Contents lists available at ScienceDirect

Technological Forecasting & Social Change

journal homepage: www.elsevier.com/locate/techfore

Mobile money as a driver of digital financial inclusion

Aijaz A. Shaikh [a,*], Richard Glavee-Geo [b], Heikki Karjaluoto [a], Robert Ebo Hinson [c,d]

[a] Jyväskylä University School of Business and Economics, P.O. Box 35, FI-40014, University of Jyväskylä, Finland
[b] Department of International Business, Faculty of Economics and Management, Norwegian University of Science and Technology, Ålesund, Norway
[c] Ghana Communication Technology University, Ghana
[d] University of the Free State Business School, South Africa

ARTICLE INFO

ABSTRACT

Meeting the mobile money needs of the less privileged in developing and emerging markets opens up enormous possibilities for banks and newly emerged financial-technology firms. Many consider mobile money services a separate domain within the banking and payment sector, different from its siblings: automated teller machines, net banking, point-of-sale banking, etc. This study was conducted to investigate how mobile money services act as a reliable driver of digital financial inclusion and to determine the role of mobile money agents in the transformation from the traditional services to mobile money services. This paper presents a conceptual model based on the stimulus-organism-response paradigm. We propose that the mobile money agent characteristics are the stimuli, that the mobile money customer is the organism, and that the response of the organism to the stimuli is continuous usage, which leads to financial inclusion in the developing country of Ghana. The continuous usage of mobile money services by customers encourages more engagement experiences and advocacy intentions. We provide empirical evidence suggesting that mobile money agent credibility and service quality stimulate customer empowerment. Furthermore, we argue that for the less financially empowered customer segment, mobile money agent credibility provides the needed impetus for the continuous usage of mobile money services.

1. Introduction

The widespread diffusion of smartphones in emerging and developing markets has inspired digital transformation, reduced the informal and undocumented volume of transactions, and increased digital inclusion in Africa and elsewhere. The diffusion of smartphones, which has played a remarkable role in reducing the digital divide, is now considered the future of the industry, although mostly in developed markets (Kabbiri et al., 2018). Cell phones and internet penetration reduce information asymmetry and cell phones continue to be the top choice of device for the vast majority of mobile money users with 5.2 billion mobile users worldwide (Wellalage et al., 2021; GSMA, 2021). It is difficult to overlook the case study of the highly popular mobile money model known as M-Pesa in Kenya, which provided huge motivation, wide acclaim, and a novel way of delivering innovative everyday financial and banking services to less privileged consumer segment. However, despite efforts to replicate the M-Pesa model, many banks and non-financial institutions are struggling to launch mobile money technology and its use to the same scale (Lepoutre and Oguntoye, 2018) in

several demographics, including Ghana.

The objectives behind the development and deployment of mobile money technology, which is defined as the provision of banking and payment services through a network of agents on a cell phone with a GSM connection (Batista and Vicente, 2020), were to provide easy and convenient access to banking and payment services, expand the consumer base, and discover a new revenue stream for service providers, given that the mobile money industry currently has over 1.2 billion registered accounts, over 300 million monthly active accounts, and the global value of daily transactions exceeded 2 billion USD (GSMA, 2021).

Unlike traditional banking and payment models, where either the teller in the branch or the ATMs and the Internet facilitate banking transactions, the mobile money ecosystem is complemented by a dedicated agent network (See Fig. 1). Mobile money agents in the mobile money ecosystem (a typical digital and service channel) serves as the foundation of the mobile money initiative. These agents, which are formally selected and designated by banking firms, FinTech, and Telecoms, interact with consumers and provide everyday banking and payment-related services using cell phones, thereby replacing the need

for bank branches, ATMs and Internet banking. Therefore, it is safe to conclude that the success of mobile money technology is indispensable to the successful development and management of the demographically distributed agent network.

Despite their significance, research on mobile money agents is limited to non-scientific studies (cf. GSMA, 2021; McKinsey and Co., 2018; CGAP, 2018). In addition, African continent is considered pioneer when it comes to mobile money innovations for financial inclusion (Asongu et al., 2020). Despite this recognition, not every country on the African continent has achieved the scale and the satisfactory diffusion rate through mobile money technology that resulted from M-Pesa in Kenya (Lepoutre and Oguntoye, 2018). As an example that is exclusive to the Sub-Saharan and East-African region, as many as 13 African countries who deployed various mobile money models have achieved less than a 10 % adoption ratio; similarly, more than a dozen other African countries have virtually no deployment of mobile money services (Lashitew et al., 2019). Therefore, more research is required to understand the reasons for such low diffusion.

Furthermore, a little attention has been directed toward mobile money and similar financial technology developments to examine the role played by mobile money agents' credibility and service quality in promoting mobile money services and empowering mobile money users in Ghana, which is the context of this study. The concept of consumer empowerment—enhancing consumers' ability with sufficient knowledge and autonomy to access, understand, share information, and to exert control over a certain decision (Khenfer et al., 2020) — is not well understood, is seldom used in the context of the mobile money environment, and has shown inconsistent and unstable prior results of empowerment practices (Jiang et al., 2011). Therefore, we have pursued an unusual line of enquiry by targeting our analysis mainly at the role played by mobile money agents, their two major characteristics (credibility and service quality), and consumer empowerment.

In addition, past empirical evidence has examined the direct relationship between source credibility and service quality on the one hand and attitude and intention to purchase or use a service, product, or system on the other (Ayeh et al., 2013; Udo et al., 2010). Given that a positive relationship exists between source credibility/service quality and attitude/intention, examining the effect of consumer empowerment as a moderator of such relationship will make an important contribution to the existing literature and will therefore be worth examining. While no prior study has tested the prediction that consumer empowerment moderates the aforementioned relationship, it is believed that firms maintaining contact (e.g., mobile money services) are more suited to adopt a favorable and successful strategy of consumer empowerment (Zhang et al., 2018).

This study is grounded in the stimulus-organism-response (S-O-R) paradigm. We argue that mobile money agent characteristics are the stimuli, that the mobile money customer is the organism, and that the response of the organism to the stimuli is continuous usage of mobile money services, leading to financial inclusion. Moreover, agent credibility and service quality generally stimulate customer empowerment. Prior research has manifested the relationship of consumer empowerment with several variables, but its relationships with agent credibility and service quality have rarely been examined. Most of the previous studies considered consumer empowerment in the digital or online setting (e.g., Midha, 2012) or the hybrid/omni-channel environment (Ürgüplü and Hüseyinoğlu, 2021), leaving much room for the examination of consumer empowerment in an offline setting requiring face-to-face interaction. Furthermore, we argue that for the less financially empowered, mobile money agent credibility provides the needed impetus for the continuous usage of mobile money services.

Our study aims at making a contribution to the mobile money and financial inclusion literature in Africa and elsewhere. We also develop a research model to investigate the influence of mobile money agent credibility and service quality on customer empowerment; and exploring the outcome of such empowerment. Our exploratory quantitative analysis also seeks to examine users' true user behavior instead of behavioral intention when adopting and using a financial technology, such as mobile money. To provide a point of orientation for an investigation and after considering the research objectives and the scope of the study, the following three research questions have been introduced and addressed:

RQ1: How prominent are mobile money agent characteristics in promoting customer empowerment that leads to digital/financial inclusion?

RQ2: What matters most for less financially included customers in terms of mobile money agent credibility versus service quality?

RQ3: Which mobile money agent characteristics are particularly essential to prioritize for managerial as well as regulatory actions?

In Section 2, we present the literature and theory review, including an overview of mobile money, mobile money agents, and their role in increasing the financial inclusion, creating more equitable societies, and empowering the less privileged consumer. We also present the S-O-R theory. Next, we highlight the research model and hypotheses development in Section 3, which provides the theoretical support/argument as well as a strong justification for the causal relationships. We follow with the research methodology (Section 4), results (Section 5), and finally discussion and conclusion (Section 6).
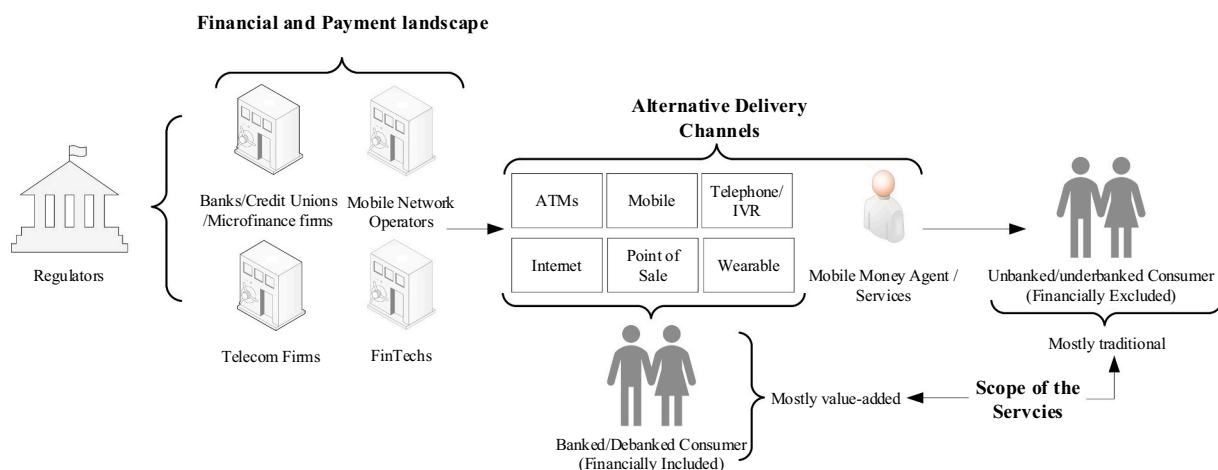

Fig. 1. The mobile money ecosystem.

2. Literature and theory review

2.1. Mobile money–a paradigm shift in the payment industry

Reaching the unbanked consumer segment of society, creating awareness about a financial product or service, and providing accessible everyday banking and payment services to the low-income population with poorly documented credit histories have always been difficult challenges for marketing companies, the mainstream financial sector, Fintech, and regulatory agencies (Mogaji et al., 2021). To that end, in recent decades, banking companies have tested and deployed various business models that created some solutions, such as Automated Teller Machines (ATMs) and Point-of-Sale deployment (which proved uneconomical and had high operational and fixed costs) and online banking (which was ineffective due to the dwindling infrastructure and week internet facility). Under these circumstances, mobile money services appeared as a viable banking channel that could radically transform access to financial services in many African and Asian countries.

Mobile money (also referred to as agency banking and portable banking) allows users to remit, transfer, deposit, withdraw, invest, and save money on a mobile phone (Riley, 2018). Mobile money is widely considered a tool that allows the less-privileged consumer segment to make financial transactions services at a low or zero cost (Pelletier et al., 2020). The key enabler of mobile money services is the use of everyday retail stores and kiosks, which are known as agents, to capture customers' cash transactions (Batista and Vicente, 2020; Dermish et al., 2011) and provide day-to-day financial and payment services, including local remittances, payment of utility bills, etc. The mobile money ecosystem is shown in Fig. 1.

Considering the benefits of reaching the marginalized, less privileged, or unbanked population, Global Finance (2021) has defined the term *unbanked* as that segment of the population without bank checking, savings, or mobile money provider accounts; without access to financial and payment products, including insurance, loans, or mortgages; without protection from the theft or loss of their hard-earned money; and without any documentation of their financial transactions. Mobile money services have brought about a paradigm shift in the payment industry and has become increasingly dynamic and disruptive over the last two decades. The mobile money channel has a significant potential to extend the distribution of formal financial services to the poor segments of society who are not reached by other banking channels. In the Middle East and Africa, 50 % of the population are unbanked or financially excluded; in South and Central America, 38 %; in Eastern Europe and the former Soviet republics, 33 %; and in Asia Pacific, 24 % (Global Finance, 2021).

Mobile money services are now widely considered an integral component of the financial-inclusion program (Dermish et al., 2011) that was initiated in several developing and emerging countries in the last two decades. Considering their importance in reaching the unbanked and even underbanked, these financial-inclusion programs have primarily been supported and promoted by national governments and regulatory bodies across many countries, including Ghana.

Mobile money services allow the transfer of money and other financial services with minimum physical contact and have therefore provided a lifeline and an impetus to mobile money businesses especially across the non-Western or emerging and developing societies during the coronavirus disease 2019 (COVID-19) pandemic, which has profoundly affected the global society and individuals' lives and well-being. Considering that mobile money transactions have remained largely unaffected by the pandemic (GSMA, 2021) and that mobile money services have largely supported remote financial-service provision during the pandemic, several countries have adopted measures to support and promote mobile money technology and services (Bazarbash et al., 2020).

2.2. Mobile money agent

Mobile money allows customers with and without a formal bank account to conduct everyday retail financial transactions, such as deposits and transfers, at designated mobile money agents or third-party outlets. These outlets can be a small retailer, a post office, etc. Considering the huge cost involved in opening and maintaining a bank branch as well as installing and maintaining an ATM banking system, mobile money agents provide a novel alternative to formal banking and payment tellers to customers. Per the GSMA (2021), there are over 9.1 million mobile money agents with 4.8 million active agents.

Research (cf. Senyo and Osabutey, 2020) has defined mobile money or agency banking as a form of FinTech innovation that involves the use of agents and technology to transmit the details of financial transactions through mobile devices and is highly regarded as an essential game changer in deepening financial inclusion. These mobile money agents facilitate the low-income, less-educated, and less-aware segment of the society, including female customers, in conducting financial transactions, using safe and secure formal banking and payment channels, and increasing their awareness on how to use mobile money services. Therefore, the success of a mobile money service largely depends upon the mobile money agent's characteristics, such as credibility, truthfulness, consumer transactions, information privacy, reliability, service quality, etc.

An agency relationship exists whenever one partner (i.e., the principal) depends on another (i.e., the agent) to undertake some functions on behalf of the principal (Bergen et al., 1992; Eisenhardt, 1989). In this study, the mobile money intermediary is the agent working on behalf of the principal (e.g., bank, FinTech, Telecom). Consequently, the agent occupies a key position in promoting mobile money services, promoting awareness about the services, boosting the volume of transactions, and expanding financial inclusion programs.

2.3. Stimulus organism response theory

The S-O-R theory (see Fig. 2) provides an appropriate framework for explaining the mechanisms related to environmental stimuli of behavioral responses (Mehrabian and Russell, 1974; Vieira, 2013).

The S-O-R theory proposes that the distinct attributes of the environment respond to a stimulus that impacts the internal (psychological) state of individuals/organisms and drives them to respond behaviorally (Kim et al., 2010; Vieira, 2013). "Consistent with S-O-R theory, the 'stimulus' is represented by a collection of attributes…. serve as cues that penetrate the consciousness of customers and provoke them (as receivers) to act" (Islam et al., 2020, p.1281). The stimulus is "the influence that arouses the individual" (Eroglu et al., 2001, p. 179). The stimulus influences a consumer's perception and internal state (Mehrabian and Russell, 1974; Mollen and Wilson, 2010). In our study, we applied the S-O-R framework to the mobile money services and technology platform environment. The stimulus refers to the agent characteristics and features that provide various levels of stimuli that the customer (organism) can react to and that the latter can thus evaluate. Upon triggering the stimulus, the customer processes it into useful and meaningful information, which leads to action-oriented decisions. Thus, evaluations of the agent's service features can be either favorable or non-favorable. A favorable assessment of the agent's attributes should lead to the continuous use of the service. The response relates to the outcome that is reflected through the customer's actions and behavior (Eroglu et al., 2003; Islam and Rahman, 2017). We argue that further engagement and advocacy due to the positive experiences of the customers will enhance digital financial inclusion.

2.4. Mobile money agent credibility

Four dimensions of agent credibility are key concerns in this investigation: Information or transaction privacy, information or transaction
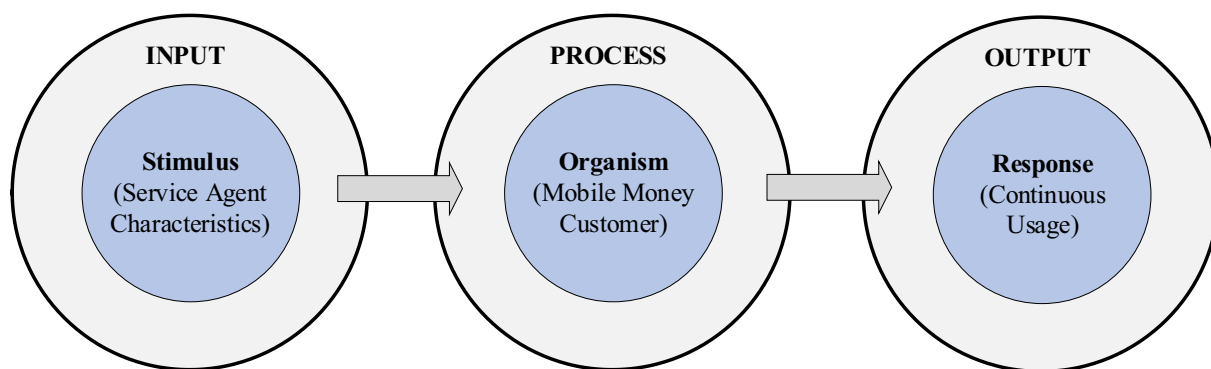
Fig. 2. The S-O-R theoretical framework.

security, agent truthfulness, and agent reliability. Mobile money agent credibility is quite similar to source credibility, which is the reliability of the source or facilitator that is providing services or information (i.e., source credibility implies how much the message's recipient believes in the sender) (Kang and Namkung, 2019). Sources can include company employees, a company spokesperson, company representatives, such as agents, and even a celebrity or model in an advertisement who is using or demonstrating the good or service (Clow et al., 2006).

Prior research as considered agent credibility a key to the success of mobile money services (Odoom and Kosiba, 2020) and has operationalized it in several ways. Visentin et al. (2019) define a credible source as a communication medium that is seen as providing correct and relatively bias-free information. The most important elements of source credibility include expertise, trustworthiness (such as reliability and integrity), reputation, attractiveness, objectivity, likeability, and homophily (Clow et al., 2006; Hussain et al., 2017; Ismagilova et al., 2019). In digital services, such as mobile money, the credibility and the reputation of the service provider or agent encourage customers to reduce information asymmetry (Xiao and Dong, 2015) and increase acceptance and usage of the service. In the online and social media environments, where face-to-face interaction is non-existent, determining the reliability and trustworthiness of a source is difficult. However, in mobile money services, the agent provides services face-to-face, which makes checking an agent's credibility more transparent and simple. Additionally, the need for source credibility is more astringent in the mobile money context due to the financial nature of the transactions.

2.5. Mobile money agent service quality

Parasuraman et al. (1994), who initially proposed the conceptual model of perceived service quality, note that service quality is considered the users' or customers' perceptions and value judgment of service. There is a broad consensus among academic researchers (e.g., Prentice et al., 2019) that service quality can be judged on the basis of a single encounter experience with a product or service. Similar to source credibility, the quality of service that is delivered by agents in the mobile money context is considered a key determinant of the success or failure of the mobile money business because the service quality element is essential to achieving customer satisfaction, trust, loyalty, and behavioral intention (Boonlertvanich, 2019; Prentice et al., 2019) with a certain product or service. Unlike product quality, which can be measured and checked objectively by tangible or visible signs, such as defects, cuts, durability, weight, etc. (Garvin, 1983), service quality by nature is quite intangible and without any objective measures (Zietsman et al., 2019).

2.6. Consumer empowerment theory

Consumer empowerment is widely considered an emerging concept

in the marketing literature (Hartmann et al., 2018; Khenfer et al., 2020), and it is found to be conceptually synonymous with consumer expertise (Balderjahn et al., 2019). Prior research (Hu and Krishen, 2019; Wolf et al., 2015) has defined consumer empowerment as empowering the consumer through more meaningful information or understanding that helps them choose what they want, when they want it, how they want it, and on their terms. From this definition, the mobile money agent network and the Internet environment are considered essential in that they facilitate massive amounts of information resources' flow and understanding about the product and service to consumers.

Our motivation to focus on consumer empowerment as a key endogenous variable stems from contemporary research's (e.g., de Luna et al., 2018) explicit identification of consumer empowerment as a major driver of the adoption and usage of mobile-based payment systems. In addition, due to low literacy rates and virtually non-existent internet connectivity, consumers are left with few choices for making every day financial and payment decisions. Under these circumstances, the frontline mobile money agent is of great value to these underprivileged and unbanked segments. Therefore, the role played by mobile money agents in empowering consumers is worthy of investigation. Similarly, the COVID-19 pandemic has changed the economic and social landscape and has challenged the traditional business models. Empowering customers to understand and use mobile money services can allow the execution of services to be maintained remotely via cell phone while also maintaining the parameters of social distancing as and when needed.

2.7. Consumer engagement

Consumer engagement, which is composed of cognitive, emotional, behavioral, and social elements (Tarute et al., 2017), is defined as a psychological process that leads to the formation of loyalty (Bowden, 2009). In the mobile application context, Hepola et al. (2016) define consumer engagement as a consumer's mobile application-related cognitive, emotional, and behavioral activity that occurs during or is related to focal consumer and cellular interactions. Brodie et al. (2013) and Hollebeek (2011) define consumer engagement as a consumer's overall psychological experience with the brand as well as the company, its employees, and other consumers. Prior research on consumer engagement has established mobile application design solutions and information quality to enhance consumer engagement, leading to the sustained usage of mobile applications (Tarute et al., 2017). In addition, self-congruence positively influences consumer engagement in mobile banking applications (Hepola et al., 2016), and perceived ease of use, perceived usefulness, convenience, and enjoyment influence customer engagement with m-commerce applications (McLean, 2018), etc.

2.8. Advocacy intention

Wu and Cheng (2017. p. 105) define advocacy as "an advanced form of market orientation that responds to the new drivers of consumer choice, involvement, and knowledge." From the customer relationship perspective, Du et al. (2007) define advocacy intentions as consumers' positive views of and support for an organization and their products and services, which are measured through intentions to consume the organization's products or services and then subsequently share their positive experiences with the product or service with others using various channels, including social media.

Nonetheless, advocacy intention and word of mouth are considered the most influential channels of communication, and their influence in shaping the marketing strategy is continuing to grow due to digitally driven explosion and expansion and wider usage in the communication channels (Park et al., 2018). In the mobile money context, which is primarily based on mutual trust between the consumer and the mobile money agent in executing financial transactions, consumers' positive views or advocacy play a decisive role in increasing sales and profit margins and promoting services among a more comprehensive sector of underprivileged society.

3. Research model and hypotheses development

The proposed conceptual/research model (Fig. 3) suggests that two antecedents of consumer empowerment (i.e., agent credibility and agent service quality) are associated with the endogenous variable, continuous usage. Moreover, continuous usage of mobile money services is positively related to consumer engagement and customer advocacy intention. Continuous usage of the services should lead to increased customer engagement and advocacy. Furthermore, we investigated if consumer empowerment moderates the influence of agent credibility on continuous usage and agent service quality. We thus came up with an alternative model (see Fig. 4) in addition to the main research model (Fig. 3).

3.1. Agent credibility, agent service quality, and consumer empowerment

Examining the relationship between an agent's or a service provider's credibility and service quality on the one hand and consumer empowerment on the other is considered necessary for mobile money services for several reasons. For example, social media and online services offering immediate freedom of choice and expanded information opportunities on personal devices (Hu and Krishen, 2019) increase consumer self-efficacy and fully empower digital consumers to access and analyze information and make rational decisions. By contrast, mobile money or agent banking services mostly require face-to-face interaction and target the less aware and educated consumers. Consequently, consumer empowerment mainly depends on the credibility of the agent providing

mobile money services to the less privileged section of society. We therefore posit a positive correlation between an agent's credibility and consumer empowerment. Concerning credibility, Rezabakhsh et al. (2006) argue that assessment of usefulness and source credibility is a consumer-empowering endeavor that can help consumers become more adept at making informed decisions. We therefore came up with the hypothesis below.

H1. : Agent credibility positively influences consumer empowerment.

A plethora of studies (cf. Lin et al., 2017; Gazzoli et al., 2010) have examined the effects of employee empowerment on customer service quality, and a few have examined the correlation between the employee or agent service quality and consumer empowerment. Nonetheless, we argue that in the case of mobile money services, a better service quality enhances customer empowerment. For example, consumers can be empowered by providing them with sufficient information and training on the use of mobile money platforms. This will benefit the mobile money service providers in several ways. For instance, the consumers will be able to make well-informed decisions, the workload of the agents will be reduced, and consumer advocacy can be created. Also, Zhang et al. (2018) found that consumers are more likely to trust retailers or agents who empower them by giving them greater control. We therefore came up with the hypothesis below.

H2. : Agent service quality positively influences consumer empowerment.

3.2. Consumer empowerment and continuous usage

Consumer empowerment has been viewed as a process and an outcome where an empowered consumer is free to choose what he/she wants when he/she wants it on his/her own terms (Li, 2016; Zhang et al., 2018). An empowered consumer with necessary information about a particular product or service is certainly in a better position to decide what to use. On the contrary, a sense of powerlessness leads to a lack of responsibility and consumer demotivation (Füller et al., 2009) and subsequent discontinuation. It is therefore highly likely that increased consumer empowerment will lead to the sustained usage of services, such as mobile money.

Several factors leading to the purchase intention and continuous usage of technological products and services have been examined and identified in prior research, such as mobile banking, internet banking, and mobile money. The most notable of these factors are consumer empowerment (Hartmann et al., 2018), consumer satisfaction (Yuan et al., 2019), trust (Shaikh et al., 2015), consumer engagement (Glavee-Geo et al., 2019), and perceived value (Shaikh and Karjaluoto, 2016). While examining the impact of channel integration on consumer responses in omni-channel retailing, Zhang et al. (2018) found
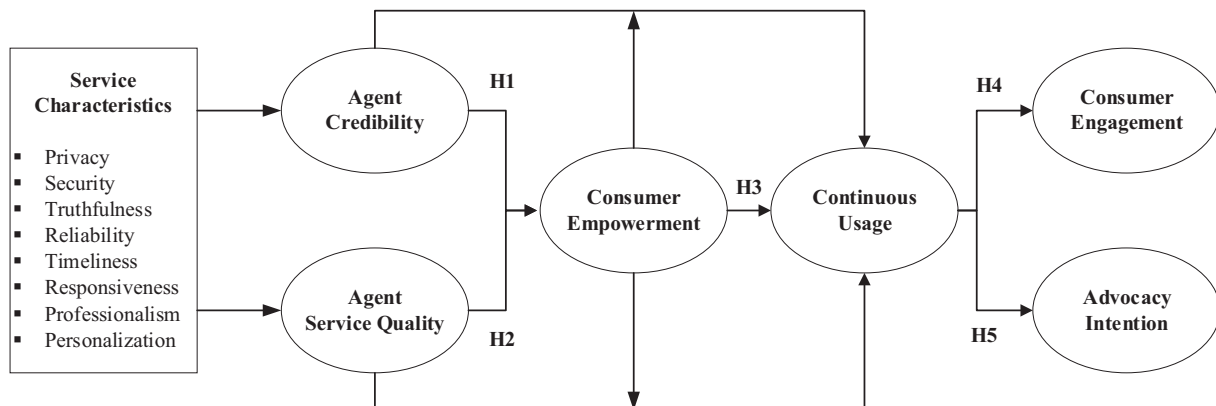

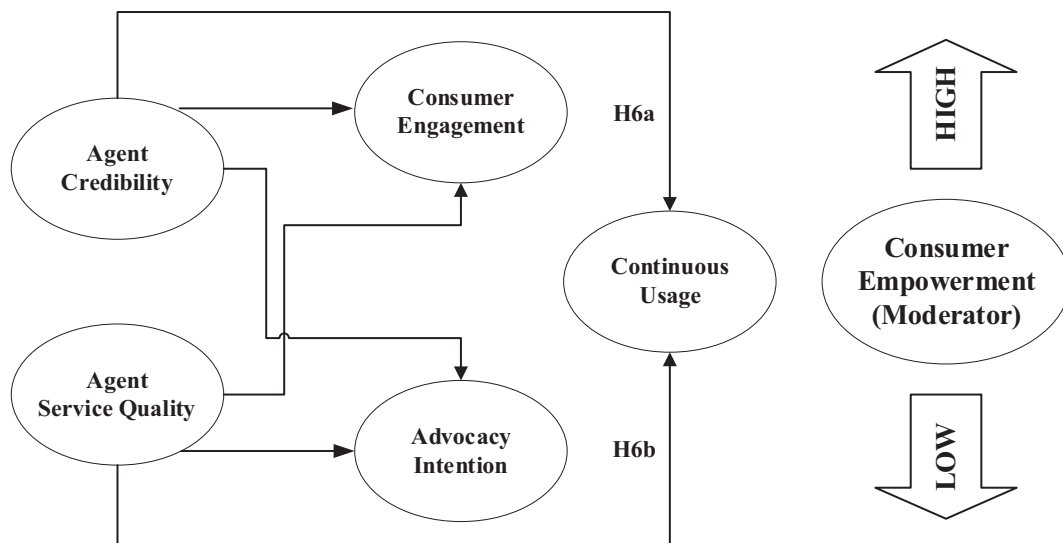**Fig. 3.** Proposed conceptual/Research model.

Fig. 4. Alternative research model.

correlations between consumer empowerment and increased consumer patronage intention. We therefore came up with the hypothesis below.

H3. : Consumer empowerment positively influences continuous usage.

3.3. Continuous usage, consumer engagement, and advocacy intention

Prior research has established a direct relationship between the continuous usage of a technological product or service and consumer engagement. For example, in the context of mobile banking application usage, Hepola et al. (2016) found that two significant dimensions of consumer engagement, affection and activation, are positively correlated with continuous usage intention. Similarly, in the mobile money context, Glavee-Geo et al. (2019) found a direct relationship between consumer engagement (affect) and continuous usage. We thus came up with the hypothesis below.

H4. : Continuous usage positively influences consumer engagement.

Similar to word of mouth and recommendation intention (Al-Ansi et al., 2019), the primary drivers of advocacy that build strong and deep relationships with customers are quality service, satisfaction, commitment, and trust. These drivers of advocacy then produce several outcomes, such as positive views, reviews, and recommendations from customers, and resistance to negative information about the company and its products or services.

The relationship between continuous usage or repurchase intention and advocacy intention has been previously established. In the study by Choi et al. (2015), customers' willingness to recommend a product or service to others was shown to be a result of their repurchase intention. That is, while examining a two-dimensional model of trust–value–loyalty in service relationships, such researchers found a significant relationship between repurchase intention and advocacy intention. We therefore came up with the hypothesis below.

H5. : Continuous usage positively influences advocacy intention.

3.4. The moderating role of consumer empowerment

We assume that, when a consumer is empowered to access, choose, and use a product or service, he/she will be better able to process complex information, make better decisions (Balderjahn et al., 2019), and achieve his/her goals in a meaningful way. A mobile money agent's credibility and service quality drive consumer empowerment in understanding, accepting, and using mobile money technology and services;

therefore, it would seem that consumer empowerment will amplify the relationship between the agent's credibility/service quality and the continuous usage of mobile money services.

Moreover, the mobile money business model provides frequent in-person communication and interactions between a FinTech's or bank's designated mobile money agent and the mobile money user. This personal interaction also increases the agent's timely responsiveness to the consumer's need, which in turn increases the agent's credibility, consumer empowerment, and consumer satisfaction level. We therefore posit that the element of empowerment among mobile money users is developed via the backdrop of the agent's credibility and the quality of his/her service, which either increase continuous usage or create sustained usage of the mobile money service. Therefore, in the mobile money context, we have introduced a promising moderating variable—consumer empowerment—and hypothesize the following:

H6a. : Consumer empowerment moderates the relationship between agent credibility and the continuous usage of mobile money services such that the relationship will be weaker when consumer empowerment is low.

H6b. : Consumer empowerment moderates the relationship between agent service quality and continuous usage of mobile money services such that the relationship will be weaker when consumer empowerment is low.

4. Research methodology

4.1. Measurement, data collection, and non-response bias

Using the purposeful-sampling technique, survey instrument developed on the scale from 1 (strongly disagree) to 7 (strongly agree). The data were collected from mobile money users in Ghana belonging to different socioeconomic groups. The scales and their sources are shown in Table 1. The analysis is based on 595 respondents using SmartPLS technique. Nonresponse bias was evaluated by comparing the responses of the first 25 % of respondents to the responses of the last 25 %. As no significant differences in the study constructs or demographics were found between the two groups ($p > 0.05$), nonresponse bias should not be an issue. The sample's demographic characteristics are shown in Table 2.

Table 1

Construct, indicators, and loadings (n = 595).

Construct	Indicators	M	SD	Loadings
Agent credibility Luarn and Lin (2005)	Using a mobile money agent service would not divulge my personal information (**CRD_AG1**)	4.49	1.40	0.815***
	I would consider a mobile money agent service secure for conducting my mobile money transactions (**CRD_AG2**)	4.50	1.42	0.847***
	A mobile money agent is like a friend to me because of his/her truthfulness (**CRD_AG3**)	4.03	1.45	0.807***
	A mobile money agent can always be relied upon when completing cash transactions (**CRD_AG4**)	4.22	1.49	0.788***
Agent service quality Kim et al. (2010)	The mobile money agent provides on-time services (**SRQ_AG1**)	4.54	1.50	0.844***
	The mobile money agent provides prompt responses (**SRQ_AG2**)	4.67	1.42	0.874***
	The mobile money agent provides professional services (**SRQ_AG3**)	4.35	1.44	0.809***
	The mobile money agent provides personalized services (**SRQ_AG4**)	4.40	1.43	0.737***
Customer engagement Hollebeek et al. (2014)	I usually use mobile money services regularly (**CENG1**)	4.22	1.76	0.642***
	I use mobile money services very often (**CENG2**)	4.19	1.84	0.636***
	I feel very positive when I am using mobile money services (**CENG3**)	4.93	1.40	0.831***
	Using mobile money services makes me happy (**CENG4**)	4.83	1.42	0.865***
	I feel good when I am using mobile money services (**CENG5**)	4.88	1.41	0.862***
	I am proud to use mobile money services (**CENG6**)	4.87	1.49	0.822***
	Using mobile money gets me to think about the service (**CENG7**)	4.67	1.51	0.516***
	I think about mobile money a lot when I'm using this service (**CENG8**)	4.45	1.48	0.600***
	Using mobile money stimulates my interest to learn more about this service (**CENG9**)	4.52	1.50	0.699***
Advocacy intention Zeithaml et al. (1996)	I say positive things about mobile money to other people (**ADV1**)	5.25	1.61	0.884***
	I recommend mobile money to anyone who seeks my advice (**ADV2**)	5.29	1.43	0.912***
	I encourage friends and relatives to use mobile money (**ADV3**)	5.29	1.53	0.902***
Continuous usage Zhou (2013)	I intend to continue using mobile money rather than discontinue its use (**CON1**)	5.23	1.66	0.909***
	My intentions are to continue using mobile money rather than to use any alternative means (**CON2**)	4.64	1.76	0.914***
Customer empowerment Vatanasombut et al. (2008).	The services offered from mobile money: Allow me to have control over my personal financial management (such as funds transfers and the payment of utility bills) (**EMP1**)	4.69	1.57	0.858***

Table 1 (*continued*)

Construct	Indicators	M	SD	Loadings
	Allow me to independently manage my personal finances (such as funds transfers and the payment of utility bills) (**EMP2**)	4.78	1.46	0.924***
	Let me exercise my judgment in managing my personal finances (such as funds transfers and the payment of utility bills) (**EMP3**)	4.68	1.43	0.917***
	Encourage my own initiative in managing my personal finances (such as funds transfers and the payment of utility bills) (**EMP4**)	4.71	1.42	0.913***
	Provide enough information to let me manage personal finances (such as funds transfers and the payment of utility bills) on my own (**EMP5**)	4.68	1.47	0.874***

M: Mean; SD: Standard deviation.

*** p < 0.001 (two-tailed).

Table 2

Demographic Characteristics (n = 595).

Demographic characteristics	Frequency	Percent
Gender		
Males	316	53.1
Females	279	46.9
Age (years)		
18–25	356	59.8
26–35	173	29.1
36–45	48	8.1
46–55	18	3.0
Highest level of education		
Junior High School	9	1.6
Senior High School	137	23
O' Level / A' Level	11	1.8
Polytechnic	17	2.9
Teacher training	4	0.7
Bachelor /Master	414	69.5
Ph.D.	3	0.5
Current employment status		
Student	346	58.2
Employee/professional	229	38.5
Unemployed	7	1.2
Entrepreneur	13	2.2
Usage frequency of cell phones		
<1 year	117	19.7
1–3 years	159	26.7
4–6 years	150	25.2
7–9 years	74	12.4
10–12 years	32	5.4
13–15 years	17	2.9
>15 years	46	7.7
MM Usage experience		
<1 month	85	14.3
1–4 months	92	15.5
5–8 months	82	13.8
9–12 months	118	19.8
13–16 months	69	11.6
17–20 months	37	6.2
>20 months	112	18.8

4.2. Common method variance

Common method variance (CMV) is a critical issue, especially in survey-based research, due to the inherent bias of the data collection method (Podsakoff and Organ, 1986). CMV is affected by several factors, including social desirability and the survey measurement procedures

(Podsakoff et al., 2003). To limit the impact of CMV, we used an a priori method to reduce its incidence (Hulland et al., 2018). For example, in the questionnaire design, we included a cover letter with an introductory opening that concealed the real purpose of the study. We then randomly ordered the sequence of the questionnaire and ensured that the dependent and independent variables in the survey were separated from each other. Finally, we avoided ambiguous scale items that are difficult to understand and interpret by pretesting the questionnaire.

5. Results

5.1. Measurement model; convergent and discriminant validity

The model (Fig. 3) consists of six main constructs. Using the two-step approach (Hair et al., 2019), we firstly evaluated the measurement model consisting of 27 items (indicators). Our evaluation focused on the factor loadings, item reliability, and convergence and discriminant validity. We found all factor loadings to be significant ($p < 0.001$) with a minimum loading of 0.516 and a maximum of 0.924 (see Table 1). We evaluated internal consistency using Fornell and Larcker's (1981a) composite reliability index and Cronbach's alpha. Average variance extracted values ranged from 0.53 to 0.83 ($>$ critical value of 0.5). All reliabilities (i.e., Cronbach's α and the ρC composite reliability) had values above 0.7 (Hair et al., 2019; Sarstedt et al., 2017). The results showed that the measures of all the constructs were reliable and achieved convergent validity. Discriminant validity was assessed using Fornell and Larcker's (1981b) criterion (see Table 3) and Henseler et al.'s (2015) heterotrait-monotrait (HTMT) ratio of correlations (see Table 3). All the HTMT values were substantially lower than 0.85, which provided enough evidence to show that the measurement model achieved discriminant validity.

5.2. Structural model evaluation

We evaluated the structural model using the bootstrapping functionality of SmartPLS 3 (Ringle et al., 2015). We hypothesized that agent credibility maintains a direct positive relationship with consumer empowerment (H1), while agent service quality continues a direct positive relationship with consumer empowerment (H2). We also found that high agent credibility increases customer empowerment ($p < 0.001$), while high agent service quality also increases customer empowerment ($p < 0.05$). Thus, we found support for H1 and H2.

Regarding H3, we proposed that consumer empowerment maintains a direct positive relationship with continuous usage behavior and found support for that statement. Consequently, continuous usage was hypothesized to influence consumer engagement (H4) and consumer advocacy (H5). Our analysis found very strong support for the positive influence of continuous usage on consumer engagement and on consumer advocacy intention. The strong and significant outcomes of continuous usage show the significant impact that customer empowerment and its antecedents (agent credibility and service quality) can achieve from a theoretical perspective. In this respect, we also assessed the moderating role of consumer empowerment. We found that, while customer empowerment was a significant moderator between agent

credibility and continuous usage, the same could not be said for agent service quality and continuous usage. The interaction (agent credibility x customer empowerment) was significant, while the interaction (agent service quality x customer empowerment) was insignificant. We controlled for age, gender, and income, none of which had any significant effect on continuous usage. The structural model results, effect sizes (f2), and collinearity (VIF) analysis for the full dataset (n = 595) are shown in Table 4.

To provide increased understanding of the drivers of continuous usage, we conducted an importance–performance analysis (IPMA). Regarding the constructs and standardized effects and with continuous usage (CONUS) as the target variable, the IPMA (Fig. 5) showed that agent credibility was of high importance compared to service quality. However, agent credibility fell below agent service quality regarding performance. Customer empowerment had the highest performance index. Regarding the indicators and standardized effects and with CONUS as the target variable, the IPMA (Fig. 6) showed the impact of the following specific agent characteristics and the elements of customer empowerment:

- Agent service characteristics: Privacy (indicated by CRD_AG1); security (indicated by CRD_AG2); truthfulness (indicated by CRD_AG3); reliability (indicated by CRD_AG4); timeliness (indicated by SRQ_AG1); responsiveness (indicated by SRQ_AG2); professionalism (indicated by SRQ_AG3); personalization (indicated by SRQ_AG4)

- Customer empowerment: Control of personal finance (indicated by EMP1); financial independence (indicated by EMP2); financial decision making (indicated by EMP3); personal financial initiatives (indicated by EMP4); access to financial information (indicated by EMP5)

The IPMA results revealed that privacy and security had the greatest importance, and professionalism and personalization had the least importance. Timeliness had a medium level of importance with control of personal finance. In terms of performance, the customer empowerment element of financial independence had the highest performance index, and truthfulness had the lowest performance index. A summary of the IPMA results is shown in Figs. 5 and 6.

5.3. Post-hoc analysis

Finally, we conducted a post-hoc analysis with an alternative model. We respecified the antecedents (agent credibility and agent service quality) that influence continuous usage and consequently did so with consumer engagement and advocacy intention. In addition, agent credibility and service quality were postulated to influence consumer engagement and advocacy intention directly, and the alternative model was estimated simultaneously. We firstly used the mean value of the empowerment construct (4.71) to create a dummy variable, with values below the mean coded as 0 (less empowerment) and values above the mean coded as 1 (more empowerment).

The goals were to investigate whether the results and findings based

Table 3
Reliability, average variance extracted (AVEs), and discriminant validity assessment (n = 595).

Construct	Cronbach's alpha	Composite reliability	AVE	1	2	3	4	5	6
Agent credibility (1)	0.83	0.89	0.66	**0.82**	0.53	0.49	0.59	0.52	0.33
Agent service quality (2)	0.84	0.89	0.67	0.44	**0.82**	0.34	0.42	0.43	0.30
Consumer empowerment (3)	0.94	0.95	0.81	0.43	0.30	**0.90**	0.53	0.53	0.45
Continuous usage (4)	0.79	0.91	0.83	0.48	0.36	0.46	**0.91**	0.66	0.57
Consumer engagement (5)	0.89	0.91	0.53	0.47	0.38	0.49	0.57	**0.73**	0.68
Advocacy intention (6)	0.88	0.93	0.81	0.28	0.25	0.42	0.48	0.61	**0.90**

Note: Bold numbers on the diagonal show the square root of the AVEs; numbers below the diagonal represent construct correlations. Heterotrait-monotrait (HTMT) ratios are shown above the diagonal.

Table 4

Structural model results, effect sizes (f^2), and collinearity (*VIF*) (n = 595) (original model).

Criterion	R^2	Predictors	Path coefficients	*t*-Values[#]	f^2	*VIF*
Consumer empowerment	0.20	Agent credibility	0.37***	7.51	0.14	1.24
		Agent service quality	0.14**	2.81	0.02	1.24
Continuous usage	0.35	Agent credibility	0.27***	6.18	0.08	1.44
		Agent service quality	0.16***	3.82	0.03	1.32
		Consumer empowerment	0.27***	6.15	0.09	1.29
		Agent credibility x Consumer empowerment	−0.13***	4.48	0.04	1.27
		Agent service quality x Consumer empowerment	0.03	0.80		1.24
		Age	0.01	0.16		1.37
		Gender	0.004	0.11		1.02
		Income	0.06	1.32		1.35
Consumer engagement	0.33	Continuous usage	0.57***	17.42	0.49	1.00
Advocacy intention	0.23	Continuous usage	0.48***	11.21	0.29	1.00

[#] Based on 10,000 bootstrapping samples.

*** $p < 0.001$.

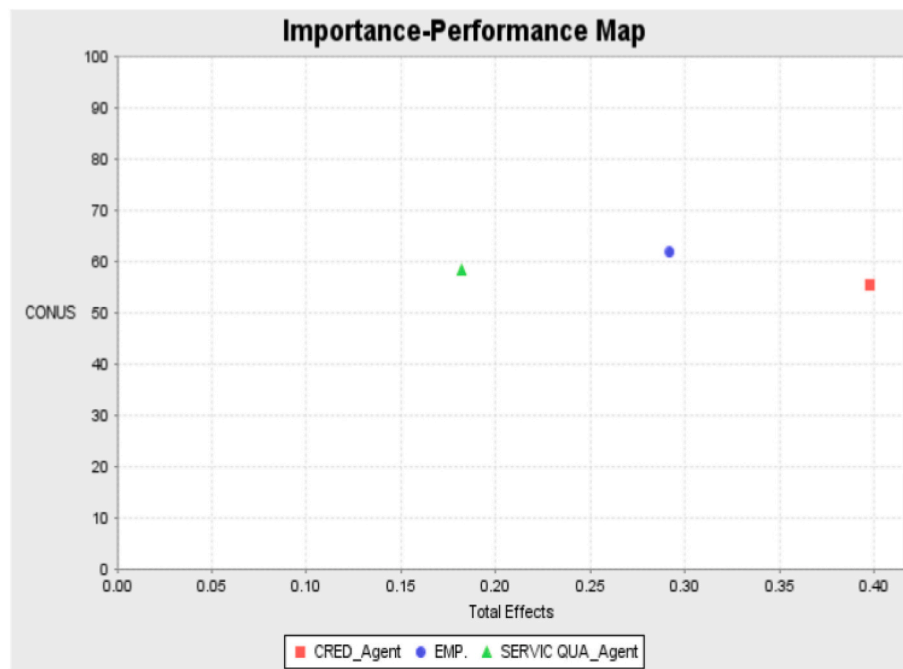** $p < 0.05$ (two-tailed).

Fig. 5. Importance-Performance Map (Constructs and standardized effects) with target variable continuous usage.

on the original research model were consistent with the respecified model and to examine the direct effect of agent credibility and agent service quality on consumer engagement and advocacy intention. The results showed that agent credibility and service quality had a significant effect on continuous usage and consumer engagement (Table 5). The continuous usage effect on consumer engagement and advocacy intention were significant. However, the direct effects of agent credibility and service quality on advocacy intention were insignificant. Our analysis showed that the agent credibility effect on advocacy intention was mediated by continuous usage. Similarly, service quality's effect on advocacy intention was also mediated by continuous usage, which was evidenced by the significant indirect effects shown in Table 6. Lastly, the results of the multigroup analysis (Table 5) showed that the effect of agent credibility on continuous usage was significantly greater (β1 - β2 = 0.27, p < 0.01) for the less empowered (n = 291, p < 0.001) than for the more empowered (n = 304, p < 0.05) customer segments. No significant differences were observed between the two samples regarding the effect of agent service quality on continuous usage. Agent service quality significantly increased continuous usage for both the less empowered (n = 291, p < 0.01) and the more empowered (n = 304, p <

0.01) customer segments, with no significant difference found (β1 - β2 = 0.06, p > 0.05).

6. Discussion and conclusion

6.1. Theoretical contributions

The study makes several contributions to theory. It begins with seeking answers to the following questions: RQ1) How prominent are mobile money agent characteristics in promoting customer empowerment that leads to digital/financial inclusion? RQ2) What matters most for less financially included customers in terms of mobile money agent credibility versus service quality? RQ3) Which mobile money agent characteristics are particularly essential to prioritize for managerial as well as regulatory actions? In our search for answers, we integrated the S-O-R framework (Mehrabian and Russell, 1974; Vieira, 2013) with consumer empowerment theory and the services literature to explain technology/innovation adoption. Regarding RQ1, we found that the exchanges and interactions between the agent, the customer, and the digital financial platform provided by mobile money technology
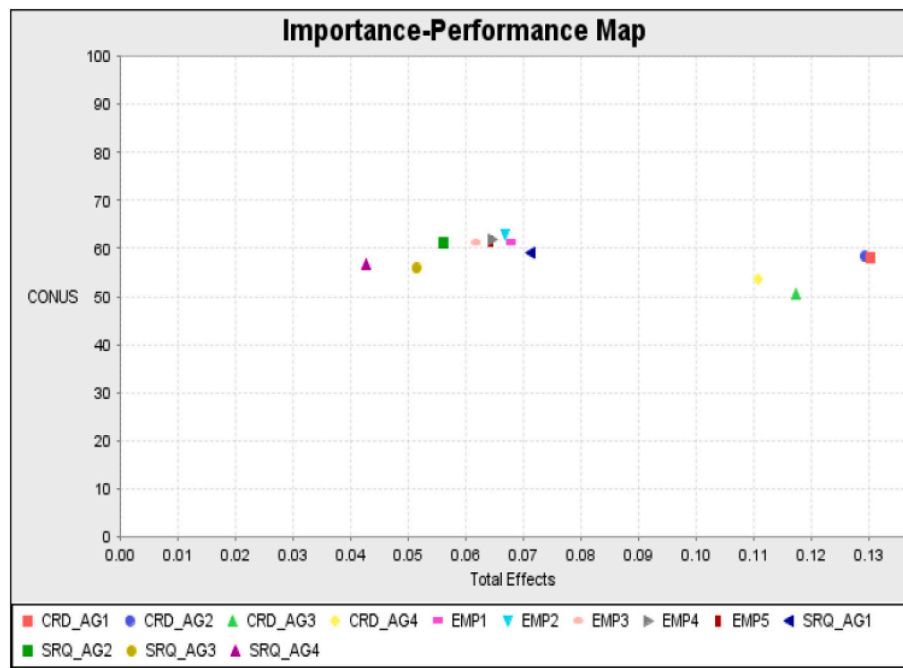
Fig. 6. Importance-Performance Map (Indicators and standardized effects) with target variable continuous usage.

Table 5
Structural model results and t-statistic for multi-group analysis (alternative model).

Criterion	Predictors	Combined (n = 595)		Less empowered (n = 291)		More empowered (n = 304)		β_1 - β_2	t-Value
		Path coefficient (β)	t-Value	Path coefficient (β_1)	t-Value	Path coefficient (β_2)	t-Value		
Continuous usage	Agent credibility	0.40	8.60***	0.45	8.47***	0.18	2.41*	0.27	2.92 **
	Agent service quality	0.18	4.01***	0.17	2.68 **	0.23	3.15 **	0.06	0.60
Consumer engagement	Agent credibility	0.20	4.77***	0.20	3.15 **	0.14	2.32*	0.06	0.70
	Agent service quality	0.14	2.90**	0.04	0.52 ns	0.17	2.38*	0.13	1.18
	Continuous usage	0.42	9.58***	0.40	5.74***	0.37	6.62***	0.03	0.29
Advocacy intention	Agent credibility	0.05	1.03 ns	0.01	0.18 ns	−0.001	0.02 ns	0.01	0.14
	Agent service quality	0.08	1.86 ns	0.06	0.77 ns	0.03	0.43 ns	0.04	0.34
	Continuous usage	0.43	9.71***	0.43	7.24***	0.28	4.54***	0.15	1.78

*** Significant at p < 0.001 level (two-tailed test).
** Significant at p < 0.01 (two-tailed test).
* Significant at p < 0.05 (two-tailed test).
ns Not significant.

Table 6
Unique indirect effects (alternative model) (n = 595).

Mediation relationship	Indirect effect	t-Values[#]
Agent credibility ➔ Continuous usage ➔ Advocacy intention	0.17	6.20***
Agent service quality ➔ Continuous usage ➔ Advocacy intention	0.08	3.66***
Agent credibility ➔ Continuous usage ➔ Consumer engagement	0.17	6.41***
Agent service quality ➔ Continuous usage ➔ Consumer engagement	0.08	3.49***

[#] Based on 1000 bootstrapping samples.
*** p < 0.001 (two-tailed), mediator variable shown between arrows.

(FinTech) gives a powerful impetus to financial inclusion. The agent plays a key role in the customer empowerment process. Agent service characteristics have a significant impact on customer empowerment. Our study also shows that, although both service quality and agent credibility significantly impact empowerment (Rezabakhsh et al., 2006),

the service agent's credibility has a more substantial impact on customer empowerment. Concerning RQ2, the study suggests that, for less financially included customers, mobile money agent credibility could be a key factor in boosting usage. For example, privacy and security issues remain a top customer concern, followed by concern for the agent's level of truthfulness and service reliability. The ability to perform a function is associated with continuous usage. An empowered consumer is in a better position to use or discontinue a service. However, a sense of helplessness can lead to consumer demotivation (Füller et al., 2009; Gu et al., 2009).

Moreover, we suggest that the customer engagement process is more feasible when the agent possesses characteristics that can provide favorable customer journeys and experiences. Regarding RQ3, the study identified agent credibility and its elements - truthfulness and reliability as essential to prioritize for managerial as well as regulatory actions. However, privacy and security seem to be the top concern of consumers (Semerikova, 2020). The low level of professionalism implies the need for some interventions (e.g. training) so as to improve the performance of the service agents. Nonetheless, the findings of the present study can be summarized in a four-point proposition as follows: 1) The perceived

credibility of the agent and the extent of service quality can stimulate the efficacious ability of the customer/consumer (Rezabakhsh et al., 2006); 2) consumer empowerment is strongly related to continuous usage (Hartmann et al., 2018); 3) for the less empowered consumer segment, agent/source credibility enhances continuous usage (Erkan and Evans, 2016); and 4) the service characteristics of the agent affect the further engagement and advocacy intentions of the consumer.

6.2. Managerial implications

In mobile money services, the agent occupies a key position; therefore, mobile money is sometimes referred to as "agent banking." Our findings highlight the need for financial and Fintech companies to increase the credibility of frontline staff (i.e., agents) to ensure the smooth execution of mobile money transactions and the reliability and confidentiality of these transactions as well as to protect the privacy of the customers who are executing these transactions. This could be achieved by streamlining the operational processes with periodic agent onboarding and training and enhancing agent monitoring.

One of the objectives of our study was to examine which mobile money agent characteristics are particularly important to prioritize regarding managerial as well as regulatory actions. The results showed that the agent service characteristics of professionalism and personalization were of low importance, while truthfulness and reliability were low on the performance index. Hence, the industry needs to prioritize improving service agents' characteristics to deliver quality service and experiences to consumers. For regulators, the policies and procedures governing the mobile money (or branchless banking in some Asian countries) industry should ensure the service integrity, safety, and security of mobile money transactions. For example, lack of trust in financial institutions and low financial literacy among the majority of the rural population can hinder financial participation, but mobile agents can offset that by building trust and credibility.

An in-person interaction can be invaluable in helping new users develop a better understanding and relationship with the mobile money platform's features and capabilities, which will increase both the number of active users and the services that they use. This can lead to sustainable financial inclusion (Loughran, 2019).

Empowering consumers or mobile money users (and keeping them well informed about the usage of the services) is an interesting matter that needs careful consideration and attention from the service providers, such as banks and FinTech. Nonetheless, the mobile money industry should be mindful when seeking to empower consumers because most mobile money users are not tech-savvy and thus still need to depend on the mobile money agents. However, due to the COVID-19 pandemic and the resulting social distancing, which have drastically changed the business and service landscape, the element of "consumer empowerment" has become more important and meaningful. Empowered and well-informed consumers can easily sustain the pandemic-related shocks and can continue using the services conveniently and remotely to attain a variety of goals, without any interruption or discontinuation of the services. This empowerment, however, is not tantamount to achieving ubiquitous autonomy (Schweitzer and Simon, 2021), which allows consumers complete independence in accessing and using services such as mobile money services. This is perhaps not possible in the case of mobile money services, and a degree of intervention from the agent will be required.

Relevant to consumer empowerment is the concept of digital divide. Empowered and well-informed consumers will reduce the digital-divide gap, which can otherwise impact the adoption and usage of mobile money services. The banking companies, Fintech, and other third-party service providers should value consumer empowerment and pursue it through different means, such as by offering digital education, holding awareness campaigns, and training the people in rural areas in using digital applications (Pontones-Rosa et al., 2021). These initiatives will reduce the digital divide in the rural and urban segments and will

increase the capacity of the people in rural areas to exploit their digital potential when accessing and using innovative services such as mobile money services. Alternatively, a wider digital divide will create a debacle for the relevant companies and service providers because the new products and services added to the mobile money platforms are not likely to be accepted and used by the less empowered and informed consumers, thereby making such product and service delivery channel less attractive.

6.3. Social implications

Among the major social implications, this study includes financial inclusion, which gained prominence after the introduction of mobile money in most developing and emerging countries. In terms of financial inclusion, our study provides evidence that is based on a theoretical model, which seeks to suggest that technology and service innovation can provide the impetus to digital financial inclusion and have a significant impact on transforming societies by way of documenting the transactions, reducing the instances of corruption, and promoting savings.

In addition, desirable and efficient social change that is associated with the initiatives concerning financial inclusion can be realized through designing and implementing a comprehensive strategy considering three major parameters: 1) designating the mobile money agent and deploying the digital platforms in the areas that are virtually inaccessible to offer digital banking and payment solutions; 2) empowering the less privileged with the help of a designated agent network, as evident from the results of this survey study, to understand, access, and use innovative mobile money services; and 3) designing and implementing a comprehensive set of rules, regulations, and standard operating procedures to safeguard the interest of the poor while maintaining consumer trust in mobile money services.

Another significant social implication is effectively reaching the forcibly displaced segment of the population in the wake of the recent refugee crises. Per recent estimates released by the GSMA (2021), over 235 million people required humanitarian assistance, stable financial support, and protection in 2021, which is an increase of 40 % from pre-pandemic levels. With the help of mobile money technology and an agent distribution network, the service provider can establish partnerships with governments, organizations, NGOs, and humanitarian organizations to facilitate the disbursement of financial support and provide access to necessary financial services to displaced populations.

6.4. Limitations and future research directions

This study is not without limitations. Several factors that were not considered by the present study could influence consumer empowerment. For example, the extent of user's involvement in the co-creation of the service could affect perceived empowerment. Higher involvement leads to focused attention in computer-mediated interactions such that highly involved consumers consider themselves experts (Bloch, 1986; Füller et al., 2009). The fear of agent opportunism could enhance the uncertainty and risk of the use of mobile money services and consequently affect the extent of customer empowerment. Agent opportunism significantly increases transaction uncertainty (Pavlou et al., 2007). Future research could consider other factors that are not discussed here. The cross-sectional nature of the study could also be a limitation; hence, there is a need for more longitudinal studies. The dataset that was used in the current study is heavily represented by highly literate respondents. Future studies should consider samples with varied respondent demographics. Though it was not the aim of the current study to achieve external validity, future studies that consider the issues highlighted here would help achieve high external validity and generalizability.

The fast proliferation of mobile money models in various countries across the globe has created a diverse mobile money market that is

accessible by various consumer segments in both rural and urban areas and has offered a diverse portfolio of services across the spectrum of financial services. This has changed the mindset of the financial houses, policymakers, and developers who traditionally considered mobile money a buzzword for the less privileged. Accordingly, it is worthwhile to expand the research scope and examine the popularity as well as the usage of mobile money services by financially included and excluded populations.

We could not examine whether there are gender differences when adopting and using mobile money services in Africa and elsewhere, but there could be different parameters for male and female populations. In addition, the gender gap in designating the mobile money agent could also hinder the usage and wider spread of mobile money services. For example, in most rural areas in indigenous societies with huge gender disparities, a female agent could emerge as a powerful tool for reaching and facilitating the female mobile money customer base and is therefore, worthy of investigation.

The lifeline of mobile money and related financial technological solutions is widely considered the mobile money agent. We have provided the consumer perspective with the help of empirical evidence to suggest that agent credibility and service quality stimulate customer empowerment in general. Furthermore, we argue that, for the less financially empowered, mobile money agent credibility provides the needed impetus for the continuous use of mobile money services. Future research could examine the motivations of the mobile money agent when providing services to the unbanked population; the challenges faced by these agents in creating a consumer base; and awareness of mobile money services in remote areas.

This paper provides insight into how the various constructs (e.g., customer empowerment) could be operationalized in future studies. The paper presents a conceptual model that is well-grounded in theory and can be replicated and tested in several contexts and empirical settings in several emerging and developing countries. Therefore, more studies in this newly emerging field are recommended.

The existence of a digital divide between rural and urban areas and between developing and developed countries is corroborated by research (cf. Pontones-Rosa et al., 2021). According to the United Nations Department of Economic and Social Affairs (2016), the digital divide is the gap between individuals, households, and businesses at different socioeconomic levels in their ability to use information and telecommunication technologies, including the Internet, for accessing and using a wide variety of services and activities. Moreover, digital divide is a multidimensional construct with three major dimensions: (1) adoption and usage of a technology or service (Friemel, 2016); (2) capability to use Internet-related technologies, skills, and literacy; and (3) use of digital technologies to obtain a specific benefit (Scheerder et al., 2017). While keeping representative gender and age proportions, these digital-divide dimensions provide amazing future research avenues especially in the case of mobile money services, and are therefore worth considering. For example, it will be meaningful to assess the impact of digitalization plans for the less privileged in remote/rural areas on their usage of formal payment services such as mobile money services and on their financial inclusion.

Mobile money services and the sparsely distributed agent network can survive any pandemic, including the COVID-19 pandemic. Nonetheless, after struggling with the pandemic situation for over two years, the world is fast entering the post-COVID-19-pandemic phase. The financial industry has somehow survived due to its adoption of a multichannel approach and the presence of many alternative delivery channels providing remote access for the everyday banking and payment needs of the consumers via mobile platforms and the Internet, and facilitating e-shopping and online payments. Future research may delve into this newly emerging research area (i.e., after the COVID-19 pandemic). Studies can investigate how innovative services like mobile money services have helped consumers and various communities conduct financial transactions without compromising the social-

distancing parameters, and can look into the possibility of the contactless or remote access of financial and payment services becoming the new normal. After all, the disruptive yet very famous Burger King slogan "Have It Your Way" (Khenfer et al., 2020) has become the reality and motivation for many firms during the COVID-19 pandemic and is likely to remain such even post-pandemic.

CRediT authorship contribution statement

All four authors made significant contributions to this paper, without which publication would not have been possible. All the authors participated in the data collection process. All authors have read and agreed to the published version of the manuscript.

Aijaz A. Shaikh: Conceptualization, Intro, Theory, Hypothesis sections, Writing- Original draft preparation, Data collection. **Richard Glavee-Geo**: Survey design and its pre-testing, Data collection, Data curation, Validation, Methodology, Software (SmartPLS), Results section. **Heikki Karjaluoto:** Project administration, Writing- Reviewing and Editing. **Robert Ebo Hinson:** Data collection, Discussion, implications, limitations, and future research directions sections.

References

Al-Ansi, A., Olya, H.G., Han, H., 2019. Effect of general risk on trust, satisfaction, and recommendation intention for halal food. Int. J. Hosp. Manag. 83, 210–219.

Asongu, S.A., Biekpe, N., Cassimon, D., 2020. Understanding the greater diffusion of mobile money innovations in Africa. Telecommun. Policy 44 (8), 1–13. https://doi. org/10.1016/j.telpol.2020.102000.

Ayeh, J.K., Au, N., Law, R., 2013. "Do we believe in TripAdvisor?" Examining credibility perceptions and online travelers' attitude toward using user-generated content. J. Travel Res. 52 (4), 437–452. https://doi.org/10.1177/0047287512475217.

Balderjahn, I., Lee, M.S., Seegebarth, B., Peyer, M., 2019. A sustainable pathway to consumer wellbeing. The role of anticonsumption and consumer empowerment. J. Consum. Aff. 54 (2), 456–488. https://doi.org/10.1111/joca.12278.

Batista, C., Vicente, P.C., 2020. Improving access to savings through mobile money: experimental evidence from African smallholder farmers. World Dev. 129, 1–17. https://doi.org/10.1016/j.worlddev.2020.104905.

Bazarbash, M., Moeller, J., Griffin, N.N., Villanova, H.C., Chhabra, E., Fan, Y., Shirono, K., 2020. Mobile Money in the COVID-19 Pandemic. From. Accessed date: November 2021. file://fileservices.ad.jyu.fi/homes/aiahshai/Downloads/Mobi leMoneyintheCOVID-19Pandemic.pdf.

Bergen, M., Shantanu, D., Orville, C.W., 1992. Agency relationships in marketing: a review of the implications and applications of agency and related theories. J. Mark. 56 (6), 1–24. https://doi.org/10.1177/002224299205600301.

Bloch, P.H., 1986. The product enthusiast: implications for marketing strategy. J. Consum. Mark. 3 (3), 51–63. https://doi.org/10.1108/eb008170.

Boonlertvanich, K., 2019. Service quality, satisfaction, trust, and loyalty: the moderating role of main-bank and wealth status. Int. J. Bank Mark. 37 (1), 278–302. https://doi.org/10.1108/IJBM-02-2018-0021.

Bowden, J.L.H., 2009. The process of customer engagement: a conceptual framework. J. Mark. Theory Pract. 17 (1), 63–74. https://doi.org/10.2753/MTP1069-6679170105.

Brodie, R.J., Ilic, A., Juric, B., Hollebeek, L., 2013. Consumer engagement in a virtual brand community: an exploratory analysis. J. Bus. Res. 66 (1), 105–114. https://doi.org/10.1016/j.jbusres.2011.07.029.

CGAP, 2018. How Ghana Became One of Africa's Top Mobile Money Markets? From: http://www.cgap.org/blog/how-ghana-became-one-africa%E2%80%99s-top-mobile-money-markets (Accessed date: August 2020).

Choi, H., Jang, J., Kandampully, J., 2015. Application of the extended VBN theory to understand consumers' decisions about green hotels. Int. J. Hosp. Manag. 51, 87–95. https://doi.org/10.1016/j.ijhm.2015.08.004.

Clow, K.E., James, K.E., Kranenburg, K.E., Berry, C.T., 2006. The relationship of the visual element of an advertisement to service quality expectations and source credibility. J. Serv. Mark. 20 (6), 404–411. https://doi.org/10.1108/08876040610691293.

de Luna, I.R., Liébana-Cabanillas, F., Sánchez-Fernández, J., Muñoz-Leiva, F., 2018. Mobile payment is not all the same: the adoption of mobile payment systems depending on the technology applied. Technol. Forecast. Soc. Chang. 146, 931–944. https://doi.org/10.1016/j.techfore.2018.09.018.

Dermish, A., Kneiding, C., Leishman, P., Mas, I., 2011. Branchless and mobile banking solutions for the poor: a survey of the literature. Innovations 6 (4), 81–98. https://doi.org/10.2139/ssrn.1745967.

Du, S., Bhattacharya, C.B., Sen, S., 2007. Reaping relational rewards from corporate social responsibility: the role of competitive positioning. Int. J. Res. Mark. 24 (3), 224–241. https://doi.org/10.1016/j.ijresmar.2007.01.001.

Eisenhardt, K.M., 1989. Agency theory: an assessment and review. Acad. Manag. Rev. 14 (1), 57–74. https://doi.org/10.5465/amr.1989.4279003.

Erkan, I., Evans, C., 2016. The influence of eWOM in social media on consumers' purchase intentions: an extended approach to information adoption. Comput. Hum. Behav. 61, 47–55. https://doi.org/10.1016/j.chb.2016.03.003.

Eroglu, S.A., Machleit, K.A., Davis, L.M., 2001. Atmospheric qualities of online retailing: a conceptual model and implications. J. Bus. Res. 54 (2), 177–184. https://doi.org/10.1016/S0148-2963(99)00087-9.

Eroglu, S.A., Machleit, K.A., Davis, L.M., 2003. Empirical testing of a model of online store atmospherics and shopper responses. Psychol. Mark. 20 (2), 139–150. https://doi.org/10.1002/mar.10064.

Fornell, C., Larcker, D.F., 1981a. Evaluating structural equation models with unobservable variables and measurement error. J. Mark. Res. 18 (1), 39–50.

Fornell, C., Larcker, D.F., 1981b. Structural equation models with unobservable variables and measurement error: algebra and statistics. J. Mark. Res. 18 (3), 382–388.

Friemel, T.N., 2016. The digital divide has grown old: determinants of a digital divide among seniors. New Media Soc. 18 (2), 313–331. https://doi.org/10.1177/1461444814538648.

Füller, J., Mühlbacher, H., Matzler, K., Jawecki, G., 2009. Consumer empowerment through internet-based co-creation. J. Manag. Inf. Syst. 26 (3), 71–102.

Garvin, D., 1983. Quality on the line-reply. Harv. Bus. Rev. 61 (6), 240.

Gazzoli, G., Hancer, M., Park, Y., 2010. The role and effect of job satisfaction and empowerment on customers' perception of service quality: a study in the restaurant industry. Journal of Hospitality & Tourism Research 34 (1), 56–77. https://doi.org/10.1177/1096348009344235.

Glavee-Geo, R., Shaikh, A.A., Karjaluoto, H., Hinson, R.E., 2019. Drivers and outcomes of consumer engagement: insights from mobile money usage in Ghana. Int. J. Bank Mark. 38 (1), 1–20. https://doi.org/10.1108/IJBM-01-2019-0007.

Global Finance, 2021. World's Most Unbanked Countries 2021. From: https://www.gfmag.com/global-data/economic-data/worlds-most-unbanked-countries. (Accessed 2 November 2021).

GSMA, 2021. 2021 State of the Industry Report on Mobile Money. From: https://www.gsma.com/mobilefordevelopment/wp-content/uploads/2021/03/GSMA_State-of-the-Industry-Report-on-Mobile-Money-2021_Full-report.pdf (Accessed date: October 2021).

Gu, J.C., Lee, S.C., Suh, Y.H., 2009. Determinants of behavioral intention to mobile banking. Expert Syst. Appl. 36 (9), 11605–11616. https://doi.org/10.1016/j.eswa.2009.03.024.

Hair, J.F., Risher, J.J., Sarstedt, M., Ringle, C.M., 2019. When to use and how to report the results of PLS-SEM. Eur. Bus. Rev. 31 (1), 2–24. https://doi.org/10.1108/EBR-11-2018-0203.

Hartmann, P., Apaolaza, V., D'Souza, C., 2018. The role of psychological empowerment in climate-protective consumer behaviour: an extension of the value-belief-norm framework. Eur. J. Mark. 52 (1/2), 392–417. https://doi.org/10.1108/EJM-01-2017-0080.

Henseler, J., Ringle, C.M., Sarstedt, M., 2015. A new criterion for assessing discriminant validity in variance-based structural equation modeling. J. Acad. Mark. Sci. 43 (1), 115–135.

Hepola, J., Karjaluoto, H., Shaikh, A.A., 2016. Consumer engagement and behavioral intention toward continuous use of innovative mobile banking applications: a case study of Finland. In: ICIS 2016: Proceedings of the Thirty Seventh International Conference on Information Systems. Digital Innovation at the Crossroads, Association for Information Systems (AIS).

Hollebeek, L.D., 2011. Exploring customer brand engagement: definition and themes. J. Strateg. Mark. 19 (7), 555–573. https://doi.org/10.1080/0965254X.2011.599493.

Hollebeek, L.D., Glynn, M.S., Brodie, R.J., 2014. Consumer brand engagement in social media: conceptualization, scale development and validation. J. Interact. Mark. 28 (2), 149–165. https://doi.org/10.1016/j.intmar.2013.12.002.

Hu, H.F., Krishen, A.S., 2019. When is enough, enough? Investigating product reviews and information overload from a consumer empowerment perspective. J. Bus. Res. 100, 27–37. https://doi.org/10.1016/j.jbusres.2019.03.011.

Hulland, J., Baumgartner, H., Smith, K.M., 2018. Marketing survey research best practices: evidence and recommendations from a review of JAMS articles. J. Acad. Mark. Sci. 46 (1), 92–108.

Hussain, S., Ahmed, W., Jafar, R.M.S., Rabnawaz, A., Jianzhou, Y., 2017. eWOM source credibility, perceived risk and food product customer's information adoption. Comput. Hum. Behav. 66, 96–102. https://doi.org/10.1016/j.chb.2016.09.034.

Islam, J.U., Rahman, Z., 2017. The impact of online brand community characteristics on customer engagement: an application of stimulus-organism-response paradigm. Telematics Inform. 34 (4), 96–109. https://doi.org/10.1016/j.tele.2017.01.004.

Islam, J.U., Shahid, S., Rasool, A., Rahman, Z., Khan, I., Rather, R.A., 2020. Impact of website attributes on customer engagement in banking: a solicitation of stimulus-organism-response theory. Int. J. Bank Mark. 38 (6), 1279–1303. https://doi.org/10.1108/IJBM-12-2019-0460.

Ismagilova, E., Slade, E., Rana, N.P., Dwivedi, Y.K., 2019. The effect of characteristics of source credibility on consumer behaviour: a meta-analysis. J. Retail. Consum. Serv. 53, 1–9. https://doi.org/10.1016/j.jretconser.2019.01.005.

Jiang, J.Y., Sun, L.Y., Law, K.S., 2011. Job satisfaction and organization structure as moderators of the effects of empowerment on organizational citizenship behavior: a self-consistency and social exchange perspective. Int. J. Manag. 28 (3), 675–693.

Kabbiri, R., Dora, M., Kumar, V., Elepu, G., Gellynck, X., 2018. Mobile phone adoption in Agri-food sector: are farmers in sub-saharan Africa connected? Technol. Forecast. Soc. Chang. 131, 253–261. https://doi.org/10.1016/j.techfore.2017.12.010.

Kang, J.W., Namkung, Y., 2019. The information quality and source credibility matter in customers' evaluation toward food O2O commerce. Int. J. Hosp. Manag. 78, 189–198. https://doi.org/10.1016/j.ijhm.2018.10.011.

Khenfer, J., Shepherd, S., Trendel, O., 2020. Customer empowerment in the face of perceived incompetence: effect on preference for anthropomorphized brands. J. Bus. Res. 118, 1–11. https://doi.org/10.1016/j.jbusres.2020.06.010.

Kim, C., Mirusmonov, M., Lee, I., 2010. An empirical examination of factors influencing the intention to use mobile payment. Comput. Hum. Behav. 26 (3), 310–322. https://doi.org/10.1016/j.chb.2009.10.013.

Lashitew, A.A., van Tulder, R., Liasse, Y., 2019. Mobile phones for financial inclusion: what explains the diffusion of mobile money innovations? Res. Policy 48 (5), 1201–1215. https://doi.org/10.1016/j.respol.2018.12.010.

Lepoutre, J., Oguntoye, A., 2018. The (non-) emergence of mobile money systems in sub-saharan Africa: a comparative multilevel perspective of Kenya and Nigeria. Technol. Forecast. Soc. Chang. 131, 262–275. https://doi.org/10.1016/j.techfore.2017.11.010.

Li, Z., 2016. Psychological empowerment on social media: who are the empowered users? Public Relat. Rev. 42 (1), 49–59. https://doi.org/10.1016/j.pubrev.2015.09.001.

Lin, M., Wu, X., Ling, Q., 2017. Assessing the effectiveness of empowerment on service quality: a multi-level study of Chinese tourism firms. Tour. Manag. 61, 411–425. https://doi.org/10.1016/j.tourman.2017.03.001.

Loughran, M., 2019. Latin America's mobile money agents are the drivers of real financial inclusion. Retrieved 20 March 2020 from: https://medium.com/uulala/latin-americas-mobile-money-agents-are-the-drivers-of-real-financial-inclusion-ff3d050cacff. Accessed 20.03.2020.

Luarn, P., Lin, H.H., 2005. Toward an understanding of the behavioral intention to use mobile banking. Comput. Hum. Behav. 21, 873–891.

McKinsey & Co., 2018. Mobile money in emerging markets: the business case for financial inclusion. From: https://www.mckinsey.com/industries/financial-services/our-insights/mobile-money-in-emerging-markets-the-business-case-for-financial-inclusion. Accessed date: February 2020.

McLean, G., 2018. Examining the determinants and outcomes of mobile app engagement - a longitudinal perspective. Comput. Hum. Behav. 84, 392–403. https://doi.org/10.1016/j.chb.2018.03.015.

Mehrabian, A., Russell, J., 1974. An Approach to Environmental Psychology. MIT Press, Cambridge, MA.

Midha, V., 2012. Impact of consumer empowerment on online trust: an examination across genders. Decis. Support. Syst. 54 (1), 198–205. https://doi.org/10.1016/j.dss.2012.05.005.

Mogaji, E., Adeola, O., Hinson, R.E., Nguyen, N.P., Nwoba, A.C., Soetan, T.O., 2021. Marketing bank services to financially vulnerable customers: evidence from an emerging economy. Int. J. Bank Mark. 39 (3), 402–428. https://doi.org/10.1108/IJBM-07-2020-0379.

Mollen, A., Wilson, H., 2010. Engagement, telepresence and interactivity in online consumer experience: reconciling scholastic and managerial perspectives. J. Bus. Res. 63 (9/10), 919–925. https://doi.org/10.1016/j.jbusres.2009.05.014.

Odoom, R., Kosiba, J.P., 2020. Mobile money usage and continuance intention among micro enterprises in an emerging market – the mediating role of agent credibility. J. Syst. Inf. Technol. 22 (4), 97–117. https://doi.org/10.1108/JSIT-03-2019-0062.

Parasuraman, A., Zeithaml, V.A., Berry, L.L., 1994. Alternative scales for measuring service quality: a comparative assessment based on psychometric and diagnostic criteria. J. Retail. 70 (3), 201–230. https://doi.org/10.1016/0022-4359(94)90033-7.

Park, S.J., Lee, Y.R., Borle, S., 2018. The shape of word-of-mouth response function. Technol. Forecast. Soc. Chang. 127, 304–309. https://doi.org/10.1016/j.techfore.2017.10.006.

Pavlou, P.A., Liang, H., Xue, Y., 2007. Understanding and mitigating uncertainty in online exchange relationships: a principal-agent perspective. MIS Q. 31 (1), 105–136. https://doi.org/10.2307/25148783.

Pelletier, A., Khavul, S., Estrin, S., 2020. Innovations in emerging markets: the case of mobile money". Ind. Corp. Chang. 29 (2), 395–421. https://doi.org/10.1093/icc/dtz049.

Podsakoff, P.M., Organ, D.W., 1986. Self-reports in organizational research: problems and prospects. J. Manag. 12 (4), 531–544.

Podsakoff, P.M., MacKenzie, S.B., Lee, J.Y., Podsakoff, N.P., 2003. Common method biases in behavioral research: a critical review of the literature and recommended remedies. J. Appl. Psychol. 88 (5), 879–903.

Pontones-Rosa, C., Pérez-Morote, R., Santos-Peñalver, J.F., 2021. ICT-based public policies and depopulation in hollowed-out Spain: a survey analysis on the digital divide and citizen satisfaction. Technol. Forecast. Soc. Chang. 169, 1–14. https://doi.org/10.1016/j.techfore.2021.120811.

Prentice, C., Wang, X., Loureiro, S.M.C., 2019. The influence of brand experience and service quality on customer engagement. J. Retail. Consum. Serv. 50, 50–59. https://doi.org/10.1016/j.jretconser.2019.04.020.

Rezabakhsh, B., Bornemann, D., Hansen, U., Schrader, U., 2006. Consumer power: a comparison of the old economy and the internet economy. J. Consum. Policy 29, 3–36. https://doi.org/10.1007/s10603-005-3307-7.

Riley, E., 2018. Mobile money and risk sharing against village shocks. J. Dev. Econ. 135, 43–58. https://doi.org/10.1016/j.jdeveco.2018.06.015.

Ringle, C.M., Wende, S., Becker, J.-M., 2015. SmartPLS 3. Boenningstedt: SmartPLS, GmbH. Retrieved 30 March 2020 from: http://www.smartpls.com.

Sarstedt, M., Ringle, C.M., Hair, J.F., 2017. Treating unobserved heterogeneity in PLS-SEM: a multi-method approach. In: Partial Least Squares Path Modeling. Springer, pp. 197–217.

Scheerder, A., Van Deursen, A., Van Dijk, J., 2017. Determinants of internet skills, uses and outcomes. A systematic review of the second-and third-level digital divide. Telematics Inform. 34 (8), 1607–1624. https://doi.org/10.1016/j.tele.2017.07.007.

Schweitzer, V., Simon, F., 2021. Self-construals as the locus of paradoxical consumer empowerment in self-service retail technology environments. J. Bus. Res. 126, 291–306. https://doi.org/10.1016/j.jbusres.2020.11.027.

Senyo, P.K., Osabutey, E.L.C., 2020. Unearthing antecedents to financial inclusion through FinTech innovations. Technovation 98, 1–14. https://doi.org/10.1016/j.technovation.2020.102155.

Shaikh, A., Karjaluoto, H., Chinje, N.B., 2015. Consumers' perceptions of mobile banking continuous usage in Finland and South Africa. International Journal of Electronic Finance. 8 (2/3/4), 149–168. https://doi.org/10.1504/IJEF.2015.070528.

Semerikova, E., 2020. What hinders the usage of smartphone payments in Russia? Perception of technological and security barriers. Technol. Forecast. Soc. Chang. 161, 1–8. https://doi.org/10.1016/j.techfore.2020.120312.

Tarute, A., Nikou, S., Gatautis, R., 2017. Mobile application driven consumer engagement. Telematics Inform. 34 (4), 145–156. https://doi.org/10.1016/j.tele.2017.01.006.

Udo, G.J., Bagchi, K.K., Kirs, P.J., 2010. An assessment of customers' e-service quality perception, satisfaction and intention. Int. J. Inf. Manag. 30 (6), 481–492. https://doi.org/10.1016/j.ijinfomgt.2010.03.005.

United Nations Department of Economic and Social Affairs (UNDESA), 2016. Unitednations E-government survey: e-government in support of sustainable development. From: https://publicadministration.un.org/egovkb/en-us/Reports/UN-E-Government-Survey-2018 (Accessed date: November 2021).

Ürgüplü, Ö., Hüseyinoğlu, I.Ö.Y., 2021. The mediating effect of consumer empowerment in omni-channel retailing. Int. J. Retail Distrib. Manag. 49 (11), 1481–1496. https://doi.org/10.1108/IJRDM-10-2020-0403.

Vatanasombut, B., Igbaria, M., Stylianou, A.C., Rodgers, W., 2008. Information systems continuance intention of web-based applications customers: the case of online banking. Inf. Manag. 45 (7), 419–428. https://doi.org/10.1016/j.im.2008.03.005.

Vieira, V.A., 2013. Stimuli–organism-response framework: a meta-analytic review in the store environment. J. Bus. Res. 66 (9), 1420–1426. https://doi.org/10.1016/j.jbusres.2012.05.009.

Visentin, M., Pizzi, G., Pichierri, M., 2019. Fake news, real problems for brands: the impact of content truthfulness and source credibility on consumers' behavioral intentions toward the advertised brands. J. Interact. Mark. 45, 99–112. https://doi.org/10.1016/j.intmar.2018.09.001.

Wellalage, N.H., Hunjra, A.I., Manita, R., Locke, S.M., 2021. Information communication technology and financial inclusion of innovative entrepreneurs. Technol. Forecast. Soc. Chang. 163, 1–13. https://doi.org/10.1016/j.techfore.2020.120416.

Wolf, M., Albinsson, P.A., Becker, C., 2015. Do-it-yourself projects as path toward female empowerment in a gendered market place. Psychol. Mark. 32 (2), 133–143.

Wu, H.C., Cheng, C.C., 2017. What drives green advocacy? A case study of leisure farms in Taiwan. J. Hosp. Tour. Manag. 33, 103–112.

Xiao, S., Dong, M., 2015. Hidden semi-markov model-based reputation management system for online to offline (O2O) e-commerce markets. Decision Support System 77, 87–99. https://doi.org/10.1016/j.dss.2015.05.013.

Yuan, Y., Lai, F., Chu, Z., 2019. Continuous usage intention of internet banking: a commitment-trust model. IseB 17 (1), 1–25. http://link.springer.com/10.1007/s10257-018-0372-4.

Zeithaml, Valarie, Berry, Leonard, Parasuraman, A., 1996. The behavioral consequences of service quality. Journal of Marketing. 60 (2), 31–46. https://doi.org/10.1177/002224299606000203.

Zhang, M., Ren, C., Wang, G.A., He, Z., 2018. The impact of channel integration on consumer responses in omni-channel retailing: the mediating effect of consumer empowerment. Electron. Commer. Res. Appl. 28, 181–193. https://doi.org/10.1016/j.elerap.2018.02.002.

Zhou, T., 2013. An empirical examination of continuance intention of mobile payment services. Decis. Support. Syst. 54 (2), 1085–1091. https://doi.org/10.1016/j.dss.2012.10.034.

Zietsman, M.L., Mostert, P., Svensson, G., 2019. Perceived price and service quality as mediators between price fairness and perceived value in business banking relationships: a micro-enterprise perspective. Int. J. Bank Mark. 37 (1), 2–19. https://doi.org/10.1108/IJBM-07-2017-0144.

Aijaz A. Shaikh is a postdoc researcher (Marketing) at the Jyväskylä University School of Business and Economics in Finland. He earned his PhD (major Marketing) from the University of Jyväskylä. He has >20 years of professional, teaching, and research experience and over 40 publications. His primary research interests include both qualitative and quantitative studies in the broader area of consumer behavior, mobile banking, branchless banking, sharing economy, payment systems, and social media. He has published in *International Journal of Information Management*, *Computers in Human Behavior*, *Telematics and Informatics*, *International Journal of Bank Marketing,* and others.

Richard Glavee-Geo is Associate Professor at the Department of International Business, NTNU-Norwegian University of Science and Technology in Norway. His research interests include buyer-supplier relationships; technology/innovation adoption, inter-organizational relationships, and consumer and organizational buying behavior. His previous publications have appeared in *Journal of Purchasing and Supply Management*, *Journal of Macromarketing*, *International Journal of E-Business Research*, *Research in International Business and Finance*, *International Journal of Bank Marketing,* and others.

Heikki Karjaluoto is a Professor of Marketing and the leader of the Digital Marketing Research group at the Jyväskylä University School of Business and Economics in Finland. His research interests include customer relationship management, marketing communications, mobile communications, and retail banking. His previous publications have appeared in *Business Strategy and the Environment*, *Computers in Human Behavior*, *European Journal of Marketing*, *International Journal of Information Management, Industrial Marketing Management*, and others.

Robert Ebo Hinson is a Professor at the North-West University Business School in South Africa and Head of Marketing & Entrepreneurship dept. at the University of Ghana Business School. He has also served as Rector of the Perez University College in Ghana. Hinson holds two doctorate degrees; one from Denmark and the other from the University of Ghana. He has over one hundred scientific publications and his previous publications have appeared in *Technological Forecasting and Social Change*, *Journal of Business Research*, *International Journal of Contemporary Hospitality Management*, *Journal of Retailing and Consumer Services*, and others.