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Ozili, Peterson K

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Digital agency theory of financial inclusion: a theory of digital financial inclusion

Peterson K. Ozili

Abstract

The objective of this study is to present a theoretical framework that explains the digital agency at work in digital financial inclusion. The digital agency theory of financial inclusion examines the problems and solutions linked to delegating financial inclusion outcomes to a digital agent. The theory also examines the various kinds of incentives and monitoring arrangements that can be deployed by the financial inclusion principal to ensure that the digital agent achieve the specified financial inclusion outcome. The digital agency theory of financial inclusion states that the financial inclusion principal will employ the services of a digital agent who will use appropriate digital technologies to achieve the financial inclusion outcome specified by the financial inclusion principal under a contractual agreement that motivates the digital agent to act in the best interest of the financial inclusion principal. The theory has broad applicability for digital financial inclusion. This study contributes to the emerging theoretical literature on financial inclusion by presenting a digital agency perspective on how to accelerate digital financial inclusion using digital agents.

Keywords: financial inclusion, digital agent, digital financial inclusion, digital technologies, incentives, digital agency theory of financial inclusion, monitoring.

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1. Introduction

The objective of this study is to present a theoretical framework that explains the digital agency at work in digital financial inclusion. The study begins by linking digital inclusion with financial inclusion. Digital inclusion is a concept that describes the ability of individuals and groups to access and use digital technologies to participate in the digital economy and the real economy (Reisdorf and Rhinesmith, 2020). Digital inclusion is generally achieved through access to, and use of, broadband internet services, digital devices, and digital literacy training (Calderón Gómez, 2020; Hoyos Muñoz et al, 2023; Ehimuan et al, 2024). Digital inclusion can improve the financial wellbeing of people when digital inclusion is linked to financial inclusion. The meeting point of digital inclusion and financial inclusion is often termed 'digital financial inclusion' which refers to the use of digital technologies to access basic formal financial services (Tay et al, 2022; Gallego-Losada et al, 2023). Most conversations about digital financial inclusion often begin with a discussion about financial inclusion (Daud, 2023).

Financial inclusion is an important buzzword in global development policy. The term 'financial inclusion' often emerge in many discussions on how to improve people's financial wellbeing. Financial inclusion is generally defined as access and use of formal financial services (Kumar, 2013; Ozili, 2021; Shah and Ali, 2022). It can also be viewed as the process or activities undertaken to bring unbanked adults into the formal financial system so that they can access and use affordable formal financial services to improve their financial welfare (Demirgüç-Kunt and Klapper, 2013).

Financial inclusion holds great promise for society. The most significant promise of financial inclusion for society is that financial inclusion can lead to social inclusion and economic inclusion because if people can access a wide range of financial services, they will be able to spend money on social (and community) bonding activities that foster social cohesion and social inclusion (Thomas and Hedrick-Wong, 2019), and they can also obtain a loan to start a business to become a part of the economic system towards economic inclusion (Cabeza-García et al, 2019). This promise was a great attraction for many scholars, including myself. As a result, many scholars

immersed themselves into financial inclusion research. I joined the financial inclusion bandwagon and became a vocal voice in several international policy and academic dialogue on financial inclusion. I observed with amazement the strong advocacy for a shift to a digital-led financial inclusion agenda and I also observed how this idea is being promoted as an appropriate development policy agenda to accelerate financial inclusion in many countries particularly in developing countries where market failure, corruption, lack of political will, weak governance and lack of an inclusive financial system have hindered progress towards financial inclusion for a long time.

The World Bank, the Bill and Melinda Gates Foundation, and the Alliance for Financial Inclusion have been at the forefront of promoting a digital-led financial inclusion agenda (Ardic et al, 2011; Owens, 2013). This year, they will hold their regular meetings on financial inclusion as they normally do each year. In the meetings, they will say that – 'digital' literacy can spur financial inclusion, 'digital' technology can increase access to financial services for the unbanked and undeserved population, 'digital' financial inclusion can reduce gender inequality, 'digital' financial inclusion can increase access to financial services for women and girls, and 'digital' financial inclusion can improve development outcomes. And they will have point! The point is that there seem to be an implied digital agency at work in such conversations about financial inclusion. In other words, there seem to be a consensus that a digital agent can be used to accelerate financial inclusion.

My first reaction to this idea was 'How?'. Then I had a deep reflection about the existence of a digital agent for financial inclusion. I observed some real-world examples of how digital agents are promoting the use of specific digital financial innovations to enable financial inclusion such as fintech, mobile money wallets, artificial intelligence products, cryptocurrency, and central bank digital currency, among others. This observation from the real world increased my curiosity to understand how digital agency works for financial inclusion and, once that has been established, develop the digital agency concept into a theory by developing a set of general propositions that show the relationship between a financial inclusion principal, a digital agent, the unbanked population, and what it means for financial inclusion.

In this article, I develop the digital agency theory of financial inclusion. The digital agency theory of financial inclusion proposed in this article complements other existing theories such as the technology acceptance model (Marangunić and Granić, 2015), the technology impact model (Bitner et al, 2010; Ozili, 2024a), the special agent theory of financial inclusion, and the systems theory of financial inclusion (Ozili, 2020). The digital agency theory of financial inclusion improves on existing theories by showing how digital agents can accelerate access and use of formal financial services for those in need of it.

This study contributes to the emerging theoretical literature on financial inclusion by presenting a digital agency perspective on how to accelerate digital financial inclusion using digital agents. A digital agency perspective has not been proposed in the theoretical financial inclusion literature. This study also contributes to the literature that examines how digital technology can be used to improve people's welfare. This study adds to this literature by proposing that digital technologies can be used to broaden and deepen financial inclusion which will improve the financial welfare of people.

The rest of the study is organized as follows. Section 1 presents the background of the study. Section 2 presents a theoretical paradigm. Section 3 presents the review of the literature. Section 4 presents a framework to understand the digital agency theory of financial inclusion. Section 5 describes the monitoring arrangement. Section 6 presents the conclusion.

2. Theoretical paradigm

To fully understand digital financial inclusion, a theoretical framework is required. There is a need to develop ideas into a logical framework consisting of definitions of terms, model building and theory development that explain the processes involved in achieving a financial inclusion outcome. Several theories have been developed to explain financial inclusion. Some theories are borrowed from other disciplines. However, none of the existing theories explain the relationship between those who promote digital financial inclusion and those who undertake actual digital

financial inclusion work. Scholars in different disciplines often use agency theory to understand the relationship between principals and agents in the context of a firm (Adams, 1994; Lafontaine, 1992; Lan and Heracleous, 2010). The classic agency theory was developed by Michael Jensen. Agency theory is about how principals delegate tasks to agents with the expectation that the agents will work in the best interest of the principal to perform and complete the assigned tasks (Jensen and Meckling, 1976). When conflict of interests arises, agency theory proposes compensation that will motivate the agent to align its interest with the interest of the principal (Eisenhardt, 1989). Agency theory can also be applied to the financial inclusion discipline, but only to a limited extent. Apart from the agency theory, other theories exist which attempt to explain financial inclusion. For instance, the systems theory of financial inclusion adopts a systems thinking approach to financial inclusion, and argue that financial inclusion outcomes are achieved through existing sub-systems that require financial inclusion to be attained as a necessary condition before service can be rendered, and when financial inclusion takes place, it will have a positive effect on the existing sub-systems and the larger economic system while also meeting the needs of financially included individuals or entities (Ozili, 2020). An important implication of the systems theory of financial inclusion is that being financially included is a necessary condition for individuals and firms to receive services from economic agents who control the existing sub-systems in the economy. Other theories exist which attempt to explain financial inclusion such as the vulnerable group theory of financial inclusion and the dissatisfaction theory of financial inclusion (see Ozili, 2020). However, these theories do not examine the relationship between those who promote digital financial inclusion and those responsible for undertaking actual digital financial inclusion work. The digital agency theory of financial inclusion does a good job in explaining this phenomenon.

3. Literature review

An extensive literature examines digital financial inclusion in terms of the digital technologies that are used to increase financial inclusion. Aloulou et al (2024) examine the use of fintech technology to advance financial inclusion in the United Arab Emirates. They find that fintech adoption increases competition and improves the performance of the UAE banking industry during the COVID-19 pandemic. Shaikh et al (2023) investigate the role of mobile money services in accelerating digital financial inclusion in Ghana. They observe that the frequent use of mobile money services by customers encourage greater customers engagement with digital financial services and it leads to greater financial inclusion. Elouaourti and Ibourk (2024) examine digital financial inclusion in some African countries in the post-COVID-19 period. They focus on the access and usage dimensions of financial inclusion. They find that education level, labour market participation, access to technology and internet infrastructure are determinants of digital financial inclusion in African countries. Asif et al (2023) focus on India and note that the government of India encourage the use of fintech to expand financial inclusion for middle-class residents in India. Ozili (2024b) focused on the digital innovations used by private sector agents and public sector agents to accelerate financial inclusion. The author identified central bank digital currency (CBDC), cryptocurrency, embedded finance, artificial intelligence, wallet as a service (WaaS), fintech, Bigtech, and decentralized finance (DeFi) as effective digital innovations that can accelerate digital financial inclusion. The author shows that each of these digital innovations serve a specific purpose, and they contribute to digital financial inclusion in unique ways.

Turning to agency theory, there is an extensive theoretical literature on agency theory. Shapiro (2005) argues that the relationship between a principal and agent is simply an agency relationship in which one party acts on behalf of another under some terms and conditions. Jensen and Meckling (1976) prescribe agency theory as an economic paradigm to understand the relationship between principals and agents in the context of a firm. They argue that the principal or owner of the firm will motivate an agent to act in the best interests of the principal who is the owner of the firm. Heath (2009) shows that agency theory is most effective and useful in

explaining the breakdown in the relationship between a principal and his agent in a firm. Panda and Leepsa (2017) point out that the agency relationship between the principal and agent often gives rise to agency problems and conflict of interests. Panda and Leepsa (2017) further argue that conflict of interest and agency cost arises due to the separation of ownership of the firm from control of the firm, differences in risk preferences between the principal and the agent, information asymmetry and moral hazard. Panda and Leepsa (2017) suggest that these conflicts can be minimised by introducing mechanisms such as strong ownership control, managerial ownership, and independent board members in the firm.

Agency theory has been expanded in many studies and the theory has been applied to several disciplines. However, agency theory has not been applied to the financial inclusion discipline. Agency theory has not been used to explain the relationship between agents of digital financial inclusion and the promoters of digital financial inclusion. The only explanation in the literature that comes close to agency theory for financial inclusion is the special agent theory of financial inclusion proposed in Ozili (2020). The special agent theory of financial inclusion states that financial inclusion is achieved through a special agent who is highly competent, skilled and has a superior ability to bring the excluded population into the formal financial sector and facilitate their access to formal financial services (Ozili, 2020). Despite being an important theory, the shortcoming of the special agent theory of financial inclusion is that the theory did not consider the incentives to the special agent, the monitoring of the special agent, and the fact that the special agent may be a technological firm. These limitations make the special agent theory of financial inclusion incapable of explaining the digital agency relationship involved in digital financial inclusion. Therefore, there is a need for a theory that explains the digital agency relationship between the principals and agents involved in digital financial inclusion. There is a need to modify the agency theory to make it fit to explain digital financial inclusion. This study proposes the digital agency theory of financial inclusion as a theoretical framework that provides a better explanation of the agency relationship between the financial inclusion principals and digital agents involved in digital financial inclusion.

4. Understanding the digital agency theory of financial inclusion

4.1. The financial inclusion principal

The financial inclusion principal, in this context, refers to any individual, private firm, government agency, foreign institution or supranational organisation that wants to achieve a financial inclusion outcome in a jurisdiction but lacks the capability to achieve the financial inclusion outcome on its own. Real world examples of a financial inclusion principal include a high net-worth philanthropist, a commercial bank, a central bank, the World Bank, domestic development institutions, the Asian Development Bank, the African Development Bank, the Inter-American Development Bank, and the Alliance for Financial Inclusion (Ardic et al, 2011; Owens, 2013). These institutions have the resources to develop a vision for financial inclusion and an effective financial inclusion strategy, but they cannot implement it on their own. Therefore, the financial inclusion principal will need a digital agent.

4.2. The digital agent

The digital agent, in this context, refers to any individual, firm or business that specialise in identifying appropriate digital technologies, and using the identified digital technologies to achieve a specific financial inclusion outcome. The digital agent will, in most cases, (i) identify the appropriate digital technology options that can be deployed to grant access to formal financial services to the unbanked and undeserved population, (ii) present the digital technology options to the financial inclusion principal so that a specific digital technology can be chosen, (iii) present the cost of the chosen digital technology to the financial inclusion principal who can accept, reject, or negotiate the cost estimate, (iii) present the service fee of the digital agent to the financial inclusion principal who can accept it, reject it, or negotiate a reasonable service fee that is due to the digital agent.

The digital agent needs a financial inclusion principal because the digital agent cannot develop and implement a financial inclusion plan on its own in any jurisdiction without partnering with a financial inclusion principal. Real world examples of a digital agent are ICT firms, bigtech firms

and fintech firms that offer software services, point-of-sale terminals, digital payment services, digital platform services, cryptocurrency services, and unique digital identity services. The digital agent can also be a technology firm that offers digital devices that enable remote digital access to financial services. In the context of an organisation, the digital agent may be employees who possess financial technology skills. In the context of a country, the digital agent may be the fintech or bigtech industry.

4.3. The unbanked adults in need of financial inclusion

Unbanked adults are people who lack access to formal financial services in the formal financial system. They do not own a bank account or a formal account of any type (Dupas et al, 2018). This makes them financially excluded. Bringing unbanked adults into the formal financial system is the endgame of the digital agency relationship between the financial inclusion principal and the digital agent. Every element of the digital agency relationship is designed to ensure that unbanked adults are financially included. The financial inclusion principal typically targets a segment of the population that are financially excluded or underserved by formal financial services providers. The financial inclusion principal identifies the factors that hinder unbanked adults from accessing formal financial services. These factors may include long distance to a bank, burdensome documentation requirement, long waiting hours in a bank, and the high transportation cost to visit a distant financial institution. After identifying these factors, the financial inclusion principal will reach a decision to use digital technologies to bypass some of the factors that hinder progress towards financial inclusion. Thereafter, the financial inclusion principal would engage the services of a digital agent whose goal is to use appropriate digital technologies to give unbanked adults digital access to formal financial services.

4.4. Digital technologies to be deployed for financial inclusion

The digital technologies used by the digital agent to achieve the agreed financial inclusion outcome should have the following characteristics. It should be

i. accessible to unbanked adults.

ii. suited to the needs of unbanked adults and underserved customers.

iii. utilised responsibly.

iv. non-intrusive.

v. affordable for unbanked adults and underserved customers.

vi. sustainable for digital agents.

vii. capable of making and receiving payments and transfers electronically.

viii. a safe place to store value for unbanked households.

ix. capable of allowing unbanked adults to transact in very small amounts and at low cost.

x. capable of generating data that digital agents can use to design tailored financial products that meet the financial needs of poor and low-income customer segments.

xi. delivered through a digital transactional platform.

xii. compatible and interoperable with customers' device such as mobile phones.

4.5. The theory

The digital agency theory of financial inclusion is a set of propositions or principles that explain and resolve the issues in the relationship between those who want to achieve a specific financial inclusion outcome (i.e., the financial inclusion principal) and those who own or manage the digital technologies that can be used to achieve a specific financial inclusion outcome (i.e., the digital agent). The digital agency theory of financial inclusion states that the financial inclusion principal will employ the services of a digital agent who will use appropriate digital technologies to achieve the financial inclusion outcome specified by the financial inclusion principal. The digital agency theory of financial inclusion is about the relationship between financial inclusion principals and the digital agents that accelerate financial inclusion using appropriate digital technologies. The theory studies the problems and solutions linked to the delegation of tasks from the financial inclusion principal to the digital agent.

4.6. Assumptions

There are four main assumptions underlying the digital agency theory of financial inclusion. They include:

1. The financial inclusion principal seeks to achieve its own interest and will employ a digital agent to serve its interest.

2. The interest of the financial inclusion principal is to bring unbanked adults into the formal financial system.

3. The digital agents are self-interested. They will act in their own self-interest.

4. The digital agents are in a higher decision-making capacity because their actions on the digital technologies that are used to advance financial inclusion can either slowdown or accelerate progress towards achieving the financial inclusion outcome specified by the financial inclusion principal. For example, if digital agents increase transaction fees or adopt a digital technology that is incompatible with consumer devices, it will hinder digital financial inclusion for unbanked and underserved adults.

4.7. The financial inclusion principal-digital agent problem

The interests and priorities of the digital agent may be different from the interests and priorities of the financial inclusion principal. This is likely to occur because the goal of the financial inclusion principal is to bring people into the formal financial system so that they can use available digital financial services to improve their welfare. In contrast, the goal of the digital agent is to generate a profit from the fee charged for using its digital technology to achieve the financial inclusion outcome of the financial inclusion principal. Differences in interests and priorities may also arise if the digital agent seeks to achieve a different financial inclusion outcome than the outcome that was agreed with the financial inclusion principal. This may arise if it has become too costly for the digital agent to achieve the agreed financial inclusion outcome. Differences in interests may also arise from disputes about the transaction cost to charge the users of the digital technology deployed by the digital agent. For instance, the financial inclusion principal wants a very low transaction fee to encourage people to use digital financial services as frequently as possible, while the digital agent wants to charge a high transaction fee to recover its operating cost and generate a profit within a short time. This creates a conflict.

4.8. Resolving the digital agency problem using incentive contract

The difference in interests and priorities between the financial inclusion principal and the digital agent can be resolved if the financial inclusion principal offers some financial or non-financial incentives to the digital agent before the start of the project to motivate the digital agent to pursue only the interests and priorities of the financial inclusion principal. The incentives offered by the financial inclusion principal to the digital agent will influence the digital agent to use appropriate digital technologies to achieve the financial inclusion outcome of the financial inclusion principal. The incentives offered to the digital agent will also optimize the relationship between the financial inclusion principal and the digital agent.

To ensure that the digital agent achieves the financial inclusion outcome specified by the financial inclusion principal, the financial inclusion principal will design incentives that will align the interests of the digital agent with the interests of the financial inclusion principal. The financial

inclusion principal will bear the additional cost of the incentive structure as long as the expected benefits of achieving the financial inclusion outcome is greater than cost of hiring the digital agent, including the agency costs. A good incentive structure is one that is sensitive to the performance of the digital agent. Such incentive structure will motivate the digital agent to think like the financial inclusion principal and pursue only the interests and priorities of the financial inclusion principal.

Examples of financial incentives to the digital agent include (i) money, (ii) a percentage of the fee on each digital transaction, and (iii) profit-sharing. Other incentives that can be deployed include an outcomes-based contract in which the digital agent receives an additional financial benefit after the agreed financial inclusion outcome has been achieved. Examples of non-financial incentives to the digital agent include (i) recognition, (ii) praise, (iii) encouragement, (iv) access to larger markets, (v) good corporate reputation, (vi) commendation by the authorities, or (vii) status reward. Examples of penalties to the digital agent for failing to achieve the agreed financial inclusion outcome include (i) sanctions, and (ii) firing.

Incentivizing the digital agent to pursue only the interests and priorities of the financial inclusion principal will resolve the digital agency problem. However, offering incentives may have some consequences. It can motivate the digital agent to take risky actions such as deploying digital technologies that have weak cybersecurity protections or deploying digital technologies that have low on-boarding requirements, or it can lead the digital agent to push its employees too hard to achieve the financial inclusion outcome in order to receive the financial or non-financial incentive that was promised by the financial inclusion principal. However, if the digital agent fails to meet the agreed financial inclusion outcome and such failure is considered unacceptable to the financial inclusion principal, the financial inclusion principal can simply fire the digital agent.

5. Monitoring arrangement

The financial inclusion principal will set up a monitoring arrangement to reduce information asymmetry, align incentives, increase accountability, and improve the performance of the digital agent of financial inclusion. Establishing a monitoring arrangement will enable the financial inclusion principal to gain a better understanding of what the digital agent is doing to achieve the agreed financial inclusion outcome. Such monitoring will also enable the financial inclusion principal to effectively monitor the actions of the digital agent to ensure that the digital agent acts in the best interest of the financial inclusion principal. To do this, the financial inclusion principal needs to set up a monitoring team.

5.1. Duties of the monitoring team

The primary responsibility of the monitoring team is to:

i. monitor the efficiency of the digital agent's financial inclusion processes including the pricing structure adopted by the digital agent and the operational resilience of the digital technologies deployed by the digital agent to accelerate financial inclusion.
ii. develop rules that guide the digital agent's dealings with newly banked adults and existing banked customers.
iii. detect violations or opportunistic behavior by the digital agent that warrant sanctions or firing of the digital agent.
iv. exercise a duty of care and duty of loyalty to the financial inclusion principal.

5.2. Duties of the financial inclusion principal

In the monitoring arrangement, it is the responsibility of the financial inclusion principal to:

i. establish clear lines of reporting between the monitoring team and the digital agent.

ii. ensure that the members of the monitoring team are qualified and competent to

undertake monitoring for effective financial inclusion governance.

iii. ensure that the monitoring team are free from interference from digital agents or other external influence.

iv. ensure that the monitoring team are compensated for the monitoring work they do on behalf of the financial inclusion principal.

v. ensure that the digital technology deployed by digital agents maximize the welfare of unbanked adults.

5.3. The monitoring mechanism

The financial inclusion principal can use several monitoring mechanisms to ensure that the digital agent is acting in the financial inclusion principal's best interests. Some monitoring mechanisms that can be deployed include:

i. performance evaluations

ii. audits

iii. inspections

iv. regular check-ins

v. progress reports

5.4. Consequences and challenges of excessive monitoring

Monitoring the digital agent of financial inclusion is important to ensure that the agreed financial inclusion outcome is achieved. However, excessive monitoring has the unintended consequence of reducing trust between the financial inclusion principal and the digital agent. If the digital agent feels that it is being constantly monitored by the financial inclusion principal, it can create a feeling of mistrust, resentment, intrusion of privacy and high levels of stress for the digital agent of financial inclusion. As a result, the digital agent may become less motivated, less effective and

it can lead the digital agent to behave in an unethical manner or engage in opportunistic behavior. To mitigate these negative consequences, the financial inclusion principal should carefully assess the costs and benefits of monitoring the digital agent in different contexts. The financial inclusion principal should strive to find the balance between monitoring and autonomy for the digital agent of financial inclusion because giving the digital agent autonomy can increase trust, motivation and help the digital agent to build a sense of ownership of the financial inclusion tasks, but such autonomy can also be abused in the absence of monitoring. Therefore, striking a balance between autonomy and monitoring is important.

5.5. Overcoming the monitoring challenges

The challenges associated with monitoring the digital agent of financial inclusion can be mitigated by

i. implementing a reasonable monitoring plan

ii. ensuring that the metrics and standards used to assess the performance of the digital agent are clearly defined and understood by all parties involved both the digital agent of financial inclusion, the monitoring team, and the financial inclusion principal.

iii. ensuring that clear channels of communication are established. The monitoring team, acting on behalf of the financial inclusion principal, should establish clear communication channels to the digital agent to ensure that it is informed of any progress or challenges faced by the digital agent of financial inclusion.

iv. providing regular feedback to the digital agent of financial inclusion. The monitoring team, acting on behalf of the financial inclusion principal, should provide regular feedback to the digital agent to ensure that the digital agent is aware of the financial inclusion principal’s assessment of its performance and to identify potential areas for improvement.

6. Conclusion

This study made a first attempt to bring agency theory into the digital financial inclusion discipline. The digital agency theory of financial inclusion argued that the financial inclusion principal will employ the services of a digital agent who will use appropriate digital technologies to achieve the financial inclusion outcome specified by the financial inclusion principal under a contractual agreement that motivates the digital agent to act in the best interest of the financial inclusion principal.

The implication of the digital agency theory of financial inclusion is that the financial inclusion principal may need to offer elevated incentives to the digital agent if the financial inclusion principal wants a much quicker attainment of a specific financial inclusion outcome. However, the size of the incentive will differ depending on the specific context, the type of financial inclusion principal involved, the type of digital agent hired, the type of financial inclusion outcome to be achieved, and the urgency to increase digital financial inclusion. The theory calls on digital financial inclusion proponents not to lose sight of the interaction between those promoting digital financial inclusion (i.e., the financial inclusion principal) and those who specialize in using appropriate digital technologies to achieve some specified financial inclusion outcome (i.e., the digital agent). It is my hope that digital financial inclusion scholars will use the digital agency theory of financial inclusion to advance their research into digital financial inclusion.

The digital agency theory of financial inclusion has some limitations. One, the theory considers only the financial inclusion principal, the digital agent, and unbanked adults as stakeholders in the financial inclusion process. The theory does not consider other stakeholders that may have a significant influence on the attainment of a financial inclusion outcome. Two, the theory ignores the role of culture, emotions, and demographic characteristics in influencing the relationship between the financial inclusion principal and the digital agent. Despite these limitations, the digital agency theory of financial inclusion remains an important theoretical framework for understanding the complex relationship between a financial inclusion principal, the digital agent

of financial inclusion and unbanked adults who need digital financial inclusion. The digital agency theory of financial inclusion should not be explored in isolation, rather, the theory should be complemented with other theories of financial inclusion to overcome its limitations.

Future research can compare the digital agency theory of financial inclusion with other established theories of financial inclusion, such as the vulnerable group theory of financial inclusion and the systems theory of financial inclusion as shown in Ozili (2020), to identify similarities and differences in the existing theories of financial inclusion. Future research studies can also explore and test the validity and applicability of the predictions of the digital agency theory of financial inclusion. For instance, future studies can examine whether digital agents respond negatively or positively to monitoring by the financial inclusion principal. Future studies can also examine whether differences in unbanked adults' characteristics affect the digital agency relationship between the digital agent and the financial inclusion principal.

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