

# Determinants of Inclusive Growth in Selected West African Countries

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## Abstract

In West Africa, the determinants of inclusive growth remain underexplored, with most countries exhibiting varying degrees of institutional challenges and financial access. With this in mind, the purpose of this research is to examine the impact of financial inclusion and institutional quality as determinants of inclusive growth. Specifically, the study examined the relationship between the components of financial inclusion (number of ATM users and number of depositors) and institutional quality (control of corruption and political stability) on inclusive growth proxy by gross domestic product per capita. The study focused on ten (10) West African selected countries over the period of 2013 to 2023. The study used the ex-post facto research design, while the population of the study comprised the 18 countries in West Africa, out of which 10 countries were conveniently sampled for the study as a result of the availability of data which was utilised using Purposive Sampling Technique. The study used secondary quantitative data in panel data structure (time series and cross sections) and used both descriptive and static regression (pooled, fixed effect and random effect) techniques in analysing the data. The findings from the causality relationship at aggregate level, reveal a bi-directional causality and a symbiotic relationship exists among number of ATM users (F-stat = 3.39069; Prob. 0.0009), number of depositors (F-stat = 1.46482; Prob. 0.0006), control of corruption (F-stat = 2.68201; Prob. 0.0060), and Political stability (F-stat = 3.38995; Prob. 0.0008) and inclusive growth. However, the results at the disaggregated level, on the one hand, reveal that the two components of financial inclusion (number of commercial bank branches (F-stat = 0.81216; Prob. 0.0003), number of depositors (F-stat = 1.46482; Prob. 0.0009)) reveal a symbiotic relationship, while on the other hand, the results at the disaggregated level regarding the two components of institutional quality (control of corruption (F-stat = 0.89072; Prob. 0.0003) and the political stability (F-stat = 3.338998; Prob. 0.0006)) showed also a symbiotic relationship. Finally, judging from the results of the static panel regression, the findings reveal that the num-

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ber of ATM users ( $\beta = 0.492$ ;  $P$  value = 0.0001), number of depositors ( $\beta = 0.249$ ;  $P$  value = 0.0000), control of corruption ( $\beta = 0.722$ ;  $P$  value = 0.0003 and political stability ( $\beta = 0.842$ ;  $P$  value = 0.0000) were all positively and significantly related to inclusive growth of the selected West African countries. Hence, the study concludes that financial inclusion (measured by the number of ATM users, and number of depositors) and institutional quality (measured by control of corruption and political stability) have a significant and positive symbiotic relationship with inclusive growth in the selected West African countries. Deposit money banks can boost financial inclusion by increasing branch networks and deploying more ATMs in underserved areas, especially rural areas. Government should ensure a stable political platform in order to provide the necessary foundation for sound economic policies, effective governance and social cohesion, of all which are crucial for achieving inclusive growth.

### Keywords

Inclusive Growth, Financial Inclusion, Institutional Quality, Control of Corruption, Political Stability, Number of ATM Users

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## 1. Introduction

Internationally, the achievement of inclusive economic expansion is often seen as crucial for tackling social inequalities and improving the general welfare of individuals. Inclusive growth, as defined by the World Bank, is a process that enables the involvement and contribution of all individuals in society towards the advantages of economic progress (Bianchi & de Man, 2020). This process aims to decrease poverty and foster the promotion of shared prosperity. Attaining inclusive growth necessitates not only assuring the wider distribution of economic development benefits but also tackling the structural obstacles that impede the involvement of marginalised groups in the development process (Xiang et al., 2022).

Adeleye et al. (2020) highlight that inclusive growth is associated with several positive outcomes, including improved human development metrics, strengthened social stability, and increased economic resilience. According to the International Monetary Fund (IMF), nations prioritizing inclusive growth are more likely to experience sustainable, long-term economic expansion (Barinova & Zemtsov, 2020). This stems from a more equitable distribution of development benefits across the population. Additionally, fostering inclusive growth can play a crucial role in poverty reduction by providing marginalized groups with greater access to economic opportunities and resources (Ofori & Asongu, 2021).

In West Africa, prioritizing inclusive growth is crucial due to the region's unique socio-economic challenges. The area encompasses diverse nations with varying levels of economic progress, yet it faces shared issues, such as high poverty levels (Kouadio & Gakpa, 2022), income inequality (Ekeocha, 2021), and limited

access to essential services (Tang & Adesina, 2022). Therefore, promoting inclusive growth in West Africa is essential for addressing these issues and advancing sustainable development across the region.

Furthermore, the region is confronted with a substantial obstacle in terms of income disparity, as West Africa demonstrates an increasing gap in social and economic conditions. While Nigeria, Côte d'Ivoire, and Ghana are witnessing growing economies and fast urbanisation, other nations are experiencing slower economic development in their rural areas (Udu, 2022). The disparity between the northern and southern regions is seen in nations such as Ghana, where the less developed northern districts significantly trail behind the more advanced coastal regions. The economic disparities in Nigeria are further emphasised by the sharp difference between the conflict-affected north-eastern areas and the affluent southern urban centres (Aikins & McLachlan, 2022). The measurement of wealth disparity in the region encompasses several measures, such as the Gini index. This inequality is frequently more pronounced in metropolitan areas, where the provision of essential services continues to provide a significant obstacle. Moreover, gender inequalities continue to exist across West Africa, adding to the complex character of inequality in the region (Milsom, 2023). Thus, it is essential to tackle these problems not just to achieve equitable economic growth but also to fulfil the Sustainable Development Goals (SDGs) established by the United Nations, namely SDG 1, which aims to eradicate poverty in all its manifestations (Dhahri & Omri, 2020).

Hence, in West Africa, achieving inclusive growth is especially important because of the region's long-standing and current socio-economic inequalities. The enduring effects of colonialism, together with factors such as inadequate institutions and difficulties in governance, have resulted in disparate levels of development among West African nations (Akpan-Obong et al., 2022). The consequences of these discrepancies are clearly seen in the enduring rates of poverty, restricted availability of education and healthcare, and uneven allocation of resources. Furthermore, West Africa is confronted with the added difficulty of promoting economic growth in the middle of a swiftly evolving global environment. This is because the region is susceptible to the impacts of globalisation, climate change, and technological progress, highlighting the necessity for inclusive growth plans that can adeptly traverse these intricacies (Antwi-Agyei et al., 2021).

Addressing the lack of inclusive development in West Africa—characterized by high poverty and income inequality—could be achieved through targeted financial inclusion initiatives and strengthened institutional quality. As Ozili (2020) suggests, expanding access to formal financial services empowers marginalized communities, giving them tools to manage risks, build assets, and engage more fully in economic activities. Additionally, a resilient institutional framework, marked by transparency, efficiency, and sound governance, supports an environment favourable to inclusive economic growth (Abate, 2022). Strong institutions are essential for equitable resource distribution, ensuring that the benefits of eco-

conomic advancement reach all societal segments. By fostering financial inclusion and improving institutional standards, West Africa can cultivate conditions for sustainable growth, thereby increasing economic opportunities and aligning with both national ambitions and global development goals.

This study assessed the level of financial inclusion by examining such as the automated teller machine users and number of depositors. Digital financial services examine the implementation of technology-driven financial solutions, utilising advancements such as the use of automated teller machine (ATM), mobile banking to overcome geographical limitations and improve financial accessibility (Aziz & Naima, 2021). Establishing a connection between these characteristics and equitable growth in West Africa may be crucial for effectively tackling socio-economic concerns. Liu et al. (2021) discoursed that enhanced availability of formal financial services empowers individuals by facilitating the accumulation of savings, making investments, and providing access to credit, so promoting entrepreneurship and economic engagement. Additionally, this study analyses institutional quality by considering two crucial dimensions: control of corruption and political stability. The concept of rule of law evaluates the degree to which legal systems are clear, consistently enforced, and safeguard the rights of individuals and companies (Li & Sun, 2022). On the other hand, the measure of control of corruption assesses the extent of corruption in public institutions, which directly affects the efficiency and impartiality of governance (Chen & Aklikokou, 2019).

This study is carried out to fill identified gaps in the literature regarding the role of number of ATM users, no of depositors, control of corruption, and political stability in promoting inclusive growth in West Africa. While global studies have highlighted the transformative power of digital financial technologies for financial inclusion (Lutfi et al. 2021), few have explored their unique impacts within the socio-economic landscape of West Africa, leaving a gap in understanding how these technologies contribute to inclusive growth in the region. Similarly, although extensive research links corruption to slowed economic progress (Song et al., 2021; Senu, 2020), little attention is given to how specific anti-corruption efforts support inclusive growth within this context. Political stability, too, is frequently acknowledged for its importance in economic development (Canh et al., 2020), but there remains a shortage of studies examining its direct influence on inclusive growth in West Africa. Addressing these gaps, this study provides a novel analysis of the individual and combined effects of digital financial services, anti-corruption measures, and political stability on inclusive growth across selected West African nations, thereby offering a comprehensive understanding of these interconnected dynamics in the regional context.

## 2. Literature Review

The conceptual review, theoretical review, and empirical examination of capital structure and financial performance are all included in this part.

### Conceptual Review

### ***Financial Inclusion***

Financial inclusion, in a different context, encompasses specific aspects of monetary and fiscal policy by enhancing the current instruments in the financial system to guarantee economic and social advantages (Ali et al., 2020). Hence, the concurrent implementation of monetary and fiscal policies in the context of financial inclusion might enhance the key elements of the financial system, such as stocks and bonds, thereby potentially resulting in more advantages from financial inclusion (Schuetz & Venkatesh, 2020). Thus, according to Ullah et al. (2022), financial inclusion is crucial for economic advancement as it ensures that individuals and businesses, irrespective of their circumstances, may effectively access and utilise financial services. Hence, financial inclusion extends beyond mere possession of a bank account; it involves a diverse array of services including credit, insurance, savings, and investments (Yang et al., 2022).

Additionally, financial inclusion serves as a catalyst for supporting equitable economic development by narrowing the gap between excluded populations and the dominant economy (Lutfi et al., 2021). Formal financial services, such as banking, credit, and insurance, empower individuals and businesses to actively participate in economic transactions. Anarfo et al. (2020) opined that this is particularly advantageous for individuals residing in underprivileged or remote areas. More so, enhanced accessibility not only fosters the growth of pioneering enterprises but also enables families to effectively manage their finances, accumulate assets, and allocate resources for education and healthcare (Liu et al., 2023). Therefore, it improves the overall efficiency of the economy, increases employment opportunities, and promotes fair distribution of income, thereby significantly contributing to inclusive growth (Jungo et al., 2022).

### ***Number of Automated Teller Machine Users***

The Automated Teller Machine (ATM) is a significant technological advancement in the banking industry, providing customers with direct access to their accounts for various financial transactions. Introduced in the late 1960s, ATMs revolutionized banking by enabling 24/7 access to cash and reducing dependency on human tellers. Over the decades, ATMs have evolved to offer additional functionalities, such as bill payments, account transfers, and deposits (Leal & Garcia, 2023). The first ATM was introduced by Barclays Bank in London in 1967. Early ATMs were rudimentary and could only dispense a fixed amount of cash. However, technological advancements allowed for broader functionalities, making ATMs a critical component of the modern banking infrastructure. In the late 1980s and early 1990s, networked ATMs allowed customers to withdraw cash from machines not owned by their bank, contributing to a more integrated global banking system (Global Market Insights, 2022).

Sharma (2022) has acknowledged ATMs' expansion beyond simple cash dispensing machines to provide a wide range of services, including: Cash withdrawals and deposits in which the ATMs allow users to deposit cash directly into their bank accounts, an evolution from earlier versions that only allowed for withdraw-

als. Also, it can be used for balance inquiries and mini-statements through which users can check their account balance and print mini-statements of recent transactions. Furthermore, the usefulness spread towards funds transfers by which ATMs facilitate fund transfers between accounts within the same bank or even across different banks. Moreover, it can be used for bill payments and mobile recharges in which some ATMs allow users to pay utility bills or recharge their mobile phones directly through the machine and finally, cardless transactions through innovations such as cardless transactions, where a customer can withdraw cash using a mobile app and a one-time password, are growing in popularity. ATMs have become essential for remote banking services, allowing financial institutions to extend services in areas without full-service branches.

### ***No of Depositors Per Thousand***

Depositors, according to Demirgüç-Kunt, Klapper, & Singer (2022), are key stakeholders in any banking system, providing a crucial source of funding for banks. In return, depositors receive interest on their deposits. The number of depositors in a bank, or across the banking sector, impacts the financial health of institutions and the broader economy. Banks utilize depositor funds to engage in lending activities, which can lead to profits from interest rate differentials (i.e., the spread between deposit rates and lending rates). The number of depositors influences the size of the deposit base, directly impacting a bank's lending capacity and profitability. A growing depositor base is typically seen as a positive indicator of public trust and the bank's financial health.

Recent studies highlight that depositors also play an increasingly important role in determining banking competition. Banks that attract a larger number of depositors can use their lower cost of capital to offer competitive loan rates, further strengthening their position in the market (Acharya & Mora, 2023). However, an excess concentration of depositors in one institution can create systemic risk, as seen in the context of bank runs.

Moreover, the study of depositor behavior has gained renewed interest due to its connection with financial crises (Goldstein, 2022). Bank runs occur when depositors collectively lose confidence in the institution's ability to return their funds, leading to mass withdrawals. The number of depositors and their behavior are critical in determining whether a bank will face liquidity issues during economic downturns. The classic Diamond-Dybvig (1983) model demonstrates how the collective action of depositors can result in a bank run, even if the bank is fundamentally solvent. More recent work expands on this, considering how heterogeneous depositor preferences—influenced by factors like wealth, liquidity needs, and behavioral biases—can increase or decrease the likelihood of such events (Goldstein, 2022).

Behavioral factors, such as herding behavior and information cascades, also affect depositor actions. When a small group of depositors withdraws, it can trigger a larger group to follow suit, leading to widespread panic and an increase in withdrawal rates, regardless of the bank's true financial condition (Iyer et al., 2022).

### ***Institutional Quality***

Institutions have a significant impact on the allocation of resources and the distribution of opportunities within an economy. According to [Omoke and Opuala-Charles \(2021\)](#), robust institutions that promote equitable competition, discourage illegal activities, and enforce legal standards establish an environment of equal opportunity. The fair and just environment enables individuals and businesses from various backgrounds to actively engage in economic activities, promoting a more inclusive development model ([Qamruzzaman et al., 2021](#)). Strong institutions play a crucial role in dismantling obstacles that have marginalised specific sectors of the population by ensuring that economic possibilities are not monopolised and that access to resources is dispersed equitably. Crucially, the influence of robust institutions goes beyond only economic expansion—it also encompasses social fairness and long-lasting progress. [Nouira and Saafi \(2021\)](#) argued that institutions that foster equity and inclusiveness in economic engagement play a pivotal role in advancing a society that is both equitable and sustainable. This supports the idea that inclusive institutions play a vital role in achieving sustainable economic growth and decreasing income inequality ([Khan et al., 2021](#)).

In the context of West Africa, where issues such as corruption, lack of financial knowledge, and regulatory limitations continue to exist, the need of institutions in promoting financial inclusion becomes even more crucial ([Ouedraogo & Thiombiano, 2025](#)). Therefore, it is crucial to comprehend and tackle these obstacles within the organisational structure in order to formulate specific approaches that improve financial inclusion in the region. An all-encompassing strategy that tackles deficiencies in institutions and capitalises on their advantages is crucial for establishing a financial environment that is both easily accessible and embraces diversity while remaining viable in the long run.

### ***Control of Corruption***

Corruption control is an essential element in the conceptual framework of institutional quality. It serves as a crucial indicator of the efficacy of governance institutions in preventing and addressing corrupt activities in a society ([Khan et al., 2020](#)). Control of corruption refers to the establishment of institutions, rules, and methods that aim to prevent and eliminate corruption. This creates a transparent, accountable, and ethical environment for individuals, corporations, and government bodies ([Singh & Pradhan, 2020](#)). An essential element of controlling corruption involves implementing strong anti-corruption policies and legal frameworks. This includes the passing and execution of legislation that makes corrupt acts illegal, as well as the establishment of systems to identify, examine, and bring legal action against instances of corruption ([Kunawotor et al., 2020](#)). An extensive legal framework serves as a deterrent, indicating a society's dedication to combating corruption at all levels ([Kouadio & Gakpa, 2022](#)).

### ***Political Stability***

Political stability is a crucial element in the complex structure of institutional quality. It encompasses various aspects such as the durability, peacefulness, and

ability to recover of the political environment in a society (Azam et al., 2020). Political stability refers to a state in which political institutions and processes function harmoniously, creating an environment characterised by order, predictability, and continuity (Epo & Nochi Faha, 2019). Institutional quality in this aspect is crucial for guaranteeing the efficient operation of governance systems, creating a favourable environment for economic growth, social advancement, and the overall welfare of a country.

The crux of political stability resides in upholding a stable and foreseeable political milieu. This entails mitigating sudden shifts, upheavals, and disturbances within the political system, thereby fostering a conducive atmosphere for political institutions to function without persistent turbulence (Saadaoui & Chtourou, 2022). Political stability is crucial for the consistent execution of policies, providing a basis for economic planning and development endeavours (Nguyen, 2022). Political stability goes beyond the absence of political turmoil. It refers to a favourable condition where institutions function harmoniously, facilitating efficient government and the achievement of long-term goals (Ahmad et al., 2022).

#### ***Inclusive Growth***

Inclusive growth is fundamentally focused on diminishing poverty and income inequality (Amar & Zghidi, 2016). In contrast to traditional models of economic development that may unintentionally worsen inequalities, inclusive growth focuses specifically on improving the living conditions of the most disadvantaged and vulnerable groups. This is consistent with the wider global development agenda, such as the United Nations' Sustainable Development Goals (SDGs), which seek not only economic progress but also the improvement of overall well-being for everyone (De Jong & Vijge, 2020). In addition, inclusive growth goes beyond simply resolving differences in wealth and includes a wider range of factors that contribute to overall well-being, such as access to education, healthcare, and other necessary services (Ozturk & Ullah, 2022). Spash (2020) recognises education as a crucial catalyst for inclusive economic development, as it not only improves individual skills and capacities but also contributes to broader societal advancement. Within this context, inclusive growth acknowledges the need for the advantages of progress to reach beyond economic domains, embracing social and human development indicators.

#### ***Gross Domestic Product Per Capita***

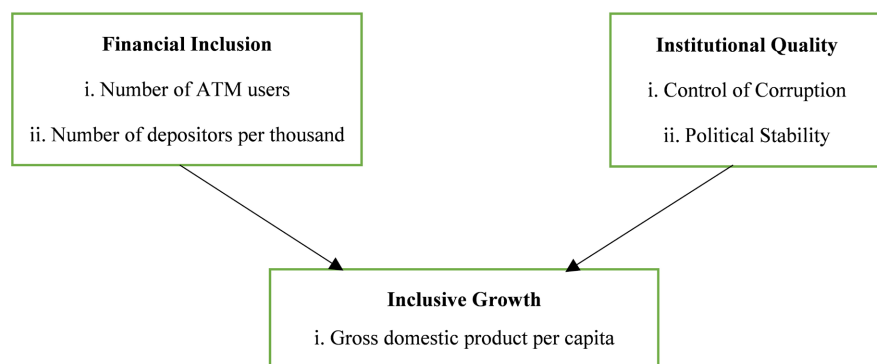
According to Clements and Chen (2023), Gross Domestic Product (GDP) per capita is a critical metric used in macroeconomic analysis to assess the economic well-being of a population. It represents the average economic output per person and is commonly used to compare the economic performance of different countries or regions. GDP per capita is often viewed as a proxy for the standard of living, though it does not account for income distribution or non-market transactions. Easterlin (2022) explores the concept of GDP per capita, its calculation, limitations, and its role in economic analysis acknowledged that GDP per capita is calculated by dividing the Gross Domestic Product (GDP) of a country by its

total population.

The formula is as follows:

$$\text{GDP per capita} = \frac{\text{GDP}}{\text{Population}}$$

Here, GDP represents the total market value of all final goods and services produced within a country in a given period, typically measured annually. GDP can be calculated using three main approaches namely production approach which measures the total output produced; the expenditure approach which measures the total expenditure on goods and services; and the income approach that measures the total income earned from production. By adjusting GDP by the population size, GDP per capita provides a clearer picture of how much each individual contributes to or benefits from the economy's output (Figure 1).



**Figure 1.** Conceptual Framework—Showing the link between financial inclusion, institutional quality and inclusive growth. Source: Author's Framework (2024).

### Theoretical Review

The theoretical review explores the connections between financial inclusion, institutional quality, and inclusive growth, drawing on several economic theories such as endogenous growth and institutional economics. The finance-led growth hypothesis (Goldsmith, 1969; Shaw, 1973) emphasizes the financial sector's role in mobilizing savings, improving resource allocation, and driving growth as economies expand (Alhassan et al., 2021). Modern growth theory (Grossman & Helpman, 1994) further highlights the financial sector's role in long-term growth through capital accumulation and technological progress, asserting that financial inclusion and strong institutions support inclusive growth (Jungo et al., 2022). Environmental governance theory connects good governance with sustainable economic development (Ansell & Torfing, 2021), while institutional theory (Meyer & Rowan, 1977) explains how formal and informal norms within institutions promote social cohesion and order. Together, these theories provide a framework to understand the role of financial and institutional factors in advancing inclusive growth (Stiglitz et al., 2023).

### Theoretical Framework

This study's theoretical framework combines modern growth theory and envi-

ronmental governance theory to explore the interplay between financial inclusion, institutional quality, and inclusive growth. Modern growth theory, attributed to [Romer \(1986\)](#), [Lucas \(1988\)](#), and [Grossman and Helpman \(1994\)](#), highlights how endogenous technological innovation and capital investment fuel sustained economic growth. This perspective emphasizes that policies promoting research, human capital, and innovation are critical for long-term economic development ([De Jong & Vijge, 2020](#)), framing financial inclusion and institutional quality as central drivers of inclusive growth through productivity and technological progress ([Mohammed et al. 2023](#)). Environmental governance theory complements this by emphasizing the role of strong governance in achieving sustainable economic growth, asserting that effective governance is vital for balancing economic development with environmental preservation ([Ansell & Torfing, 2021](#)). By suggesting that active governance supports green growth, this theory highlights the importance of integrating environmental sustainability within inclusive growth frameworks. Together, these theories offer a robust framework, addressing both economic and environmental factors in fostering inclusive growth in West African economies.

#### **Empirical Review**

This section of the report is used to do an empirical review for the study. The following studies were reviewed by the study. [Olanrewaju et al. \(2019\)](#) examine the causal connections between the institutional, financial, and inclusive growth variables by using the Toda-Yamamoto (TY) Granger non-causality test inside the augmented VAR framework. The investigation used a yearly time series dataset covering the period from 1998 to 2017. The TY analysis showed that all variables, save for the financial inclusion index, demonstrated Granger-causality towards inclusive growth, without any evidence of reciprocal effect. A reciprocal causal relationship was found between inclusive finance and the interaction between institutional quality and financial inclusion. Thus, by using real GDP per person employed (RGDPE) as the dependent variable, it becomes feasible to refute the null hypothesis of block exogeneity. This implies that while the influence of institutional quality may vary greatly throughout an economy, it seems that institutional quality is the main driver of inclusive development.

[Hassan et al. \(2022\)](#) investigate the impact of financial inclusion on economic growth by analysing a sample of 23 countries from 2006 to 2017. The study evaluates the influence of financial inclusion and institutional quality by using static and dynamic panel models. A financial inclusion composite indicator is constructed via the use of principal component analysis (PCA). The study's results suggest a positive association between financial inclusion and economic progress. The study provides a basis for policymakers to concentrate their efforts on reformative actions in the financial industry, with the goal of promoting financial inclusion and adopting steps to regulate and improve institutional integrity, thereby ensuring sustainable economic growth.

[Yinusa et al. \(2020\)](#) examine the correlation between financial development,

and inclusive growth in Nigeria spanning the years 1984 to 2017. The study used an asymmetric co-integration methodology to investigate the persistent relationship between institutional quality, financial development, and inclusive growth in Nigeria. The study's results suggest a long-lasting relationship between the quality of institutions, the development of finance, and inclusive growth in Nigeria. The research demonstrated that the attainment of balance between institutional quality, financial development, and inclusive growth in Nigeria was shown to be asymmetrical. Therefore, the study argues that the calibre of institutions and the extent of financial development are crucial factors in determining inclusive growth in Nigeria.

In their study, [Dahiya and Kumar \(2020\)](#) investigated the relationship between financial inclusion and economic growth. The current investigation examines three primary aspects of financial inclusion: utilization, reach, and availability. The objective is to examine the correlation between financial inclusion and economic growth in India. From 2005 to 2017, this study used a Bayesian vector autoregression model to investigate the connection between economic growth and financial inclusion, as well as its many aspects such as accessibility, penetration, and usage. The results indicate a significant correlation between the economic expansion and the extent to which financial inclusion is utilized in India. Regarding the financial inclusion index, it has a limited impact on economic growth.

In addition, [Yinusa et al. \(2020\)](#) conducted a study examining the relationship between institutional quality, financial development, and inclusive growth. The study investigated the relationship between the quality of institutions, the development of the financial sector, and the promotion of inclusive economic growth in Nigeria from 1984 to 2017. The study utilized an asymmetric cointegration approach to examine the enduring connection between institutional quality, financial development, and inclusive growth in Nigeria. The study's findings indicate a sustained correlation between institutional quality, financial development, and inclusive growth in Nigeria. The study revealed that the process of achieving equilibrium for institutional quality, financial development, and inclusive growth in Nigeria was shown to be asymmetric.

[Abubakar \(2020\)](#) conducted a study examining the relationship between institutional quality and economic growth in Nigeria. This study examined the impact of institutional quality on economic growth in Nigeria by analyzing the relationship between contract-intensive money and the effective governance index. The analysis was conducted using annual time series data from 1979 to 2018. This study relies on the Solow-Swan neoclassical growth model and the Washington Consensus to gain understanding of the importance of institutional quality in policy-making. In order to accomplish this, the study utilizes both the Johansen Cointegration and Ordinary Least Square (OLS) methodology. The calculated cointegration test indicates a shared link among the variables. The OLS model demonstrates a positive and statistically significant relationship between economic growth and institutional quality, specifically contract-intensive money.

However, the effective governance index has a beneficial influence on the economy, but it is not statistically significant. The empirical findings demonstrate that economic growth exhibits a positive or negative response to the impact of domestic investment and foreign direct investment, albeit with statistical significance.

### 3. Methodology

This study adopts an ex-post facto research design, framed within a positivist approach that emphasizes quantitative data collection and analysis, aiming for high reliability and objectivity (Goodman-Scott et al., 2021). Secondary data was sourced from the World Governance Indicators (WGI) and the Central Banks of selected West African nations to explore the influence of financial inclusion and institutional quality on inclusive growth. The quasi-experimental ex-post facto method relies on historical observations and naturally occurring group distinctions without direct intervention, allowing for analysis rooted in past events (Pattnaik et al., 2023). Independent variables include the Number of ATM users, Number of Depositors, Control of corruption and Political stability, while Gross Domestic Product Per Capita (GDPPC) serves as the dependent variable. The study covers a sample of 10 West African countries selected using a purposive sampling technique due to the availability of data. A 10-year dataset from 2013 to 2023 provides time-series data on financial inclusion, institutional quality, and GDPPC, with data reliability supported by sources like WGI and national Central Banks. This design ensures that the data from these credible institutions offers robust and unbiased insights into the interaction of financial inclusion and institutional quality on inclusive growth in West Africa.

#### Model Specification

Following the strategy of Olanrewaju et al. (2019), this study will investigate the factors explaining inclusive growth by setting up a model where inclusive growth is dependent on a countries' financial inclusion and institutional quality variables. Therefore, the model proposed for the realization of the goals of the study is as follows:

$$GDPPC = f(\text{NOATMS}, \text{NODEP}, \text{COTCOR}, \text{POLSTA}) \quad (1)$$

The equation above is decomposed below into econometric form as:

$$GDPPC_{i,t} = \beta_0 + \beta_1 \text{NOATMS}_{i,t} + \beta_2 \text{NODEP}_{i,t} + \beta_3 \text{COTCOR}_{i,t} + \beta_4 \text{POLSTAS}_{i,t} + \varepsilon_{i,t} \quad (2)$$

where:

- GDPPC = Gross Domestic Product Per Capita;
- NOATMS = Number of ATM Users;
- NODEP = Number of Depositors per thousand;
- COTCOR = Control of Corruption;
- POLSTAS = Political Stability;
- $\beta_1 - \beta_4$  = Beta Coefficient;
- $\beta_0$  = Constant;

$\varepsilon$  = Error Term.

The secondary data collected for the study was examined quantitatively through descriptive and inferential statistics. Descriptive statistics describe the characteristics of the data that has been collected and examined. Maximum, minimum, mean and standard deviation will be employed as descriptive statistics. At a 5% significance level, panel multiple regression (Pooled, FEM, REM) techniques was applied to assess the hypotheses.

### Scope of the Study

The study investigated the determinants of inclusive growth in selected West African countries West The target population included all 18 countries in the region, with a sample of 10 countries which was selected using purposive sampling technique. The research covered the period from 2013 to 2023.

### Results

#### Descriptive Statistics Results for the Model

In order to avoid the wrong use of financial econometric tools, the descriptive properties of the data was determined before determining the best statistical tool to use for the analysis. **Table 1** presents the descriptive statistics of the data for the model.

**Table 1.** Descriptive statistics results test for the model.

CHARACTERISTICS	GDPPC	NOATMS	NODEP	COTCOR	POLSTA
Mean	1281.	7.4410	368.55	-0.5009	-0.5578
Std. Dev.	675.1	3.7679	299.9	0.3416	0.6367
Skewness	0.575	1.2590	2.1211	-0.1804	-0.9947
Kurtosis	1.898	3.8777	6.688	1.9241	2.8509
Jarque-Bera	9.410	26.370	117.2	4.7748	14.759
Probability	0.009	0.0000	0.000	0.0918	0.0006
Observations	100	100	100	100	100

Source: Author's Computation (2024).

The summary of the statistics used in this empirical study is as presented in the **Table 1**. It can be observed that gross domestic product per capita has the highest mean value of 1281.7 while the control of corruption has the lowest mean value of -0.5009 whereas, the number of ATM users, control of corruption and political stability all have mean values of 7.441, -0.5009 and -0.5578 respectively. The standard deviation measures how concentrated the data are around the mean, hence it can be observed from the study presented in **Table 1** that gross domestic product per capita has the highest mean value of 675.1, while control of corruption has the lowest standard deviation value of 0.3416, whereas the number of ATM users and political stability standard deviation values of 3.7679 and 0.6367 respectively. This suggests that the values of the operational data generally deviate further from the mean. Skewness, which measures distribution asymmetry, showed

that all variables, except political stability, were positively skewed, indicating that their distributions are right-skewed, with the mass of data concentrated on the right. This skewness implies that the mean value is typically higher than the median for these variables. Regarding kurtosis, all variables demonstrated positive values, indicating that the distributions are leptokurtic, or unusually tall.

**Table 2.** Augmented dickey fuller unit root test.

VARIABLES	LEVEL		FIRST DIFFERENCE		ORDER OF INTEGRATION
	Levin, Lin & Chu t*	Im, Pesaran and Shin W-stat tests	Levin, Lin & Chu t*	Im, Pesaran and Shin W-stat tests	
GDPPC	-1.344	1.180	-11.05**	-4.77**	1(1)
NOATMS	-8.74**	-2.84**	-13.4**	-6.29**	1(0)
NODEP	-111.2**	-81.1**	-12.64**	1233.9**	1(0)
CONCOR	-5.34**	-0.63**	-1.27**	-0.51**	1(0)
POLSTA	-5.22.**	-1.70**	-3.72**	-0.94**	1(0)

Source: Author's Computation, (2024).

The result from **Table 2** above showed that at a 5% level of significance, the unit root tests reveal that number of ATM users, Number of depositors, Control of corruption and Political stability were all stationary at level, integrated of order one or I(0) while only Gross domestic product per capita was stationary at first difference, integrated of order one or I(1).

**Table 3.** Results of static panel regression analysis for GDPPC model.

Variables	Pooled OLS			Fixed Effects Model			Random Effects Model		
	Coef.	Std. Error	P-Value	Coef.	Std. Error	P-Value	Coef.	Std. Error	P-Value
C	4.230	4.408	0.007	7.623	1.666	0.000	0.8138	1.6667	0.0008
NOATMS	0.492	3.503	0.000	0.798	3.315	0.000	0.9915	3.2950	0.0001
NODEP	0.249	0.511	0.000	0.580	0.329	0.005	0.7869	0.8990	0.0000
COTCOR	0.722	3.618	0.002	0.363	1.969	0.000	0.8639	1.6836	0.0003
POLSTA	0.842	1.994	0.000	0.776	0.408	0.000	0.098	0.4967	0.0001
R-Square	0.521643			0.970417			0.795441		
Adj R-Square	0.486641			0.959949			0.778548		
Prob (F-Stat)	0.00000			0.00000			0.000000		
Durbin Watson	2.134894			1.989528			1.921151		

Source: Author's Computation (2024).

Judging from the results of the panel regression above, it can be observed that the results of the pooled regression, fixed effect model as well as the random effect model are identical. In the sense that the coefficients of the financial inclusion and

institutional quality namely: number of ATM users (NOATMS), number of depositors (NODEP), control of corruption (COTCOR), and political stability (POLSTA) were all positively and significantly related to inclusive growth of the selected West African countries proxied by gross domestic product per capita (GDPPC) (Table 3).

**Table 4.** Hausman's specification tests on panel model result.

Correlated Random Effects - Hausman Test			
Test cross-section and period random effects			
Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	0.805623	3	0.8481
Period random	0.195247	3	0.9784
Cross-section and period random	0.186341	3	0.9798

\*\*WARNING: estimated period random effects variance is zero. Source: Author's Computation, (2024). \*, \*\*, \*\*\* indicate significant at 10%, 5%, 1% levels, respectively.

Gujarati and Porter (2009) note that when the  $P$ -value is significant at the 5% level, the fixed effects model is generally more suitable for valid inferences. However, based on the Hausman test results presented above, the Chi-Square statistic and the  $P$ -value for the cross-section random effect are 0.8056 and 0.8481, respectively. Since the  $P$ -value exceeds the 5% threshold, this supports the use of the random effects model for interpreting the regression results (Table 4).

#### 4. Discussion of Findings

Firstly, the finding of this study reveals that the number of ATM users was positively and significantly impacted on gross domestic product per capita in selected West African countries. This result indicates a direct relationship with the inclusive growth proxied by gross domestic product per capita. Meaning that the ATMs play a critical role in enhancing access to these financial services by providing a means for individuals to perform banking transactions without needing physical bank branches. This increased access to financial services facilitates smoother business operations, improves personal financial management, and leads to more robust economic activity. The finding of this study agrees with the finding of (Demirgüç-Kunt, Klapper, & Singer, 2022; Shen et al., 2021).

The finding of the study reveals that the number of depositors was positively and significantly related to inclusive growth. This result indicates a direct relationship meaning that since financial institutions mobilize savings through deposits, which in turn provide loans for investment, consumption and entrepreneurial activities. These investments can improve productivity, employment and innovation, thereby contributing to inclusive growth and by extension GDP per capita.

Additionally, the finding of this study reveals that control of corruption was

positively and significantly impacted on inclusive growth in selected West African countries proxied by gross domestic product per capita which indicates a direct relationship. Meaning that the efficiency of the control of corruption helps ensure that public resources are utilized efficiently, thereby enhancing GDP per capita. The finding of this study agrees with the finding of this study agrees with the findings of (Gründler & Potrafke, 2019; Spyromitros & Panagiotidis, 2022; Küçükçolak et al., 2025).

Finally, the finding of this study reveals that political stability was positively and significantly related to inclusive growth proxied by gross domestic product per capita which indicates a direct relationship with the inclusive growth of the selected West African countries. Meaning that the political stability is often associated with a predictable and secure environment for businesses and investors, leading to increased economic activity and growth. The finding of this study agrees with the finding of (Terpase & Kpelai, 2024; Assfaw et al., 2025).

## 5. Conclusions and Recommendations

In conclusion, this study demonstrates that financial inclusion, through increased ATM usage and number of depositors alongside effective control of corruption and political stability, positively and significantly contributes to inclusive growth in West Africa, as measured by GDP per capita. The positive impact of ATM access reflects how enhanced financial accessibility supports economic activities by facilitating banking transactions beyond traditional branch networks, leading to broader economic engagement. Similarly, robust anti-corruption measures ensure efficient public resource utilization, bolstering GDP per capita. Political stability further fosters a secure environment conducive to business and investment growth, reinforcing economic resilience. These findings align with previous studies (e.g., Demirgüç-Kunt, Klapper, & Singer, 2022; Terpase & Kpelai, 2024; Spyromitros & Panagiotidis, 2022) and highlight the importance of these factors in promoting sustainable and equitable inclusive growth across West Africa.

Based on the findings of the study, it is recommended that policy makers enhance the financial infrastructure in such a way that ATMs will be deployed in underserved and rural areas to provide access to banking services for populations that might not have easy access to traditional banks. Additionally, it is important to reduce corruption levels in order to experience higher GDP growth rates. This is because as economies grow, they can provide more jobs and opportunities for all citizens, leading to more inclusive growth. More so, the Central Bank management should ensure a stable political platform in order to provide the necessary foundation for sound economic policies, effective governance, and social cohesion, all of which are crucial for achieving inclusive growth. Finally, for future studies, efforts should be made to increase scope of work and time frame. Other variables that can be used to proxy financial inclusion and institutional quality should be adopted. The need to extend this type of study to other comprehensive African countries is also suggested. Also, further methodologies such general

method of moments (GMM) technique as well as Autoregressive distributed lags can be incorporated.

## Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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