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EFFECT OF FINANCIAL DEVELOPMENT ON SOCIAL SUSTAINABILITY IN NIGERIA

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ABSTRACT

The social dimension of sustainable finance relates to the application of financial principles to solving social problems in order to maximize social returns and benefits. By extension, the development of the financial system is expected to stimulate social improvements and benefits by bringing about social dividends on investments in social projects. This study aims to test the preceding assumption by investigating the effect of financial development on social sustainability in Nigeria between 1990 and 2024 using Autoregressive Distributed Lag (ARDL) regression technique. In the study, life expectancy, financial development index, and gross domestic product per capita extracted from World Development Indicators (WDI) were used to measure social sustainability, financial development, and economic growth respectively while government recurrent expenditure on social and community services extracted from Central Bank of Nigeria's Statistical Bulletin was used to measure public social investment. Empirically, the study found that in both short- and long-runs, financial development has positive and significant effect on social sustainability in Nigeria and likewise, social and community investment exerts positive and significant effect social sustainability in Nigeria unlike economic growth which has negative significant effect on social sustainability in Nigeria. The study concludes that social sustainability in Nigeria is enhanced through financial development. This points to the need for increased investments in financial system that are geared towards development of the system. This will stimulate social sustainability in terms of higher life expectancy in Nigeria.

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1. Introduction

Over the last few years, the global growth of development has progressively highlighted a multidimensional form of sustainability that does not solely focus on economic growth and development, but also on social well-being, equity and access to necessary services. Social sustainability has become a key aspect of sustainable development models because it aims to enhance human welfare and inclusive access to opportunities (Organisation for Economic Co-operation and Development [OECD], 2019; United Nations Environment Programme [UNEP], 2020). The financial system is also known to be a major contributor to sustainable development in this emerging paradigm due to its ability to mobilise resources and redistribute them to productive and welfare enhancing investments. Improvements in the depth, efficiency, accessibility, and stability of financial institutions and markets, known as financial development, has been found to be a key driver of economic and social transformation (Beck, 2020; World Bank, 2022). A properly operating financial system helps households and firms through access to credit, increased mobilisation of savings, and facilitation of investment activities to achieve better living standards, such as investments in health, education, and entrepreneurship (Allen et al., 2019). These services are especially needed in

developing economies, where people tend to be restricted in their financial means to enhance their socio-economic status. According to empirical evidence, financial development may impact social outcomes in different transmission mechanisms, such as financial inclusion, creation of jobs, and enhanced access to basic services (Demirguc Kunt et al., 2018). Moreover, the role of the interventions by the public sector, particularly, the spending by the government on social and community services, is complementary, directly contributing to the improvement of welfare and human development (OECD, 2020). Nevertheless, there is controversy over how far financial development can lead to enhanced social sustainability, especially in developing nations where structural and institutional factors are highly disadvantageous.

Nigeria has an interesting situation where this relationship can be analyzed. The country has over the last few decades undertaken various reforms in the financial sector geared towards promoting financial deepening, inclusion and stability. Nonetheless, aspects of social indicators like life expectancy and quality healthcare are relatively low, which questions the efficacy of financial development in providing broad-based social benefits (World Bank, 2023; International Monetary Fund [IMF], 2021). Moreover,

recent findings indicate that economic growth might not be adequate to enhance social good in the lack of all-inclusive financial systems and sound policy frameworks (Adeleye et al., 2020; Udeagha and Muchapondwa, 2022). This highlights the necessity of analyzing the role of financial development in social sustainability in the Nigerian context.

Although Nigeria has continued to work hard to enhance the financial system, there is still a considerable lack of interconnection between the growth in the financial sector and the social sustainability performance. Though financial development indicators, including banking penetration and financial innovation have increased over the years, there has been a relative improvement in major markers of social well-being, including life expectancy. This implies that the advantages of financial development might not be well-spread to the rest of the population. One of the crucial points is that it is possible that financial development in Nigeria is not inclusive enough and is not well-organized to facilitate socially productive investments. The low access to finance by vulnerable groups, as well as structural inefficiency in financial intermediation, can become an obstacle to the financial system creating meaningful social dividends. Moreover, despite the

anticipated complementary roles of government spending on social and community services in financial development, there are still concerns about the effectiveness of such spending and its effect on the real welfare outcomes. In addition, the contribution of economic growth towards enhancing social sustainability is not clear in the Nigerian context. It has been shown that economic growth has not always been associated with higher living standards and this implies that growth may not be enough to tackle the social problems. This casts significant questions on the roles of financial development, social investment (public) and economic growth in determining the social sustainability outcomes. With such apprehensions, it is evident that there is a need to conduct an empirical study to determine the impact on social sustainability of financial development in Nigeria. In particular, one should evaluate how financial system improvements, as well as state investment and economic growth have influenced social welfare over the years. This research aims to fill in this gap by exploring the short-run and long-run consequences of financial development on social sustainability in Nigeria.

Therefore, the main objective of this study is to examine the effect of financial development on social sustainability in

Nigeria from 1990 to 2024. In particular, the study examines the relevance of the overall financial development to social sustainability and also determines the role of government spending on social and community services and economic development on social sustainability in Nigeria. Besides, the research aims to explore the short-run and long-run dynamics of the relationship between the financial development and social sustainability in the Nigerian context.

The following research questions inform this research: To what degree financial development impacts social sustainability in Nigeria? How does the government spending on social and community services contribute to the social sustainability in Nigeria? How far does economic growth help or hamper social sustainability?

Based on the objectives of the study, the following null hypotheses have been developed:

H₀₁: Financial development does not significantly influence social sustainability in Nigeria;

H₀₂: Government expenditure on social and community services does not significantly influence social sustainability in Nigeria; and

H₀₃: Economic growth does not significantly influence social sustainability in Nigeria.

2. Literature Review

2.1 Conceptual Review

2.1.1 Social Sustainability

Social sustainability is one of the pillars of sustainable development that are concerned with enhancing human life, equal allocation of resources, and access to basic services like healthcare, education, and social security. It indicates the ability of an economy to maintain and improve the living standards of people living in different generations, which is often measured using life expectancy and human development results (Udeagha & Muchapondwa, 2022). In contrast to strictly economic indicators, social sustainability reflects the welfare consequences of development processes and how economic benefits are converted into better living conditions. According to empirical evidence, economic, institutional and financial factors in combination impact social sustainability. Prempeh (2024) demonstrates that economic growth and financial development have a strong impact on welfare performance in developing areas, whereas Halim and Moudud-UI-Huq (2024) stress that the macroeconomic and financial policies need to incorporate social considerations to achieve sustainable development objectives. On the same note, OECD

(2019) points out that social investment and inclusive financial systems play a vital role in fostering equitable development. Nevertheless, in most developing economies, such as Nigeria, the macroeconomic indicators have not been improved at the same pace as social outcomes, and it may be necessary to have more inclusive and effective development mechanisms (World Bank, 2023).

2.1.2 Financial Development

Financial development is the growth and advancement of financial systems in depth, efficiency, accessibility and stability. It eases the mobilization of savings, distribution of capital, and the management of risks, therefore, promoting economic and social development (Beck, 2020). The financial system is instrumental in directing resources into productive investments that are either productive in terms of welfare outcomes like healthcare and education. Regarding the effects of financial development, there are conflicting findings found in empirical studies. Anton and Afloarei Nucu (2020) discover that financial development through efficiency of investment increases sustainability whereas the study by Sun et al. (2023) reveals that it substantially increases sustainable results in terms of efficient capital allocation. Conversely, Habiba and Xinbang (2022) inform that financial development can be

counterproductive in the field that can be described as the existence of weak institutional frameworks. Besides, Yadav et al. (2024) also prove that financial development can have different effects on the countries based on their structural conditions, which makes it even more important to analyze them in context.

2.1.3 Economic Growth

Economic growth is the growth of economic production and income levels which is usually quantified in terms of GDP per capita. It is regarded as one of the main forces of development and welfare increase. Nonetheless, recent findings indicate that economic growth and social sustainability are not directly related. Adeleye et al. (2020) discover that economic growth may not always lead to better welfare outcomes in Sub-Saharan Africa, especially when the institutions are weak. Equally, OuYang et al. (2024) demonstrate that economic growth can lead to worsening the environment without necessarily influencing the social situation. The findings indicate that economic growth should be supplemented with inclusive policies and the mechanism of resources distribution to improve social sustainability.

2.1.4 Social Investment

Social investment, especially government spending on social and community services, is government initiatives to

enhance welfare outcomes by providing healthcare, education and social infrastructure. It is vital in increasing the level of social sustainability by directly increasing the access to the necessary services. Empirical researches emphasise the role played by government investment in determining welfare outcomes. According to the OECD (2020), the quality of life and inequality decrease when the government invests a lot in social services. Likewise, according to the World Bank (2021, 2022), the outcomes of human development are improved by the investment made by the population. But social investment can be justified only when the quality of governance and effective distribution of resources is ensured.

2.2 Theoretical Review

This paper is based on the theory of finance-led growth, which suggests that financial growth triggers economic growth by enhancing resource allocation, lowering transaction costs, and enabling investment (Beck, 2020). According to this theory, financial development increases the economic performance, which subsequently increases welfare outcomes. The financial inclusion theory also states that when households have access to financial services, they are able to invest in education, healthcare and income-generating activities, which in turn has a

direct positive social impact (Allen et al., 2019). Besides this, the endogenous growth theory has placed emphasis on the importance of financial development in enhancing innovation and development of human capital that are vital in long term sustainability. Nonetheless, the inequality hypothesis offers an alternative, indicating that financial development can enhance the problem of inequality in case the distribution of access to financial resources is not even (Ozili, 2021). This highlights the need to be inclusive in ensuring that financial development can help in social sustainability.

2.3. Empirical Review

Empirical research conducted in the recent past has given subtle understanding of the correlation between financial development and the sustainability performance in various economic settings. As an example, in their article on the growth and development of Asian economies, Ahmad et al. (2024) examined how financial development impacts sustainability asymmetrically, with respect to the Environmental Kuznets Curve (EKC), through the application of sophisticated nonlinear econometric methods. Their results indicated that the effect of financial development on different economic circumstances is not constant, and therefore, financial development does not have the same effect on sustainability. The

research suggests that institutional frameworks should be reinforced to make sure that financial deepening would be translated into sustainable results. In the same vein, Alam et al. (2024) determined the relationship between financial development, globalisation, and economic growth in India through a macroeconomic modelling approach and discovered that financial development strongly interacts with other macroeconomic variables in determining the sustainability results. They highlight the importance of integrated policy frameworks to ensure that the development of the financial sector is in tandem with globalisation and growth policies.

In another study, Yadav et al. (2024) examined BRICS countries with panel econometric models to determine the role of financial development in the patterns of sustainability. Their findings reveal that financial development is a very important factor in the determination of sustainability trajectories, but its effectiveness is contingent on structural factors that are country specific. The authors suggest improving the efficiency and inclusiveness of the financial sector in order to improve the sustainability outcomes. Similarly, Ganda (2024), using a panel VAR framework of BRICS economies, investigated the interplay between financial development, technological

innovation, and energy dynamics. The research discovered that the indirect effect of financial development on sustainability is the advancement of technology and efficiency, and consequently, suggests policies that combine financial sector reforms with innovational-based growth policies.

Additional support is given by Horky and Fidrmuc (2024), who analyzed EU and ASEAN states with the help of the panel data methods and revealed that financial development enables sustainable investment by enhancing the access to long-term capital. Their research suggests the deepening of the financial markets to enable the investments of a big scale on a sustainable basis. Correspondingly, Halim and Moudud-Ul-Huq (2024), in their cross-country study of BRIC and CIVETS economies based on econometric modelling, have shown that financial development is a key determinant of sustainable development goals, especially when it is coupled with trade openness and policy support, and therefore recommend integrated economic and financial policies. Based on the dynamic relationships, Mayanja et al. (2024) used the Autoregressive Distributed Lag (ARDL) model to test the nexus of financial development and sustainability indicators in the Ugandan context. They discover that financial development has both the short-

term and long-term substantial impacts on sustainability, thus the recommendation suggests that the policymakers ought to consider employing long-term financial sector policies to maintain the development results.

In the same line, Nathaniel et al. (2024) with their dynamic ARDL simulations evidence that financial development has a pivotal role in the long-term sustainability, but consistency in policies and structural changes play a crucial role in increasing the effects on a long-term perspective. Lastly, Muhammed et al. (2025) explored the connection between financial development and sustainability in the Nigerian setting through time-series methods. In their study, the authors discovered that financial development can have a strong impact on the sustainability outcomes, but they analyzed the outcomes using mainly environmental indicators instead of social aspects. The authors suggest that increasing the efficiency in the

financial sector and increasing access to finance can increase sustainability outcomes in Nigeria, but also indicate that future research would benefit by adding additional indicators of social sustainability.

3. Methodology

This study aims to investigate the effect of financial development on social sustainability in Nigeria between 1990 and 2024 using Autoregressive Distributed Lag (ARDL) regression technique. In the study, life expectancy, financial development index, and gross domestic product per capita extracted from World Development Indicators (WDI) were used measure social sustainability, financial development, and economic growth respectively while government recurrent expenditure on social and community services extracted from Central Bank of Nigeria's Statistical Bulletin was used to measure public social investment.

The study variables and their operationalization are summarized in Table 1.

Table 1: Operationalization of Variables

Name	Abbreviation	Type	Measurement
Social sustainability (SOS)	SOS	Dependent Variable	Life expectancy at birth
Financial development (FND)	FND	Independent Variable	Financial development index
Economic growth (GDP)	GDP	Control Variable	Gross domestic product per capita

Social Investment (SOI)	SOI	Control Variable	Federal Government recurrent expenditure on social and community services
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The model for study is as specified in equation (1).

$$SOS_t = \theta_0 + \theta_1 FND_t + \theta_2 GDP_t + \theta_3 SOI_t + \varepsilon_t$$

Where:

SOS= Social sustainability;

FND= Financial development;

GDP=Economic growth;

SOI=Social investment;

ε =error term;

θ_0 =intercept of the model;

θ_1, θ_2 and θ_3 = parameters of the model.

It is expected that $FND > 1$, $GDP > 1$ and $SOI > 1$

(1)

4. Results and Discussion

4.1 Unit Root Test

Table 2 presents the Augmented Dickey-Fuller (ADF) unit test statistics for the study.

Table 2: Augmented Dickey-Fuller (ADF) Unit Test Statistics

Level				First Difference		
Variable	ADF	Prob.	Remarks	ADF	Prob.	Remarks
SOS	-1.8183	0.3679	Not stationary	-10.1654	0.0000	Stationary
FND	-3.0422	0.0373	Stationary			
GDP	-1.1245	0.6998	Not stationary	-7.2873	0.0000	Stationary
SOI	-1.2189	0.6599	Not stationary	-6.5219	0.0000	Stationary

According to the ADF statistics in Table 2, only financial development (FND) is stationary in level; the other variables (SOS, GDP, and SOI) are stationary at first difference. Therefore, the series for the study are of mixed order of integration, comprising of I(1) and I(0) series.

Table 3: F-Bounds Test

Test Statistic	Value	Significance Level	I(0)	I(1)
F-statistic	5.3297	10%	2.37	3.2
K	3	5%	2.79	3.67
		1%	3.65	4.66

According to the F-bounds test in Table 3, the F-statistic (5.3297) exceeds the upper bound I(1), hence the null hypothesis of no levels relationship among variables, can be rejected at any of the three levels of

4.2 Cointegration Test

Table 3 presents the result of the F-bounds test.

significance (1%, 5% and 10%). It can be stated therefore that there is a long-run relationship between financial development and social sustainability in Nigeria.

4.3 Model Estimation

Table 4 presents the result of the ARDL model.

Table 4: ARDL Model Estimates

Dependent Variable: SOS				
Method: ARDL				
Variable	Coefficient	Std. Error	t-Statistic	Probability
SOS	0.8330	0.0996	8.3556	0.0000
FND	22.8210	5.5352	4.1228	0.0001
GDP	-7.52E-06	2.94E-06	-2.5577	0.0137
SOI	0.0033	0.0013	2.4872	0.0163
C	4.4721	4.2547	1.0511	0.2984
R-squared	0.8899	Durbin-Watson stat		2.0154
Adjusted R-squared	0.8809			
F-statistic	99.0155			
Prob(F-statistic)	0.0000			

According to Table 4, Autoregressive Distributed Lag (ARDL) model result shows that in the long-run, financial development has positive and significant effect on social sustainability in Nigeria and likewise, social and community investment exerts positive significant

effect social sustainability in Nigeria unlike economic growth which has negative significant effect on social sustainability in Nigeria. This finding is further buttressed by the result of the ARDL Error Correction Regression presented in Table 5.

Table 5: ARDL Error Correction Regression Estimates

Dependent Variable: SOS				
ECM Regression				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
ECT(-1)	-0.1669	0.0310	-5.3688	0.0000
R-squared	0.3493	Durbin-Watson stat		2.0154
Adjusted R-squared	0.3493			
Durbin-Watson stat	2.0154			

According to Table 5, ARDL error correction regression, the Error Correction Term (ECT) is negative (-0.1669) and statistically significant at 1%. This further confirms the existence of long-run

4.4 Diagnostic Tests

Table 6 summarizes the diagnostic tests for the model.

Table 6: Diagnostic Tests

Test	Value	Prob.	Remarks
Jarque-Bera Normality	45.5609	0.6715	Normality
Breusch-Godfrey Serial Correlation LM	2.0861	0.1850	No serial correlation
ARCH Heteroscedasticity	4.7888	0.1332	Homoscedasticity
Ramsey RESET	0.9143	0.3438	No misspecification problem

According to Table 6, the ARDL model estimated is normally distributed, homoscedastic, correctly specified and suffers no serial correlation problem.

5. Conclusion and Recommendations

This study investigated the effect of financial development on social sustainability in Nigeria between 1990 and 2024 using Autoregressive Distributed Lag (ARDL) regression technique. The study found that in both short- and long-runs, financial development has positive and significant effect on social sustainability in Nigeria and likewise, social and community investment exerts positive and significant effect social sustainability in Nigeria unlike economic growth which has negative significant effect on social sustainability in Nigeria.

The study concludes that social sustainability in Nigeria is enhanced through financial development. This points to the need for increased investments in financial system that are geared towards development of the system. This will stimulate social sustainability in terms of higher life expectancy in Nigeria.

relationship among the variables and it means that there is an annual adjustment rate of about 16.7 per cent correction of short-run disequilibrium in the model.

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