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Dangers of Digital-Only Financial Inclusion

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Abstract

The literature has not extensively examined the dangers of digital-only financial inclusion. The purpose of this chapter is to highlight the dangers of digital-only financial inclusion (DOFI). Using the discourse analysis method, the study showed that digital-only financial inclusion may be difficult to achieve when there is uneven availability and uneven access to digital devices. It was also argued that digital-only financial inclusion could lead to high cost of internet broadband, and it places much emphasis on accelerating digital access rather than protecting users who use digital finance platforms. Furthermore, it pays little attention to risk mitigation, and produces digital ID schemes that enable government surveillance. It also prioritizes digital access rather than financial health; and makes it easier to perpetrate fraud using digital means. Finally, it can enable the endless pursuit of power, and it prioritizes a digital version of financial inclusion at any cost. As much as possible, the strategies used to advance financial inclusion should not be too dependent on digital technologies because they only offer digital access and more access but may not improve the financial health of users in a significant way.

Keywords: digital-only financial inclusion, digital financial inclusion, financial inclusion.

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1. Introduction

The term ‘financial inclusion’ is commonly defined as access and use of affordable formal financial services (Ozili, 2021a). Digital-only financial inclusion (DoFI) is the use of digital technology to promote financial inclusion (Gallego-Losada et al, 2023). Digital-only financial inclusion involves using innovative digital technology to accelerate access and use of formal financial services (Ozili, 2022). An avid observer of the global trends in financial inclusion in the last five to ten years will admit that there is much emphasis on digital-only financial inclusion today. The evidence for this can be found everywhere you turn to. You will see buzzwords such as “digital financial inclusion”, “digital financial services”, and “fintech”. How did we get to this point?

Recall that in 2017 the World Bank estimated that 2 billion people do not have a formal bank account which they can use to access available financial services (Ozili, 2021a), meaning that these people are financially excluded. This statistic led many experts to think of strategies to accelerate financial inclusion, by reducing the number of adults without a bank account (Dev, 2006; Atkinson and Messy, 2013; Peric, 2015). As a result, private sector actors, development organizations and government agencies reached a consensus that digital technology is the most effective way to accelerate financial inclusion in the 21st century. Therefore, promoters of financial inclusion began to place great emphasis on achieving financial inclusion using digital means, with little consideration for non-digital strategies for financial inclusion.

Existing research shows overwhelming evidence that technology-enabled digital innovations, such as mobile phones, fintech and central bank digital currencies (CBDCs), can accelerate financial inclusion much quicker if the right conditions and incentives are in place (Ouma et al, 2017; Sahay et al, 2020; Ozili, 2023a). However, there is little academic and policy discourse about the associated dangers or risks of digital-only financial inclusion (DOFI). In fact, the critical literature has shown that the benefits of DOFI are either overstated or the conclusions are formed based on incomplete information (Ozili, 2020). Proponents of digital-only financial inclusion seem to forget that digital technology is only a tool, and that is all it will be – both now and in the future. This should make the reader think deeply about what digital-only financial inclusion has to offer, bearing in mind that digital technology is only a tool for

accelerating financial inclusion, meanwhile, financial inclusion itself entails much more than providing digital access to formal financial services.

This chapter identifies the dangers of digital-only financial inclusion (DOFI). The discussion in this chapter adds to the existing literature that explores the harmful consequences of technology in society (e.g., Feenberg, 2010; Healy, 2012; Biggi and Giuliani, 2021). The discussion presented in this chapter also adds to the financial inclusion literature that identifies some benefits of digital-only financial inclusion (e.g., Ozili, 2018; Daud, 2023; Shaikh et al, 2023; Obiora and Ozili, 2023; Peng and Mao, 2023; Ozili, 2023b), but which have not extensively identified the associated risks of digital-only financial inclusion. The analysis in this chapter further adds to the development literature that explore the benefits and challenges of technology-enabled development (see. Gorman, 2002; Vinuesa et al, 2020; and Mubarak and Petraite, 2020).

The remaining sections of this chapter are classified as follows. The related literature is discussed in section 2, while some dangers of digital-only financial inclusion are highlighted in section 3. A discussion on technology risk is presented in section 4. The concluding remarks are presented in section 5 while some recommendations are presented in section 6.

2. Related Literature

Existing studies document some benefits of digital-only financial inclusion but offer very little insight into the dangers of DOFI. For instance, Tay et al (2022) conducted a review of the existing literature based on analyses of different countries and found that Asian countries adopt DOFI because it helps in their poverty reduction efforts. They also observed that there is a wide gap in DOFI among the different gender, the wealthy, the poor, and among people in urban and rural areas. The authors concluded their review by proposing that Asian countries should improve their digital infrastructure, simplify banking procedures, prioritize financial education, and enable DOFI. Obiora and Ozili (2023) showed that benefits of digital-only financial inclusion include convenience, ensuring digital access to financial services, reaching the poorest in remote areas, and increasing digital literacy.

Naumenkova et al (2019) examined DOFI in Ukraine. They were interested in investigating the hindrances to DOFI in Ukraine in comparison to other countries. They found that digital financial inclusion can strengthen the financial system. Ahmad et al. (2021), focused on China, and showed that the recent adoption of DOFI in China significantly improved access, and made financial services become more affordable. They also showed that DOFI and human capital significantly contribute to economic growth. Aziz and Naima (2021) argued that although digital technology has made it much easier to access financial services for many people, the benefits of digital technology is limited by poor internet connection, high financial illiteracy and lack of awareness.

Liu et al (2021) examined whether DOFI can promote economic growth. The authors analysed 2011 to 2019 data from several provinces in China. They found that DOFI development can contribute to economic growth. However, they noted that small and medium-sized enterprise entrepreneurship and residents' consumption are the two important channels through which DOFI development might affect economic growth. Khera, Ng, Ogawa and Sahay, (2022) assessed whether adopting DOFI increased financial inclusion in 52 countries. They showed that adopting DOFI had positive benefits in the countries that adopted it, and the benefits varied across countries and regions, and the greatest benefits were found in Africa and Asia.

Ozturk and Ullah (2022) focused on the impact of DOFI on economic growth, and its possible impact on environmental sustainability in 42 countries between 2007 to 2019. Interestingly, the authors found that DOFI can increase economic growth; but it leads to a decrease in environmental quality via increase in CO2 emissions. Koh, Phoon and Ha (2018) surveyed the current state of financial inclusion in Southeast Asian (SEA) nations from 2011 to 2014 and found a large variation in bank account penetration, stage of bank infrastructure development, and use of financial technology in Southeast Asian countries. Shen, Hu and Hueng (2021) also investigated the effect of DOFI on economic growth in 105 countries. They found that DOFI had a beneficial impact on economic growth, and there were spillover benefits on neighbouring countries.

Lee et al (2022) showed that DOFI reduced carbon intensity by accelerating per capita disposable income and digitization, while DOFI increased carbon sequestration via

green space and green technology. Huang, Mbanyele, Fan and Zhao (2022) examined the relationship between digital financial inclusion and energy-environment performance for 282 prefecture-level cities in China from 2011 to 2019. They found that DOFI has a non-linear effect on energy-environment performance, implying that DOFI increased energy-environment performance up to a threshold and up to a point where further increases in DOFI decreased energy-environment performance.

Lee, Lou and Wang (2023) argued that digital financial inclusion may curtail poverty in China. They examined the role of digital financial services in alleviating poverty. They found that DOFI contributes to poverty alleviation, and that DOFI has a different impact on users with differing levels of poverty. They also found that the level of income play an important role in alleviating poverty. Kofman and Payne (2021) showed that DOFI has advantages for women. They argued that DOFI allows more women to enjoy a wide array of financial products and services. They also pointed out that the risks of DOFI must be mitigated for women to achieve meaningful financial inclusion. They conclude that policymakers, for-profit organisations, and nonprofit organisations should actively assist in removing the barriers that prevent women financial inclusion.

Kelikume (2021) examined the case of African countries and found that mobile phone penetration and the use of the Internet reduced poverty in African countries. Shaikh et al (2023) showed that mobile money is effective in increasing financial inclusion. Ji, Wang, Xu and Li (2021) examined the impact of DOFI on the urban-rural income gap in China from 2014 to 2018. They found that DOFI reduced the gap. They also found that the breadth of coverage of DOFI reduced the gap, while DOFI alleviates the gap through residents' entrepreneurship.

Niu et al (2022) examined the association between DOFI and broadband infrastructure in rural China and found that broadband infrastructure helps to increase DOFI in a significant way, and the impact of broadband infrastructure on DOFI is stronger in areas with higher bank branches and higher human and social capital. Lu et al (2023) examined the effect of DOFI on diversified investments in China. They found that DOFI has a positive effect on diversified investments because it reduced transaction cost for investors. They also found that DOFI was more useful among investors that are less sophisticated, less financially literate, below 45 years old, less experienced and females. Peng and Mao (2023) examined the impact of DOFI on the rate of poverty

on households in urban China and found that DOFI reduced the risk that households would fall into poverty. They also observed that DOFI encouraged entrepreneurship and enabled households to participate in the financial market, thereby giving them an opportunity to generate wealth and avoid falling into poverty.

Meanwhile, only few studies showed the dangers of DOFI. For instance, Ozili (2020) argued that the risks of DOFI is too high for the poor, and that DOFI could reinforce inequalities, expose poor people to risks, and worsen the welfare of poor people.

3. Dangers of digital-only financial inclusion (DOFI)

Digital financial inclusion comes with some challenges. A few of the challenges are harmful to users of digital financial services. This section identifies some dangers of DOFI.

3.1. DOFI is difficult to achieve when there is uneven availability and uneven access to digital devices.

Achieving digital-only financial inclusion requires using digital devices, e.g., mobile phones, a bank app or fintech software, to access affordable formal financial services. However, digital-only financial inclusion may be difficult to achieve if there is uneven availability and access to digital devices. Digital devices may be in short supply relative to the size of the population (Andrianaivo and Kpodar, 2012; 2018). Also, some banked adults live in rural areas where there is limited supply of digital devices compared to urban areas (Aker and Mbiti, 2010; Bhavnani, Chiu, Janakiram, Silarszky and Bhatia, 2008), and when some digital devices become available in rural areas, they are not cheap to purchase (Scott, Batchelor, Ridley and Jorgensen, 2004). As a result, poor banked adults, and people with low income, are unable to purchase digital devices which limits their ability to access financial services.

3.2. High cost of internet broadband

Achieving financial inclusion through digital solutions require internet connectivity. In most cases, the cost of internet broadband is not cheap. Since the emergence of DOFI, the cost of internet broadband has remained high in many poor and developing countries (Friedline et al, 2020 Niu et al, 2022). The implication is that DOFI will likely

increase the cost of internet broadband, rather than reduce it. High cost of internet broadband is not good for financial inclusion because the poor won't be able to afford it and won't be able to use internet-enabled digital devices to access affordable financial services. Therefore, any discussion about promoting digital-only financial inclusion must include deliberations about reducing the cost of internet broadband.

3.3. Digital-only financial inclusion places much emphasis on accelerating digital access rather than protecting users who use digital finance platforms.

Since the emergence of DOFI, there has been much emphasis on “accelerating digital access” (Shen et al, 2020), with little attention paid to other important aspects of financial inclusion like protecting the users of digital finance platforms (Ozili, 2020). As a result, the people who are being targeted for financial inclusion could be negatively impacted when they use digital platforms or digital tools that have very little safeguards to protect them (Malladi et al, 2021). Providers of digital financial services must ensure that they give equal emphasis and priority to protecting users of digital finance platforms while accelerating digital access (Chou, 2019; Mahalle, Yong and Tao, 2019; Akanfe, Valecha and Rao, 2020).

3.4. Digital-only financial inclusion pays little attention to risk mitigation.

Oftentimes, the promoters of digital-only financial inclusion pay inadequate attention to risk mitigation when designing digital financial services that serve the purpose of financial inclusion. The implication is that, while users may enjoy the benefits that come with using digital financial services, such benefits are easily eroded when adverse risk or loss events occur such as digital fraud and theft arising from unauthorized access to bank accounts (Ozili, 2021b; Edigbonya and Tioluwani, 2023). Providers of digital financial services should pay more attention to risk mitigation when designing digital financial services. This will help to mitigate risk or loss events that wipe out the benefits that users stand to gain from using digital financial services (Ozili, 2022).

3.5. Digital-only financial inclusion produces digital ID schemes that enable government surveillance.

Attempts by government to increase DOFI has led to the development of national digital identification (ID) schemes or programs that use biometric information to

authenticate individuals' financial activity on digital platforms. Under such schemes or programs, users will be mandated to authenticate their digital ID to access digital financial services. In some cases, having a digital ID is a requirement to vote or to make cross-border transactions. For many countries, the emergence of digital ID schemes or programs is a result of the government's effort to increase digital-only financial inclusion. The governments will strive to make ID schemes legal and argue that the ID schemes can help to build a modern database of citizens, improve cybersecurity, and assist financial institutions in their know-your-customers (KYC) functions. However, there are strong concerns that national ID schemes or programs, which are a result of digital-only financial inclusion, can enable unnecessary government surveillance of private citizens' financial activity, and could shift the government's focus from financial inclusion to State surveillance (Lim, Cho, Sanchez, 2009; Lips, Taylor and Organ, 2009; Whitley, 2013).

3.6. Digital-only financial inclusion prioritizes digital access rather than financial health.

Digital-only financial inclusion appears to prioritize digital access rather than financial health. This is evident in the performance metrics used by digital finance platforms such as the number of onboarded individuals on digital platforms, volume of transactions and number of registered accounts, among others. These metrics are mostly access-based performance metrics. They do not measure the financial health of users, such as a user's personal savings to debt ratio on a digital banking platform. It would be much better for digital-only financial inclusion to promote good financial health which would better serve the needs of consumers rather than aiming for digital access only. Focusing on financial health rather than digital access is the first step towards designing products that deliver a lasting positive impact on users of digital financial services.

3.7. Digital-only financial inclusion makes it easier to perpetrate fraud using digital means.

Digital-only financial inclusion could make it easier to perpetrate digital fraud because fraudsters could exploit poor data protections, and those weak points may be exploited to steal users' personal information or steal users' money. This can erode public trust

in digital finance products and erode trust in government or private sector digital identity initiatives (Oehler and Wendt, 2018; Müller and Kerényi, 2019).

3.8. Digital-only financial inclusion can enable the endless pursuit of power.

Digital-only financial inclusion can be a conduit for exploitation by those seeking power and more power. Powerful financial institutions are hurriedly scaling their digitization programs, using the cover of financial inclusion, to increase profit significantly and to acquire new market power or to retain their existing market power (Feghali, Mora and Nassif, 2021). The pursuit of DOFI has also enabled politicians to increase their power by using mobile surveillance to influence users of digital financial services to vote for them in elections (Jain and Gabor, 2020), enabling them to pry into users' privacy, which leads to digital authoritarianism.

3.9. Digital-only financial inclusion prioritizes a digital version of financial inclusion at any cost.

There are concerns that digital-only financial inclusion prioritizes a digital version of financial inclusion at any cost. It increases the potential for exploitation and misuse by individuals, financial sector agents, and public institutions who might use the cover of DOFI to pursue goals that are contrary to the goals of financial inclusion, e.g., the financialization of poverty, profiteering, amplifying state power and surveillance, while ignoring real outcomes of financial inclusion.

4. Digital technology risk

It would seem unfair to criticize digital-only financial inclusion without also criticizing 'digital technology' for bearing inherent risks which are transferred to financial inclusion programs. The digital technologies used to accelerate financial inclusion are varied such as the Internet of Things (IoT), blockchain, distributed ledger technology, financial technology (Fintech), machine learning and artificial Intelligence (AI). These technologies, no matter how beneficial they are for financial inclusion, bear risks that could hinder financial inclusion efforts (Hoang, Nguyen and Le, 2022; Nguyen, Sermpinis and Stasinakis, 2023). Some of these risks include cybersecurity risk, third-party risk, automation risk, data privacy risk and social engineering risk. Cybersecurity risk is the risk that a malicious actor will damage or destroy the digital platforms,

software applications, or systems that are used to accelerate digital financial inclusion in order to gain unauthorized access to users' sensitive information and then use the information maliciously to extort or disrupt an existing service (Florackis et al, 2023; Katsumata, Hemenway and Gavins, 2010). Cybersecurity risk may take the form of malware attacks and distributed denial of services (DDoS) attacks that prevent users from accessing basic financial services (Wangen, Shalaginov and Hallstensen, 2016). Cybersecurity risk may be avoided by detecting cybersecurity vulnerabilities early and closing the vulnerabilities (Jaramillo, 2018; Katsumata, Hemenway and Gavins, 2010).

Another important risk is third-party risk. Third-party risk is the risk that arises from financial service providers relying on outside parties to ensure that digital finance platforms and applications are working effectively (Ale and Piers, 2000; Vitunskaite et al, 2019). Third-party risk is a big risk because financial service providers often rely on a supplier, vendor, or digital service provider to ensure that their digital finance platforms are working well. However, trusting third parties to fulfill their commitment may be difficult, and it creates vulnerabilities that could adversely affect users of digital financial services and become a setback for digital financial inclusion. To avoid third-party risk, financial service providers should develop a third-party risk management framework to mitigate third-party risks on time, and the framework should carefully spell out the procedures, processes, and policies for dealing with third-party risks when they arise (Ale and Piers, 2000; Vitunskaite et al, 2019). There may be a need to regularly audit vendors and ensure that they have appropriate cybersecurity measures in place to mitigate risks that emanate from their own end.

Automation risk is another digital technology risk that affect digital-only financial inclusion. While automation is often considered to be the future of risk management, automation poses some risk for digital-only financial inclusion (Arntz, Gregory, and Zierahn, 2017; Davis, Kumiega and Van Vliet, 2013; Pandita, Xiao, Yang, Enck and Xie, 2013). Automation risk is the risk that arises when digital platforms or applications are automated in a way that limit choice of digital financial services for users. In addition to limiting users' choice, automation can unintentionally introduce redundant operational complexity or software incompatibility issues once software is updated. However, some measures to reduce automation risks include troubleshooting digital platforms to detect early any vulnerabilities.

Another risk is data privacy risk which arises from unauthorized access to users' personal information such as users' name, email address, password, physical address, date of birth and transaction details of users (Theoharidou, Papanikolaou, Pearson, and Gritzalis, 2013; Wagner and Boiten, 2018). Malicious persons can gain unauthorized access to this information with the intention to cause harm to users (Onik et al, 2019). To avoid data privacy risks, there is a need to implement strong cybersecurity measures, adopt multi-factor authentication protocols, and adopt a dynamic password policy.

Another risks to consider is social engineering risk. This risk arises when malicious actors launch phishing attacks using social media, emails, and text messages, with the intent to trick the user to disclose their username, login password, social security number, credit card information, bank account information and any other sensitive information which malicious actors can use to gain unauthorized access to users' account (Abraham and Chengalur-Smith, 2010). To avoid social engineering risk, there is a need to implement cybersecurity awareness training for users of digital finance platforms and educate them on how to recognize and avoid phishing attacks (Salahdine and Kaabouch, 2019).

5. Concluding remarks

This chapter has identified the dangers of digital-only financial inclusion. It was argued that digital-only financial inclusion may be difficult to achieve when there is uneven availability and uneven access to digital devices. It was also argued that digital-only financial inclusion could lead to high cost of internet broadband, and it places much emphasis on accelerating digital access rather than protecting users who use digital finance platforms. Furthermore, it pays little attention to risk mitigation, and produces digital ID schemes that enable government surveillance. It also prioritizes digital access rather than financial health; and makes it easier to perpetrate fraud using digital means. Finally, it can enable the endless pursuit of power, and it prioritizes a digital version of financial inclusion at any cost.

In summary, it was argued that financial inclusion can achieve a lot more for people if there is a wholistic approach to financial inclusion, not just a digital approach. Indeed,

it is fair to concede that people need access to basic financial services, and that digital tools can facilitate access to basic financial services to a great extent. For instance, digital-only financial inclusion can increase convenience for financially included people, and lead to cost savings for providers of financial services. But enforcing a model of financial inclusion that is only digital is risky. Advancing digital-only financial inclusion plays down cyber risk, digital illiteracy risk and other risks, while placing much emphasis on accelerating digital access above all else. As much as possible, the strategies used to advance financial inclusion should not be too dependent on digital technologies because they only offer digital access and more access, but may not, on their own, improve financial health in a significant way.

6. Recommendations

It is recommended that policymakers should consider designing a non-digital approach to financial inclusion that can co-exist with existing digital approach to financial inclusion. And, where possible, they should strive to adopt both a digital and non-digital approach to financial inclusion. This would broaden financial inclusion and meet the needs of the excluded population who are not digitally-savvy.

It is also recommended that policymakers who are adopting a digital-only approach to financial inclusion should consider how digital financial inclusion programs can be designed to enhance users' wellbeing, not just giving them access to digital finance tools. There is a need for policymakers to develop policies that ensure that digital-only financial inclusion programs improve users' wellbeing, and legislation should be introduced to prevent digital-only financial inclusion from being captured as a tool for monopoly power by powerful corporations for profiteering or as a tool for State surveillance. Regulation should also be used to control unbridled capitalism, while more legislation can be introduced to address consumer protection and data protection issues.

It is also recommended that policymakers should place more emphasis on promoting a digital-first approach to financial inclusion rather than a digital-only approach to financial inclusion. A digital-first approach to financial inclusion is an approach to financial inclusion that use digital tools to expand financial services to unbanked and

underserved people, and use non-digital means to reach and serve those who cannot be reached or served by digital means. A digital-first approach to financial inclusion will be very useful in developing countries where people in urban and sub-urban cities can be served digitally while people in very remote areas can be best served using non-digital means or using human agents.

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