgüç-Kunt, and Klapper, 2018). Prior literature however, posits that trust remains critical in the adoption of mobile financial services. This is due to some underlying factors such as cybercrime and the failure of service providers to act on their value proposition (Choo, 2011).

Trust denotes the beliefs in the ethical conduct of others under influential circumstances. These include risk, security and subjective norms. Prior literature defines trust as the inclination to admit vulnerable conditions on the grounds of positive expectations from economic agents. From the unfolding development, different precursors of trust have been used in the research domain on information system with the express purpose of explaining the behavioral disposition of clients toward mobile-mediated financial service providers. Some of the highlighted precursors of trust are benevolence, ability, predictability, and the integrity of service providers (Doney and Cannon, 1997).

Technological trust, explicitly, means that economic actors have the desire to confidently rely on the prevailing system as assured in the value proposition (McKnight). Extant studies cogently demonstrate that human engagements are characterized by risky behaviors. These risky behaviors have the inclination to jeopardize good human relationship and eventually reduce it into estrangements (Zhou and Lin, 2014). Continuance assurance of trust is therefore, necessary to foster a perpetual bond among the actors of the economic coordination, especially, in mobile-mediated financial transactions. Moreover, (Zhou, 2014), identified information quality, perceived quality, perceived reputation, system quality, prompt response to the needs of clients, perceived privacy and perceived usefulness as the precursors of online trust. (Pavlou and Gefen, 2004) posit that trust has the quality to significantly reduce social mistrust. In other words, trustful lessons can be obtained from social interactions.

(Doney and Cannon, 1997), also, advanced that trust is a person’s belief in the dependability, skill, competency, and the security pertaining to the available system s(he) is working with under risky environment. Intuitively, system mistrust restricts the interactions of economic actors. The contrary

is however, true. (Lankton and McKnight, 2011) revealed that online trust is heavily anchored on impersonal dispositions. That is benevolence, competence and integrity as well as technological qualities in the form of functionality, helpfulness and reliability. This demonstrates trust as the foundation stone for both pre-behavioral and post-behavioral dispositions of online-mediated transactions. It is needed to engender patrons perceived values for social capital utilization (Ng et al, 2018).

(McAllister, 1995), however, decomposed trust into cognitive-based trust and affective-based trust. Cognitive-based trust emerges when an individual demonstrates a deliberate effort to trust an entity based on reasoning and the available knowledge at hand. In other words, cognitive-based trust embodies relationships where people decide to trust whenever honest tendencies are present. (Hites, 2005), espoused that “cognitive-based trust tends to be high whenever repeated interactions allow parties to come to know, understand and predict the routine process of interaction”. Cognitive-based trust is built whenever engaged economic actors demonstrate reliable and dependable qualities as encased in their value proposition (Oliver, 1997). For example, in a mobile financial service setting, the ability of service providers to constantly deliver high quality service will be the basis for cognitive-based trust formation. (Morrow, Hanson and Pearson, 2004), posit that when it comes to cognitive-based trust “one party assesses the trustworthiness of another party by weighing the evidence embedded in the attributes of the transaction and the characteristics of the other party(s) to the transaction.” Cognitive-based trust is naturally founded on self-interest and perceptions. In particular, it relates to the direct dealings among economic agents and the accompanying accomplishments. It is firmly rooted in cognitive reasoning (McAllister, 1995). Thus, mobile financial service users who are highly impressed with a certain service provider’s exceptional quality service delivery and accumulated past experience will undoubtedly extend cognitive-based trust toward the said service provider.

Affective-based trust, on the other hand, entails the self-assurance that someone reposes in an entity owing to accrued degree of care the entity has exhibited. Unlike cognitive-based trust, affective-based trust is emotion-driven (McAllister, 1995). Thus, in the dictates of affective-based trust, the trust behaviors of economic agents are chiefly based on the positive mental framework formed about other agents (Morrow, Hanson and Pearson, 2004). The degree of these positive gestures, therefore, becomes the basis for an individual’s acceptance for any vulnerable condition at the market space. Affective-based trust is powered by perceived security and the degree of agents’ relational strength. It is principally assessed by personal experiences with another economic actor. Reputation has also been identified as one of the precursors of affective-based trust (McAllister,1995).

The exponents of affective-based trust recognized social networking as the avenue for the creation of intimate and close ties as a result of its aptitude for direct interactions. Through social networking platforms, members are able to cultivate affective-based trust habits toward service providers in a form of word-of-mouth referrals. For instance, a client’s emotional attachment to a mobile financial service provider may serve as the antecedent for recommendation gestures in a social networking setting. Moreover, value co-creation literature is explicit on the indispensable roles of consumers in value creation. This implies that mobile financial service customers accumulated positive experience will eventually translate into affective-based trust. We therefore, hypothesize that:

H₄ : Cognitive-based trust mediates the positive relationship between social capital and mobile financial inclusion.

H₅: Affective-based trust mediates the positive relationship between social capital and mobile financial inclusion.

The proposed conceptual model of the study (Figure 2) throws more light on the relationship among the study constructs.

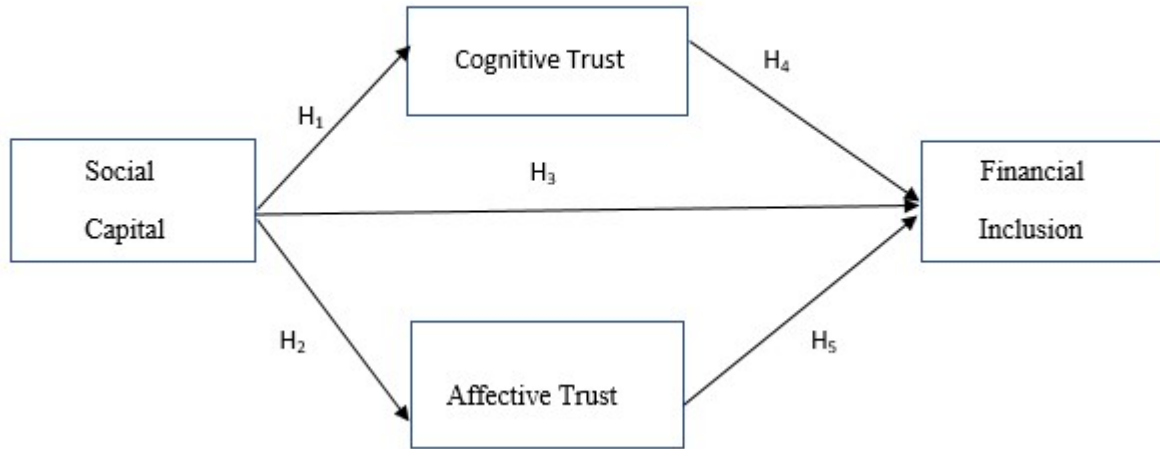


Figure 2: Conceptual Framework

4. Methodology

4.1 Survey instrument

The dataset of the study was obtained through a self-administered questionnaire which was carried out across five regions of Ghana in 2018. Four latent variables - social capital, cognitive-based trust, affective-based trust and mobile financial inclusion were used in the present study. These latent variables were adopted from prior studies to efficiently address the objectives of the study (Table 1). Pursuant to the efficient measurement of the questionnaire items, these latent variables were coded. More specifically, social capital, cognitive-based trust, affective-based trust and mobile financial inclusion, were respectively, coded as SOC, CTR, AFT and FIC. The survey instrument was based on a five-point Likert scale. A total of 417 respondents were retained for the study after data cleaning exercise. Both exploratory and further analyses - structural equation modeling (SEM) for testing the hypotheses of the study were executed via AMOS Graphic 22.

Table 1: Operationalization of latent variables

Latent variables	Items	Code	Source
Social Capital	I was introduced to my MFS provider by a family relation	SOC1	(Bourdieu, 1980; Coleman, 1990; McAllister, 1995;
	My social club is able to advocate for small scale financial service agents at vantage locations in my community	SOC2	

	Members of my group are able to assist me to produce the necessary documentations whenever I need financial service	SOC3	Putnam, 2000; Putnam et al, 1993)
	My social group offers important information on alternative sources of financial services	SOC4	
	A member of a social platform introduced me to MMS agent	SOC5	
	A neighbor introduced me to my MFS provider	SOC6	
	My social group virtually serves as a form of collateral for members who apply for financial services	SOC7	
Affective Trust	I am positively bonded to my MFS provider	AFT1	(McAllister, 1995; McKnight, Choudhury, & Kacmar, 2002)
	I believe my MFS provider has made a considerable emotional investment into our business contractual relations	AFT2	
	I feel at ease sharing my personal sentiments with my MFS provider	AFT3	
	I am comfortable to give personal information to my MFS provider	AFT4	
	I can confidently confine in my MFS provider for my financial service solutions	AFT5	
Cognitive Trust	I believe that my MFS provider will provide readily and insightful information when contacted	COT1	(McAllister, 1995, McKnight, et al, 2002)
	I don't doubt the competencies of my MFS provider	COT2	
	I believe my MFS provider is the most professional in the industry	COT3	
	I can rely on my MFS provider for convenient and affordable financial service solutions	COT4	
	I believe that my MFS provider will quickly fix any challenge I shall face pursuant to my transactions	COT5	
Financial Inclusion	I shall continue to utilize the services of my MFS provider	FIC1	Parasuraman, et al. 1998; Xu, et al. 2015
	I shall continually recommend the services of my MFS provider to others	FIC2	
	I shall stick to my MFS provider unconditionally	FIC3	
	I shall remain loyal to my MFS provider regardless of other alternatives	FIC4	
	I shall be an apostle of my MFS providers	FIC5	

5. Results and discussion

5.1 Demographic characteristics and profile of participants

Out of a total of 417 usable responses, 198 of them were male (47.6%) and, 219 of them were female (52.4%). The age distributions of the respondents were: 182 for the age group '20 – 29' (43.6%); 103 for '30 – 39' (24.7%); and, 118 for the age group ≥ 40 (28.3%). Moreover, a total of 186 (44.6%) of the respondents indicated MTN as their preferred mobile financial service provider. 100 (24%) of them had preference for Vodafone, while 92 (22 %) of them expressed their preference for Tigo. Lastly, 39 (9.4%) of them indicated Airtel as their preferred mobile financial service provider as shown in Table 2.

Table 2: Respondents demographic characteristics

	Options	Frequency	%
Sex	Male	198	47.6
	Female	219	52.4
Age	< 20	14	3.4
	20 – 29	182	43.6
	30 - 39	103	24.7
	≥ 40	118	28.3
Preferred Service Provider	MTN	186	44.6
	Tigo	92	22
	Airtel	39	9.4
	Vodafone	100	24

5.2 Two-stage structural equation modeling analysis

Following (Anderson and Gerbing, 1988), we used the two-stage approach to address the objectives of the study. Stage one comprises of measurement model – i.e., confirmatory factor analysis (CFA). This was intended to ensure convergent and discriminant validities. The second stage involves the testing of the structural model and data fitting measures (nomological validity). Nomological validity, basically, specifies the fitness of the overall model.

Essentially, exploratory factor analysis (EFA) is considered as a preliminary stage of SEM. In other words, it is conducted at the initial stage of SEM to confirm whether a given dataset on measured variables fits a theoretical model. This is done through diagnostic checks such as convergent validity and construct reliability. In the present study, the inspection of construct reliability was benchmarked on the Cronbach's alpha statistics (for internal consistency), average variance extracted (AVE) and, composite reliability (Gerbing, 1988). As demonstrated in Table 3, all the Cronbach's alpha statistics of the reflective variables were above the recommended value (> 0.7) (Nunnally, 1978). This is a manifestation that the study dataset is fit for factor analysis.

Specifically, the Cronbach's alpha values of the study ranged between 0.88 and 0.91 inclusive. Table 3, also, indicates that the composite reliability (CR) of all the reflective variables were above the recommended values (> 0.7). This indicates an achievement of convergent validity – i.e., there was no problem of cross-loading among the reflective variables. In other word, all the items perfectly loaded on their assigned constructs. The CR values were between 0.93 and 0.94, inclusive. Other indications of convergent validity were that all the AVE of the study constructs were above the recommended value (> 0.5), in tandem with (Kline, 2016) (Table 3). And as recommended by (Kline, 2016), all the estimates of the inter-construct correlation matrix were below the threshold value (0.85). Furthermore, the square roots of the AVEs were found to be higher than the estimates of the inter-construct correlation matrix (Fornell and Larcker, 1981), (Table 4).

Table 3. Measurement model estimation for reliability and validity test

Latent variables	Manifest variables	Loadings	AVE (Recommended value: > 0.5)	Cronbach's alpha if item is deleted	CR (Recommended value: > 0.7)	Cronbach's alpha (Recommended value: ≥ 0.7)
Social Capital (SOC)	SOC 3	.844	.64	.829	.93	.88
	SOC 4	.835		.842		
	SOC 5	.828		.822		
	SOC 7	.669		.867		
Affective Trust (AFT)	AFT 2	.812	.80	.924	.97	.94
	AFT 3	.928		.913		
	AFT 4	.973		.906		
	AFT 5	.826		.940		
Cognitive Trust (CTR)	CTR 2	.838	.76	.915	.96	.93
	CTR 3	.909		.894		
	CTR 4	.882		.901		
	CTR 5	.870		.908		
Financial Inclusion (FIC)	FIC 2	.909	.71	.871	.94	.91
	FIC 3	.791		.886		
	FIC 4	.893		.869		
	FIC 5	.787		.905		

Table 4. Square root of AVE and inter-constructs correlation matrix

Latent variables	SOC	AFT	CTR	FIC
SOC	.80			
AFT	.231	.87		
CTR	.484	.212	.80	
FIC	.572	.231	.443	.84

5.3 Structural model

As already acknowledged, the stage-two of SEM involves model fitting and hypothesis testing activities. Three kinds of model fitting analyses are mostly performed in SEM namely, Absolute, Incremental and Parsimonious model fits (Kline, 2016). Naturally, model fitting begins with model identification. Under the dictates of SEM, a model can arguably, be fitted when it is over-identified (Kline, 2016). That is, the number of distinct sample moments must be greater than the number of distinct parameters to be estimated. In other words, the degrees of freedom (DF) must be positive.

An examination of our AMOS output, impressively, revealed that the study dataset was over-identified with a DF of 95.

Model identification is proceeded by a series of model indices events with the aim of a attaining a parsimonious model for a good fit (Burne, 2004). Drawing upon this, the authors, conducted a total of four modification indices analyses to significantly improve the fit of model. In particular, covariation exercises were conducted between e_{19} and e_{13} ; e_{19} and e_{17} ; e_5 and e_9 and; e_{10} and lastly, between e_{10} and social capital, as depicted in Figure 4. Table 5, shows that the initial fit indices were identified as: Chi-square (CMIN) = 147.167, DF = 99, $P < 0.001$; comparative fit index (CFI) = 0.898; goodness-of-fit index (GFI) = 0.901; mean root square error of approximation (RMSEA) = 0.034; normed-of-fit index (NFI) = 0.973; and adjusted goodness-of-fit index (AGFI) = 0.893 (Burne, 2004; Kline, 2016). Table 5, clearly, indicates that all the afore-mentioned model fit indices improved significantly after the execution of modification indices.

Table 5: *Fit indices for the structural model*

Fit indices	Cut-off point	Model before modification indices	Model after modification indices
CMIN	≤ 3.000	147.167	108.883
CMIN/DF	≤ 3.000	1.487	1.146
GFI	$\geq .9$	.901	.952
AGFI	$\geq .8$	.893	.902
NFI	$\geq .9$	.973	.980
CFI	$\geq .9$	.898	.927
RMSEA	$\leq .08$	.034	.019

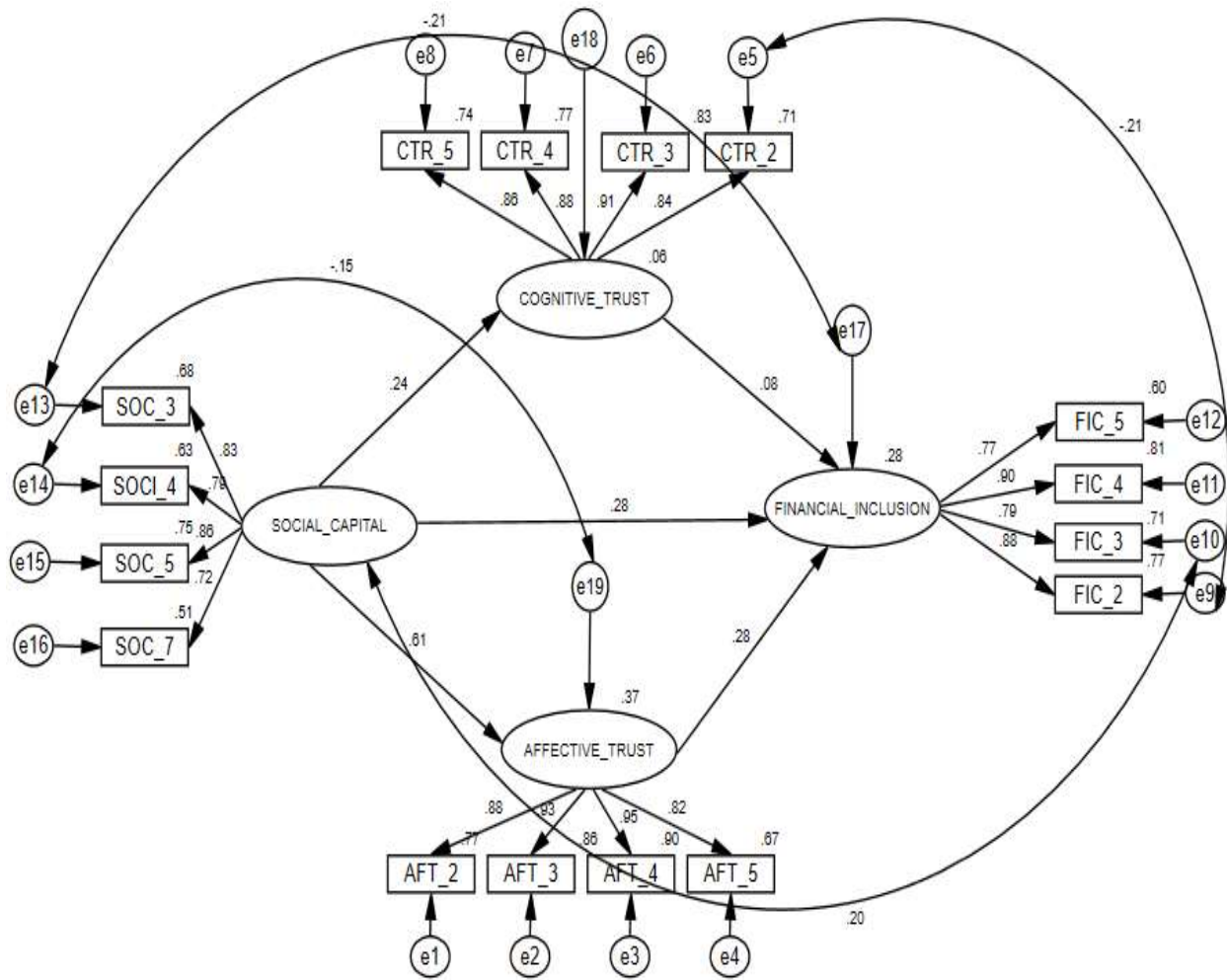
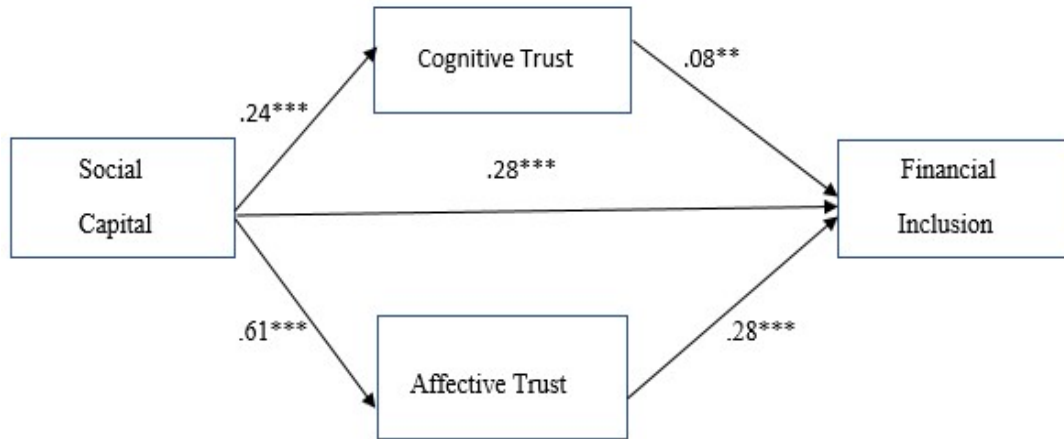


Figure 3: Structural model results

As demonstrated in Table 5, the modified statistical results produced the following: Chi-square (CMIN) = 108.883, DF = 95, $P < 0.001$; CFI = 0.927; GFI = 0.901; RMSEA = 0.019; NFI = 0.973; and AGFI = 0.902. These fit indices of the structural model were all in tandem with the recommended values in prior literature (Burne, 2004; Kline, 2016). This suggest that our structural model, overwhelmingly, fits the study dataset.

In relation to the path coefficient analyses, as demonstrated in Figures 3, 4, and Table 6, positive correlations were found between social capital and cognitive-based trust ($Y = 0.24$, $P = 0.000$); social capital and affective-based trust ($Y = 0.61$, $P = 0.000$); social capital and mobile financial inclusion ($Y = 0.24$, $P = 0.000$). Both cognitive-based trust ($Y = 0.08$, $P = 0.081$) and, affective-based trust ($Y = 0.28$, $P = 0.000$) were found to mediate the positive correlation between social capital and mobile financial inclusion. Thus, all the hypotheses (H_1, H_2, H_3, H_4 and H_5) of the study were supported. These claims are in consistent with prior literature (Okello *et al.*, 2019; Morrow, Hanson and Pearson, 2004; Valenzuela, Park and Kee, 2009; Hartono and Raharjo, 2015).

Specifically, our findings established that social capital functions as the common denominator for mobile financial service adoption decision-making. In other words, it collaborates with the remaining constructs of the study – cognitive-based and affective-based trust to define the adoptive behaviors of mobile financial service customers.



Note: *** $P < .001$; ** $P < .05$

Figure 4: Path coefficient of the structural model

Table 6: Structural model results and hypothesis testing

Path	Path coefficient	p -value	S.E.	Hypothesis test results
H ₁ : SOC → CTR	.24***	.000	.071	Supported
H ₂ : SOC → AFT	.61***	.000	.052	Supported
H ₃ : SOC → FIC	.28***	.000	.090	Supported
H ₄ : COT → FIC	.08**	.081	.048	Supported
H ₅ : AFT → FIC	.28***	.000	.082	Supported

Note: *** $P < .001$, ** $P < .05$

6.1 Conclusion

The eradication of extreme poverty, gender inequality, promotion of well-being and good health have been boldly spelt out as part of the agenda of most socio-economic programs including the SDGs and MDGs (Andy Haines and Andrew Cassels, 2004; *Education for Sustainable Development Goals: Learning Objectives*. UNESCO, 2017). The attainment of these set goals hinges primarily, on economic-wide financial service landscape. However, due to the underdeveloped nature of the traditional financial service industry in Africa and other developing enclaves around the globe, a significant proportion of

the populace have been denied access to financial services. This condition, is antagonistic and hostile to the achievement of any desirable developmental goal in the affected regions.

The bleak financial service landscape illustrated above has, however, succumbed considerably to the introduction of mobile financial services across most developing economies. More specifically, the birth of mobile financial service has deepened the corridors of financial services to relief the unbanked and the underserved cohorts. This study was therefore, undertaken to investigate the direct and the indirect roles of social capital in shaping mobile financial service customers behavioral intentions toward service providers. In tandem with prior studies, our findings revealed that social capital, positively, impacts the adoptive behaviors of mobile financial service customers (McAllister, 1995; Valenzuela, Park and Kee, 2009). The study further revealed that both cognitive-based trust and affective-based trust mediate between social capital and mobile financial inclusion. However, affective-based trust was identified to mediate significantly between social capital and mobile financial inclusion relative to cognitive-based trust as demonstrated in prior studies (McAllister, 1995; Valenzuela, Park and Kee, 2009; Hartono and Raharjo, 2015).

6.2 Implication to practice and theory

The current study, empirically, brings to bear the captivating influence of social capital on adoption intentions toward mobile financial inclusion in the current regime of Covid-19 pandemic and the accompanying social distancing protocols which discourage bricks and mortar businesses. Indeed, the study reveals that social capital significantly impacts the affective-based trust formation of mobile financial service subscribers via mediation mechanisms. The study, has also demonstrated that social capital has a direct positive influence on the adoption of mobile financial service. These claims portend that mobile financial service providers can harness social media and other social-mediated avenues to their advantage in this era of unprecedented competition in the mobile financial service industry.

Social media channels – Facebook, WhatsApp, Instagram, WeChat, Twitter, YouTube, Tik Tok, among others, have a huge geographically spread-out users which serve as a mine of social capital. Mobile financial service providers can therefore, capitalize on some of these channels for lean production and cost-cutting measures. Relative to cognitive-based trust, the study identified social capital to have a profound influence on affective-based trust. Affective-based trust resonates with emotions. Thus, users' degree of trust assigned to suppliers is anchored on the underlying demonstration of degree of care of the latter. In particular, the perception of service providers' benevolence – acting within the dictates of value proposition, coupled with positive gestures toward users, and genuine concerns will receive overwhelming likes and referrals on social media as expressed in previous studies (Blanchaerd, 2011). This also implies that any managerial attempt to enhance mobile financial service users' accessibility to information about service providers on any of the illustrated social medial channels will have a cascading effect on affective-based trust.

The present study, also makes a vital contribution to the evolving debate on mobile financial inclusion, information system and consumer psychology from African perspective. The study acknowledged the contributions of prior studies to the afore-mentioned strand of disciplines, and the chasm in literature which occasioned the present study. Specifically, this study is the first of its kind to empirically examine the influential roles of social capital, cognitive-based trust and affective-based trust on mobile financial inclusion from the Ghanaian financial technology landscape. The study therefore, narrows the chasm

and the imbalance in literature as far as the abundance of studies on the subject matter from developed and emerging economies point of view is concerned.

6.3 Limitation and recommendation for future research

The present study was aimed at investigating the mediation and indirect roles of social capital on mobile financial inclusion. To this end, three constructs – social capital, cognitive-based trust and affective-based trust were used to address the outlined objective of the study. The study focused principally on the demand side of the customer/supplier dyad and, thus, limits the scope of the study. It is therefore, recommended that future studies should consider to broaden the scope of the debate on social capital impact on mobile financial inclusion by considering the supply side of the continuum between demand and supply of mobile financial inclusion.

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