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Article

Financial inclusion, socioeconomic shocks and social protection in Nigeria amidst COVID-19 pandemic

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Abstract: Financial inclusion and social protection have been recognised as the primary essential stimuli from the potential they carry as avenues for economic development, especially with respect to reduction in poverty and inequalities, the creation of employment and the enhancement overall welfare and livelihood. However, inclusive access to financial resources and equitable access to social protection interventions have remained a significant concern in Nigeria. In addition, the emergence of the COVID-19 pandemic exposed the weakness of Nigeria in all sectors of the economy such as energy, health, education and food systems and low-level inclusive access to financial resources and social protection coverage. On the other hand, this study argues that financial inclusion and social protection has the potential to mitigation shocks orchestrated by the COVID-19 pandemic. This study empirically examines how social protection interventions and access to financial resources responded to COVID-19 pandemic. The study made use of data sourced from the World Bank's COVID-19 national longitudinal phone survey 2020 and applied the logit regression. The findings show that social protection and access to financial resources significantly associated with the likelihood of shock mitigation during the COVID-19 pandemic. The results show that social protection intervention reduces the probability of being severely affected by shocks by 0.431. Given this result, the study recommends that the government should put more effort into proper social protection intervention to mitigate the effect of the COVID-19 pandemic.

Keywords: COVID-19 pandemic; energy, financial inclusion; poverty reduction; socioeconomic shocks; social protection; sustainable development goals
JEL Classification: I31; I38; D14

1. Introduction

Assess to financial resources has continuously gained attention over the world among policymakers, researchers, industry actors and development-oriented agencies (Okafor et al., 2023). It means that financial inclusion is an essential stimulus from the potential it carries as an avenue for economic development, especially in the aspect of mitigation of the incidence of poverty, creation of wealth creation and improving welfare and overall livelihood (Ahuru et al., 2023; Ajagbe et al., 2023; Osabohien et al., 2022a, 2024; World Bank, 2022).

In recent times, financial inclusion has proven to be a significant concern around

the world (Ahuru et al., 2023; Akpa et al., 2022). The importance of financial inclusion has continued to grow among researchers, policymakers, and development-focused organisations all around the world. Its significance stems from the potential it offers as a tool for driving business prospect and overall economic growth especially in the areas of poverty reduction, job creation, wealth creation, and enhancing welfare and overall livelihood (Osabohien et al., 2022a, 2022b).

Financial inclusion has been a serious issue for a very long time as about 53.0% of individuals were found to be excluded from financial services (Akpa et al., 2022; EFInA, 2021). For Nigeria, though, on aggregate, financial inclusion objective was 80% by 2020, however, report from EFInA posits that only 64% of adults in Nigeria were financially included by the end of 2020 (EFInA, 2021). This implies that 36% of Nigerian adults remain entirely excluded from financial resources. In addition, huge gaps in financial access continue to exist for some of Nigeria's most financially neglected clusters. Women remain the largest group to be more financially excluded than the male counterparts, with only 45% of women using formal financial services, in relation to the male with 56%.

In response to the shortcomings of numerous countries in attaining established objectives, the global community, represented by the United Nations and the heads of state from 193 member nations, introduced the Sustainable Development Goals (SDGs) as a comprehensive developmental strategy for 2030. Commonly referred to as Agenda 2030, this initiative comprises 17 overarching goals, encompassing 169 specific targets and 230 indicators. The agenda serves as a universal call to address poverty, safeguard the environment, and ensure widespread well-being and prosperity. Central to the SDGs' 2030 agenda is the commitment to eradicate poverty with a determined pledge to inclusivity, leaving no one behind. Similar to the Millennium Development Goals (MDGs), the Global Goals of the SDGs are commendable and thoughtfully crafted to enhance the global quality of life (Ugwuegbe et al., 2018).

Before the pandemic, Nigeria and most developing countries were off-track for the actualisation of sustainable development goal of no poverty (SDG-1), zero hunger (SGD-2), good health and wellbeing (SDG-3) and reduced inequalities (SDG-10). In September 2015, Nigeria committed to the Sustainable Development Goals (SDGs) at the United Nations summit in New York, joining global efforts to address challenges outlined in the comprehensive SDGs treaty. The UN reported a 50% reduction in global extreme poverty from 1990 to 2015, with improved primary school enrolment and a decline in out-of-school children. However, over 60% of Nigeria's population, residing in rural areas, earns less than $1 per day (Otive, 2006). A study indicated a 41% poverty reduction rate in Sub-Saharan Africa in 2015, with Nigeria's poverty rate at 71.5%, exceeding the regional average (Mustapha et al., 2018). Approximately 120 million Nigerians live below the poverty line, and this rate continues to rise annually.

With the arrival of COVID-19 pandemic which has appeared in a period of high poverty, inequality, food insecurity among others in Nigeria, the COVID-19 virus has not only posed a threat to the achievement of the Sustainable Development Goals (SDGs) but has also exacerbated the challenges outlined in the agreed-upon SDGs (World Bank, 2020). To avert this global emergency, there is an urgent need to preserve global supply chains by mitigating the effect of the pandemic by increasing the invulnerability of citizens to shocks to the greatest extent, and looking forward

beyond the pandemic, to build more resilience with the use of social protection and financial inclusion.

Financial inclusion facilitates day-to-day living, and helps families and businesses plan for everything from long-term aspirations to unanticipated emergencies (Akpa et al., 2022; Olowookere et al., 2021). Furthermore, it continues, people are more likely to use other financial services, like savings, credit, and insurance, start and grow businesses, invest in education or health, manage risk, and weather financial shocks, all of which can improve the overall quality of their lives (Igharo et al., 2020). On the other hand, social protection is seen as one of the most veritable tools for building resilience against shocks and improve household livelihood (Igharo et al., 2020).

There has been an enormous growth in social protection over the last few decades, from conceptual frameworks to policy impact to budget allocations to programs and coverage. Social protection's appeal is largely due to the fact that it directly addresses the problem at hand, and hence its effects are immediate and always viewed as beneficial. There are various programs and policies aimed at alleviating poverty and raising vulnerability by enhancing people's ability to deal with economic and social challenges such as unemployment or exclusion, disease, disability or old age.

While studies have examined how social protection will reduce poverty and inequality (Matthew et al., 2019; Osabohien et al., 2020) among the most vulnerable, enhance welfare and overall livelihood (Norton et al., 2002) however, gaps in those studies pose a major limit in knowledge frontiers. In expanding the frontiers of knowledge, this study is among the first to empirically examine how social protection interventions and access to financial resources help mitigate socioeconomic shock orchestrated by the COVID-19 pandemic. This study is structured into five sections. Following this introduction is the review of related literature enshrined in section two. The research method is encapsulated in section three. Results are presented and discussed in section four, while the study concludes in section five.

2. Literature review

2.1. Theoretical literature

Although there are many studies on financial inclusion (Akpa et al., 2022; Ahuru et al., 2023; Demirgue-Kunt et al., 2017; Matekenya et al., 2021), there is no observed theory of financial inclusion in academic literature. There are different perspectives among researchers as to which group is the beneficiary of financial inclusion. While some believe that the beneficiaries of financial inclusion are the poor (Bhandari, 2018; Cull et al., 2014), others believe the beneficiaries of financial inclusion are the women (Demirguc-Kun et al., 2017; Ghosh and Vinod, 2017; Swamy, 2014) and some believe that the beneficiaries are both the poor and the women (World Bank, 2018), excluding other disadvantaged groups.

The vulnerable group theory of financial inclusion addresses the different perspectives of researchers regarding the perspectives of the beneficiaries. The theory argues that financial inclusion activities in any country should be targeted to the vulnerable groups of the country such as the poor, women, young people, elderly

people who suffered the most from economic crisis (Ozili, 2018). One merit of this theory is that it identified some members of the population to be vulnerable, and argued that financial inclusion activities be provided to them. One major setback this theory suffers is that does not indicate that financial inclusion be provided to everybody in the population, ignoring other disadvantaged groups like the ill, and disabled people. Another setback is that by excluding the man and implying that women are vulnerable groups, it could lead to societal resentment among the men towards women. If all the vulnerable groups are the actual beneficiaries of financial inclusion, financial inclusion could be effective in mitigating economic shocks.

Aside the beneficiaries of financial inclusion debate, there are other mixed opinions among researchers towards the agents responsible for delivering financial services to the beneficiaries. Some researchers argue that financial inclusion should be delivered by the public sector (Chibba, 2009; Staschen et al., 2013) which some believe that the private sector should deliver financial inclusion activities to the beneficiaries (Gabor and Brooks, 2017; Ozili, 2018). The public service theory of financial inclusion argues that financial inclusion activities should be delivered by the government to the citizens because it is a responsibility of the government to all the citizens of the country (Ozili, 2018). One merit of this theory is that it indicates that financial inclusion be provided to all its citizens, not discriminating any members of the population. One major demerit is that it ignores the private sector importance in promoting financial inclusion.

Another theory which is the special agent theory of financial inclusion, argues that specialized agents should be responsible for delivering financial inclusion activities to members of the excluded population (Ozili, 2018). According to this theory, the specialized agent must be skilled, be able to understand the characteristics of the excluded population, be able to understand the present informal financial system in the communities where the vulnerable groups reside, and be able to devise a means for integrating the local financial system into formal financial system. One merit of this theory is that since the agents responsible for delivering financial inclusion activities to the beneficiaries have quality knowledge and are very skilled, there is high degree of confidence in the delivery process.

One demerit is that if the special agent and principle are the governments, the system might become inefficient. Also, if the special agent is the private sector, the financial inclusion project can be abandoned if there is a breach in agreement by the government, hence, defeating the purpose of financial inclusion. From the above theories, it can be seen that the agent responsible for delivering the financial inclusion activities determines how effective financial inclusion can be in mitigating socioeconomic shocks. There are no know theories of social protection but empirical review of some previous works could reveal how social inclusion can be effective in addressing the socioeconomic shocks.

2.2. Empirical literature

This section provides definitions of social protection, and financial inclusion and examines how social protections and financial inclusion could affect some socioeconomic issues or shocks based on previous studies. would be reviewed.

2.2.1. Socioeconomic shocks and social protection

Different researchers have held different views on social protection. Devereux and Sabates-Wheeler (2010) defined social protection as a programme providing income to poor and vulnerable groups through medical care assistance, unemployment benefits, sickness benefits, and maternity assistance. That definition narrowed social protection to providing income. Norton et al. (2002) and Fiszbein et al. (2014) broadened the definition of social protection by likening social protection to the tools for reducing poverty, inequality, risk, and vulnerability. For the purpose of this study, we would use the definition that social protection as the public initiative to reduce the risk of poverty, inequality, and risk. Due to social protection importance, social protection programmes were recently included by the European Commission in the 2030 agenda for sustainable development because they play a key role in achieving some of the SDGs goals (UN, 2015).

The increasing number of disasters, and epidemics makes crisis management a key issue for policy makers in many countries (Tamer, 2004). Abdoul-Azize and El Gamil (2021) highlighted the importance of social protection as a key policy in dealing with the negative socioeconomic impacts of economic crisis. Although the study did not empirically determine how social protection could manage socioeconomic crisis, it revealed that social protections is a flexible and strategic tool to respond to the crisis caused by the COVID-19 pandemic (Abdoul-Azize et al., 2021).

The findings of Abdoul-Azize et al. (2021) were upheld by Banks et al. (2021) who explored how the COVID-19 pandemic could lead to an increase in the risk of unemployment and poverty amongst people with disabilities and how social protection could mitigate those risks considering the needs of people with disabilities in low-and middle-income countries. Despite the fact the study showed a negative association between social protection and socioeconomic crisis, it only focused on social protection targeted on people with disabilities.

From the studies above, it was seen that social protection is a good response to socioeconomic shocks (Abdoul-Azize et al., 2021; Banks et al., 2021). If social protection is a good response, then what does it comprise of? Banks et al. (2001) mentioned that social protection policies include the provision of productive resources, employment, minimum wage and food security to vulnerable groups. The COVID-19 pandemic has caused adverse effects such as increase in bankruptcies, poverty and social inequality in several economies of the world (Furman 2020; Gali, 2020; Odendahl and Springford, 2020). Therefore, the importance of social protection programmes in mitigating the shocks caused by the COVID-19 pandemic cannot be overstated. Nino-Zarazula et al. (2012) pinpointed the three key functions of social protection which includes: protecting the basic levels of consumption, facilitating human investment, and assisting the poor to overcome some difficulties.

2.2.2. Socioeconomic shocks and financial inclusion/resilience

Financial inclusion is one of the targets of the United Nation's (UN) Sustainable Development Goals (SDGs). Researchers have defined financial inclusion in different ways. Dev (2006) defined financial inclusion as the delivery of financial services at an affordable cost to the vulnerable groups (low-income groups and disadvantaged population). Sarma (2008) views financial inclusion as a process that ensures the ease

of access and use of financial services to all members of the economy. Kochhar (2009) refuted it and asserted that financial inclusion is when access to financial services is appropriate, transparent, and fair.

Ozili (2018) sees financial inclusion as the provision of access to financial services to everyone, especially the poor and other excluded members of the population. The definition has two things in common in that they emphasize on the provision of financial services, vulnerable groups. Therefore, it can be seen that financial inclusion is not only about making financial services accessible to everyone in the economy, including the vulnerable groups but also making sure access to financial services is appropriate.

Financial inclusion is now a focus of economic policymaking globally (Mehry et al., 2021). Acheampong et al. (2021) revealed that financial inclusion plays a key role in enhancing economic opportunities and income security in developing countries. Cull et al. (2014) analysed the effect of financial inclusion on poor households globally and found that financial inclusion has a negative effect on unemployment. Mol (2014) included that financial inclusion plays a vital role in reducing the viscous cycle of poverty by acting as a source of empowerment to the poor. The main consensus of these studies is that an increase in the access to financial services would likely reduce the likelihood of unemployment.

Some works did not agree with the conclusion of the above studies. Barnes et al. (2001) used micro-credit, indicated that financial inclusion had no effect on the unemployment levels in Zimbabwe. Also, Van Rooyen et al. (2012) analysed the impact of financial inclusion on unemployment in the Sub-Saharan countries, discovered that financial inclusion had little impact on unemployment levels. The argument of those results raises a question as to whether financial inclusion is really that effective in mitigating the risk of massive increased unemployment in developing countries, especially Nigeria.

Furthermore, Matekenya et al. (2021) mentioned that financial inclusion could manage risk and lessen the burden of financial shocks. To determine the effect of financial inclusion on other socioeconomic issues, Nanda and Kaur (2016) and Matekenya et al. (2021) used the Human Development Index (HDI) which captures health, human capital, and standard of livings and concluded that financial inclusion has a positive effect on the individual components of the HDI in the SSA region and other 68 countries.

The literature reviewed in this section failed to determine the effectiveness of financial inclusion in mitigating socioeconomic risks. This study will seek to address that gap in knowledge. This research contributes to the existing literature by investigating the ramifications of the COVID-19 pandemic or shock, with a specific emphasis on understanding the impact of this unprecedented event. The primary objective is to explore the role of social protection measures in alleviating and mitigating the adverse effects triggered by the pandemic. By delving into the intricate dynamics between the pandemic and social protection strategies, the study aims to provide valuable insights into designing and implementing effective policies. This research seeks to contribute to the ongoing discourse on building resilient systems that can adeptly respond to and alleviate the multifaceted challenges posed by the COVID-19 crisis.

3. Methodology

Studies have strongly argued on the connection between shocks, financial inclusion and social protection in Nigeria and other regions (Braden, 2022; Eze and Alugbuo, 2021; Eboh et al., 2022; Sani et al., 2019; Van Rooyen et al., 2012). However, the focus of this research will be on the influence of the COVID-19 pandemic or shock, and how social protection can be used to mitigate these shocks.

Prior to this study, the impact of financial inclusion and social protection on shocks amidst the COVID-19 pandemic has not been properly empirically investigated, to the knowledge of the researcher, which forms the basis of this study. Because of this gap in the literature, this study will focus on the process of empirically testing this area. The study applies the logit regression technique to evaluate the impact of social protection and financial inclusion on shocks amongst households in Nigeria amidst the COVID-19 pandemic.

Following the above preamble, assuming that Y represents the response of household i with respect to the outcome of the independent variables $x_{1i}, \ldots, x_{ni}$. Furthermore, assuming that $Y = 1$ capturing the probability of the household been affected by shocks, and $Y = 0$, otherwise. Thus, applying the logit method, the likelihood density for the household is presented in the following manner:

$$P(Y = 1|x_1, \ldots, x_n) = f(P(Y = 1|x_1, \ldots, x_n) \quad (1)$$

The function of f represents the logit distribution function such that it leads to:

$$P(Y = 1|x_1, \ldots, x_n) = \frac{\exp(\propto_0 + \alpha_1 x_1 +, \ldots, +\alpha_n x_n)}{1 + \exp(\alpha_0 + \alpha_1 x_1 +, \ldots, +\alpha_n x_n)} \quad (2)$$

Apparently, the distribution function of the logit model transmits the equation into the interval (0, 1). In explaining the logit further, the $\text{logit}(x)$ as:

$$\text{logit}(x) = \text{logit}\left(\frac{x}{1 - x}\right) \quad (3)$$

Equation (3) can be re-written thus,

$$\text{logit}\big(P(Y = 1|x_1, \ldots, x_n)\big) = \propto_0 + \alpha_1 x_1 +, \ldots, +\alpha_n x_n) \quad (4)$$

The variables include shocks (measured 1 if the household have been affected by shocks during the COVID-19 pandemic, 0 otherwise), social protection measured (1 if the household has received assistance from any institution such as the government, international organisations, religious bodies and others, and 0 if otherwise); financial inclusion (1 if the household has access to financial services and 0 if otherwise); X'_i with the symbol γ (γ = 1, 2, …., N) is a covariate of household characteristics such as age (in years) of the household heads, gender of the household heads (male of female), location of the households (rural or urban).

The study uses the baseline of the COVID-19 national longitudinal phone survey 2020 (CNLPS) collected by the World Bank in collaboration with the National Office of Statistics of Nigeria. The survey is a component of the World Bank's Living Standards Measurement Study—Integrated Surveys on Agriculture (LSMS-ISA) and are collected in partnership with the Nigerian Bureau of Statistics (NBS). In this study, the first round of the wave, called the baseline survey containing about 4976 households interviewed during the baseline survey was used. This data is considered robust because the focus of the survey by the World Bank is that the organization contributes to countries in various ways to help curtail the spread and the impact of

the COVID-19 pandemic. Furthermore, the data are nationally representative and offer comprehensive information on employment, income, food, and nutrition security indicators (World Bank, 2020).

4. Results and discussions

4.1. Summary statistics of the variable

The descriptive analysis of all the relevant variables in this study is shown in **Table 1**. The result, with respect to social protection, with a mean value of 0.1003, indicates that only 10% of households received assistance from government or donor agencies during COVID-19 pandemic. Shocks have a mean of 0.4494, indicating that 45% of were severely affected by shocks during the COVID-19 pandemic.

Other variables, age of the household heads, shows that the average age of the household heads in the sample is approximately 24 years. Gender variable (male = 1) has a mean value of 0.4994, indicating that 49.94% of household heads are males. The household location measures the location of the households; 1 if household is in a rural area and 0 if the household is in urban area; has a mean of 0.5654, indicating that 56.54% of households live in rural areas.

Table 1. Summary statistics of variables (source: authors compilation).

Variable	Measurement	Mean	SD	Min	Max
Shocks	1 if the household has been severely affected by shocks during COVID-19 pandemic, and 0 otherwise	0.2808	0.4494	0	1
Financial inclusion	1 if the household members have access to financial services such as an ATM, mobile banking/app, and 0 otherwise	0.2513	0.8192	0	1
Social protection	1 if the household received any assistance from the government or donor agencies and 0 otherwise	0.1003	0.6541	0	1
Age	Measuring the age (in years) of household heads	24.0158	18.0640	19	100
Gender	Dummy variable for gender: 1 if the household head is male and 0 if female	0.4994	0.5000	0	1
Household location	Dummy variable for household location:1 if household is in a rural area and 0 if the household is in urban area	0.5654	0.4957	0	1

4.2. Impact of social protection on shocks

The result for the impact of social protection and financial inclusion on shocks mitigation is presented in **Table 2**. The results in **Table 2** (column 1) imply that households that received assistance (social protection interventions) from any institution such as the government, local government, state government, non-governmental organisations, international organisation, religious bodies and others are less likely to be severely affected by shocks than households that did not. It shows that household members who have received assistance have a lower probability (0.431) of being severely affected by shocks than a household member who received no assistance. This finding relates to the ones obtained by Abdoul-Azize and Gamil (2021) proving that social protection interventions turned out to be an elastic and

weaponry to react the COVID-19 pandemic. Moreover, the study emphasised an insufficient comprehensive approach among the countries, particular, developing ones in effecting the social protection coverage to respond to COVID-19.

Table 2. Impact of financial inclusion and social protection on shocks (source: researcher's compilation).

Variables	1	2	3	4
Constant	−0.497* (0.000)	−0.509* (0.000)	−0.633* (0.000)	−0.509* (0.000)
Gender of the household heads	0.004 (0.944)	0.038 (0.522)	−0.031 (0.654)	0.038 (0.521)
Age of the household heads	0.001 (0.332)	0.001 (0.338)	0.002 (0.301)	0.001 (0.341)
Location of the household	0.030 (0.631)	0.030 (0.630)	0.155** (0.027)	0.030 (0.630)
Social protection	−0.431* (0.002)	−0.429* (0.002)	−0.191 (0.214)	−0.429* (0.002)
Financial inclusion	-	−0.108*** (0.073)	−0.108*** (0.075)	−0.108*** (0.073)
Log pseudolikelihood	−1190.743	−1190.540	−916.919	−1190.540
Prob > chi^2	0.011**	0.013**	0.112	0.009*
Pseudo R^2	0.006	0.006	0.005	0.006

Note: *, **, *** means significant at 1%, 5% and 10%, respectively.

In addition, the result proves that a household that received assistance from any institution are less likely to be to suffer the incidence of shocks which also confirms the 'a priori' expectation. The co-efficient of social protection also shows that social protection is statistically significant at 1% level. This is economically correct as social protection is a strong mitigation for shocks in a household. Social protection is very essential in helping households recover from or prevent shocks as it helps poor and disadvantaged households survive and thrive by building on their ability to manage with, cope with, and adjust to shocks, preventing them from falling (further) into hardship. This also relates to the findings of Matthew et al. (2019) that social protection helps build resilience against the weak and most vulnerable, particularly, among the farming households, thereby lowering the incidence of poverty.

Social protection provides numerous advantages, including improving adequate nourishment, healthcare, and schooling; minimising poverty transfer across children; and fostering institutional stability and economic prosperity. If a household member who has been affected by a shock from the COVID-19 such as loss of job, or a major provider in the household dying from the disease, with the help of social protection assistance the effect of the shock on the household member can be mitigated. For example, food discounts, subsidised housing and allowances, social security, social assistance equipment and energy discounts and allowances, agricultural input subsidies, and transportation benefits are all possible forms of aid. The regression also shows a negative relationship between shocks and social protection, meaning that an increase in social protection reduces shocks, this also coincides with the a priori expectation.

The results of the second regression in **Table 2** (column 2) also imply that a household member that has received assistance are less likely to be affected by shocks than a household member who did not. It shows that household members who have received assistance have a lower probability (0.429) of being affected by shocks than a household member who received no assistance. In addition, the result proves that a household member who has received assistance has a lower probability of being affected by shocks, which also confirms the 'a priori' expectation. It also shows the co-efficient has a statistical significance of 1% proving that social protection has a significant effect on shocks. The result also shows social protection to have a negative relationship with shocks proving that an increase in social protection reduces shocks, confirming the a priori expectation. As a household member who has received assistance has better chances of coping with shocks brought about by the pandemic.

The results of the third regression in **Table 2** (column 3) also imply that a household member that has received assistance are less likely to be affected by shocks than a household member who did not. It shows that household members who have received assistance have a lower probability (0.191) of being affected by shocks than a household member who received no assistance. In addition, the result proves that household that reside in rural communities have a higher probability of being affected by shocks, which also confirms the 'a priori' expectation. It also shows that social protection and shocks have a negative relationship proving that an increase in social protection reduces shocks.

The results of the first regression **Table 2** (column 1) imply that a household member that has access to financial services are less likely to be severely affected by shocks than a household member who does not have access to financial services. The result shows that household members who have access to financial services have a lower probability (0.108) of being affected by shocks than a household member who does not have access. In addition, the result proves that household members that have access to financial services have a lower probability of being affected by shocks, which also confirms the 'a priori' expectation.

The results show a 10% statistical significance of the co-efficient of financial inclusion on shocks which coincides with the a priori expectation. This is economically correct because in the event that a household member has been affected by a shock, such as the loss of life of a major provider in the household, access to savings (if be any) may help the household member to be able to cope with this shock, thereby mitigating its effect. The result shows a negative relationship between financial inclusion and shocks meaning that an increase in financial inclusion will lead to a reduction in shocks, coinciding with the a priori expectation.

The results of the second regression in **Table 2** also implies that a household member that has access to financial services are less likely to be affected by shocks than a household member who does not have access to financial services. It shows that household members who have access to financial services have a lower probability (0.108) of being affected by shocks than a household member who does not have access. In addition, the result proves that household members that have access to financial services have a lower probability of being affected by shocks, which also confirms the 'a priori' expectation. The result also shows the co-efficient of financial inclusion to have 10% statistical significance and a negative relationship between

financial inclusion and shocks, meaning that an increase in financial inclusion will lead to a decrease in shocks, coinciding with the a priori expectations.

The results of the fourth regression in **Table 2** also implies as well that a household member that have access to financial services are less likely to be affected by shocks than a household member who does not have access to financial services. It shows that household members who have access to financial services have a lower probability (0.108) of being affected by shocks than a household member who does not have access. In addition, the result proves that household members that have access to financial services have a lower probability of being affected by shocks, which also confirms the 'a priori' expectation. The result also shows the co-efficient of financial inclusion to have 10% significance proving that financial inclusion is significant in the variation of shocks. This is true as those who have access to things such as life insurance will be able to cope with the loss of life of a major provider in the household to the pandemic. The result also shows a negative relationship between financial inclusion and shocks, meaning that an increase in financial inclusion will lead to a decrease in shocks, coinciding with the a priori expectations.

5. Summary and conclusions

Based on empirical analysis, the study was able to investigate the contribution of social protection and financial inclusion on socioeconomic shock attenuation among Nigerian households during the COVID-19 epidemic. The findings from the logistic regression also showed that social protection had a significant impact in shock mitigation, as an increase in social protection interventions proved to reduce the probability of a household being severely affected by shock. Hence, more social protection interventions should be initialized in order to help build resilience among households, which is also in line with the sustainable development goal 1.5 (proper social protection coverage for risk and shock mitigation).

Financial inclusion also showed that an increase in access to financial services reduced the probability of a household being affected by shocks, meaning that the increase in access to financial services in households can reduce shocks. With financial inclusion showing to reduce the probability of a household being affected by shocks by 0.108, meaning that the increase in a household access financial services can reduce shocks such as food insecurity, that is services such as debit/credit cards, mobile banking, internet banking, among others.

The findings of the study validate the hypothesis that "social protection and financial inclusion have a significant effect on shocks amidst the COVID-19 pandemic in Nigeria. Therefore, there is enough evidence to conclude that the mitigation of shocks is to expand financial intermediaries and social protection coverage and this study has laid out a strategy that, if followed, will build resilience against future shocks. The study's findings give compelling evidence that financial inclusion and social protection interventions reduce the likelihood of being severely affected by shocks.

Therefore, expanding social protection coverage is essential for risk and shocks mitigation. Because, social protection aids in the development of household resilience to shocks and the prevention of future shocks. More effort should be put into social

protection, particularly by the government, which is supposed to be the primary provider of social protection to its citizens, as religious bodies provide more assistance than the federal government.

While this study illuminates the potential of financial inclusion and social protection in mitigating COVID-19 induced shocks in a single-country context, it acknowledges certain limitations. To enhance the robustness and generalizability of findings, a key recommendation is to broaden the research scope by incorporating multiple countries. A multi-country approach would offer a more nuanced understanding of how diverse socio-economic contexts respond to and benefit from strategies aimed at addressing the challenges posed by the pandemic. This expansion in scope would contribute to the development of more inclusive and effective policies to navigate the complex landscape of shocks orchestrated by the ongoing global health crisis.

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Reference

Abdoul-Azize, H. T., & El Gamil, R. (2021). Social protection as a key tool in crisis management: Learnt lessons from the COVID-19 pandemic. Global Social Welfare, 8, 107–116. https://doi.org/10.1007/s40609-020-00190-4

Acheampong, A. O., Appiah-Otoo, I., Dzator, J., & Agyemang, K. K. (2021). Remittances, financial development and poverty reduction in Sub-Saharan Africa: Implications for post-COVID-19 macroeconomic policies. Journal of Policy Modeling, 43(6), 1365–1387. https://doi.org/10.1016/j.jpolmod.2021.09.005

Ahuru, R. R., Osabohien, R., Al-Faryan, M. A. S., & Sowemimo, E. J. (2023). Information and communication technology adoption and unemployment in West Africa Monetary Zone. Managerial and Decision Economics, 44(1), 388–398. https://doi.org/10.1002/mde.3688

Ajagbe, S. T., Johnson, A. A., Taoridi, A. A., et al. (2023). Nexus between Household Savings and Gross Capital Formation in Nigeria. Acta Universitatis Danubius. Economica, 19(1), 80–94.

Akpa, A. F., Osabohien, R., Ashraf, J., & Al-Faryan, M. A. S. (2022). Financial inclusion and post-harvest losses in West African economic and Monetary Union. Agricultural Finance Review, 83(2), 320–332. https://doi.org/10.1108/afr-06-2022-0076

Banks, L. M., Davey, C., Shakespeare, T., & Kuper, H. (2021). Disability-inclusive responses to COVID-19: Lessons learnt from research on social protection in low-and middle-income countries. World development, 137, 105178. https://doi.org/10.1016/j.worlddev.2020.105178

Barnes, C., Keogh, E., & Nemarundwe, N. (2001). Microfinance program clients and impact: An assessment of Zambuko Trust, Zimbabwe. Washington, DC: Aims.

Bhandari, B. S. (2018). Life insurance-social security and financial inclusion. Bimaquest, 18(2).

Braden, N. (2022). The collateralisation of social protection in Kenya: A review of the financial inclusion-social policy nexus. Available online: https://www.soas.ac.uk/sites/default/files/2022-10/economics-swp007.pdf (accessed on 16 November 2024).

Chibba, M. (2009). Financial inclusion, poverty reduction and the millennium development goals. The European Journal of

Development Research, 21(2), 213–230. https://doi.org/10.1057/ejdr.2008.17

Cull, R., Ehrbeck, T., & Holle, N. (2014). Financial inclusion and development: recent impact evidence, Washington, DC. World Bank Group, 88169, 1–12

Demirguc-Kunt, A., Klapper, L., & Singer, D. (2017). Financial inclusion and inclusive growth: A review of recent empirical evidence. Washington, DC: The World Bank. https://doi.org/10.1596/1813-9450-8040

Dev, S. M. (2006). Financial inclusion: Issues and challenges. Economic and Political Weekly, 41, 4310–4313.

Devereux, S., & Sabates-Wheeler, R. (2015). Graduating from social protection? Editorial introduction. ids Bulletin, 46(2), 1-12. https://doi.org/10.1111/1759-5436.12124

Eboh, I. A., Ebele, N. S., & Gertrude, M. A. (2022). Social Protection, financial depth, soundness and inclusive growth in Nigeria. American Journal of Humanities and Social Sciences Research, 6(1), 17–28.

EFInA. (2021). Access to Financial Services in Nigeria survey 2020.

Eze, E., & Alugbuo, J. C. (2021). Financial inclusion and poverty reduction in Nigeria: A survey-based analysis. GSC Advanced Research and Reviews, 7(3), 075–084. https://doi.org/10.30574/gscarr.2021.7.3.0127

Fiszbein, A., Kanbur, R., & Yemtsov, R. (2014). Social protection and poverty reduction: global patterns and some targets. World Development, 61, 167–177. https://doi.org/10.1016/j.worlddev.2014.04.010

Furman, J. (2020). 21 Protecting people now, helping the economy rebound later. Mitigating the COVID Economic Crisis: Act Fast and Do Whatever, 191.

Gabor, D., & Brooks, S. (2017). The digital revolution in financial inclusion: International development in the Fintech era. New Political Economy, 22(4), 423–436. https://doi.org/10.1080/13563467.2017.1259298

Gali, J. (2020). The effects of a money-financed fiscal stimulus. Journal of Monetary Economics, forthcoming. https://doi.org/10.3386/w26249

Ghosh, S., & Vinod, D. (2017). What constrains financial inclusion for women? Evidence from Indian micro data. World Development, 92, 60–81. https://doi.org/10.1016/j.worlddev.2016.11.011

https://efina.org.ng/publication/access-to-financial-services-in-nigeria-survey-2020/

Igharo, A. E., Osabohien, R., Onyemariechi, G. O., & Ibidapo, D. T. (2020). Monetary policy transmission mechanism, innovative banking system and economic growth dynamics in Nigeria. International Journal of Business Innovation and Research, 21(1), 1–22. https://doi.org/10.1504/ijbir.2020.104032

Kochhar, S. (2009). Speeding Financial Inclusion. New Delhi, India: Skoch Development Foundation

Matekenya, W., Moyo, C., & Jeke, L. (2021). Financial inclusion and human development: Evidence from Sub-Saharan Africa. Development Southern Africa, 38(5), 683–700. https://doi.org/10.1080/0376835x.2020.1799760

Matthew, O. A., Osabohien, R., Ogunlusi, T. O., & Edafe, O. (2019). Agriculture and social protection for poverty reduction in ECOWAS. Cogent Arts & Humanities, 6(1), 1682107. https://doi.org/10.1080/23311983.2019.1682107

Mehry, E. B., Ashraf, S., & Marwa, E. (2021). The impact of financial inclusion on unemployment rate in developing countries. International Journal of Economics and Financial Issues, 11(1), 79. 79–93. https://doi.org/10.32479/ijefi.10871

Mol, S. (2014), Financial inclusion: Concepts and overview in Indian context. Abhinav International Monthly Refereed Journal of Research in Management and Technology, 3(6), 28–35.

Nanda, K., & Kaur, M. (2016). Financial inclusion and human development: A cross-country evidence. Management and Labour Studies, 41(2), 127–153. https://doi.org/10.1177/0258042x16658734

Niño-Zarazúa, M., Barrientos, A., Hickey, S., & Hulme, D. (2012). Social protection in Sub-Saharan Africa: getting the politics right. World Development, 40(1), 163–176. https://doi.org/10.1016/j.worlddev.2011.04.004

Norton, A., Conway, T., & Foster, M. (2002). Social protection: defining the field of action and policy. Development Policy Review, 20(5), 541–567. https://doi.org/10.1111/1467-7679.00189

Odendahl, C., & Springford, J. (2020). Bold policies needed to counter the coronavirus recession. Mitigating the COVID Economic Crisis: Act Fast and Do Whatever It Takes, 145–150.

Okafor, V. I., Olurinola, I. O., Bowale, E., & Osabohien, R. (2023). Financial development and income inequality in Africa. Humanities and Social Sciences Communications, 10(1). https://doi.org/10.1057/s41599-023-01810-y

Olowookere, J. K., Hassan, A. O., Adewole, A. O., Aderemi, T. A. (2021). Small and Medium Scale Enterprises (SMEs) Financing and Sustainable Economic Growth in Nigeria. The Journal of Accounting and Management, 11(1), 220–228.

Osabohien, R. A, Jaaffar, A. H., Ibrahim, J., et al. (2024). Socioeconomic shocks, social protection and household food security amidst COVID-19 pandemic in Africa's largest economy. PLoS ONE, 19(1), e0293563.

https://doi.org/10.1371/journal.pone.0293563

Osabohien, R., Matthew, O., Ohalete, P., & Osabuohien, E. (2020). Population-poverty-inequality nexus and social protection in Africa. Social Indicators Research, 151(2), 575–598. https://doi.org/10.1007/s11205-020-02381-0

Osabohien, R., Worgwu, H., Adediran, O., & Soomro, J. A. (2022b). Social entrepreneurship and future employment in Nigeria. International Social Science Journal, 73(250), 927–937. Portico. https://doi.org/10.1111/issj.12360

Osabohien, R., Worgwu, H., Rafi, S. K., et al. (2022a). Impact of business innovation on future employment in Nigeria. Managerial and Decision Economics, 43(8), 3795–3806. https://doi.org/10.1002/mde.3629

Otive, I. (2006). The Millennium Development Goals: Can Nigeria Meet the Goals In 2015? in Symposium on Mdgs and Nigeria: Issues, Challenges and Prospects, Institute of Chartered Accountants of Nigeria.

Ozili, P. K. (2018). Impact of digital finance on financial inclusion and stability. Borsa Istanbul Review, 18(4), 329–340. https://doi.org/10.1016/j.bir.2017.12.003

Sani Ibrahim, S., Ozdeser, H., & Cavusoglu, B. (2019). Financial inclusion as a pathway to welfare enhancement and income equality: Micro-level evidence from Nigeria. Development Southern Africa, 36(3), 390–407. https://doi.org/10.1080/0376835x.2018.1498766

Sarma, M. (2008), Index of Financial Inclusion. European: Indian Council for Research on International Economic Relations, Working Paper No. 215.

Staschen, S., & Nelson, C. (2013) The role of government and industry in financial inclusion. In J. Ledgerwood (Ed.), The new microfinance handbook: A financial market system perspective. Washington, DC: The World Bank. pp. 71–96.

Swamy, V. (2014). Financial inclusion, gender dimension, and economic impact on poor households. World Development, 56, 1–15. https://doi.org/10.1016/j.worlddev.2013.10.019

Tamer, M. (2004). Crisis Management in Turkey and the Police Organization Evaluation of the Structure in Terms of Terrorism (Turkish). Polis Dergisi, 40, 281–289.

Ugwuegbe, U., Urama, N. E., & Iloh, E. C. (2018). Meeting the 2030 SDG in Nigeria: The role of entrepreneurship development. AfriHeritage Policy Brief No. 16 / May 2018

United Nations. (2015). Transforming our world: The 2030 agenda for sustainable development. New York: United Nations, Department of Economic and Social Affairs.

Van Rooyen, C., Stewart, R., De Wet, T. (2012), The impact of microfinance in Sub-Saharan Africa: A systematic review of the evidence. World Development, 40(11), 2249–2262. https://doi.org/10.1016/j.worlddev.2012.03.012

World Bank. (2020). The impact of COVID-19 (Coronavirus) on global poverty: Why Sub-Saharan Africa might be the region hardest hit. Available online: https://blogs.worldbank.org/opendata/impact-covid-19-coronavirus-global-povertywhy-sub-saharan-africa (accessed on 10 November 2023).