INSTITUTIONAL QUALITY AND FINANCIAL INCLUSION IN SUB-SAHARAN AFRICA

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ABSTRACT

The study examined the effect of institutional quality on access to financial products and services in sub-Saharan Africa. In particular, it understudied the effect of political stability and no violence and regulatory quality on banking penetration in sub-Saharan Africa. Panel data spanning 2006 to 2021 was collated from 12 sub-Saharan African countries. The Durbin-Wu-Hausman specification test indicated that the Random-Effect panel model gave more appropriate and efficient outcome than the Fixed-Effect model. The results portend that regulatory quality exerts a significant effect on access to financial products and services in sub-Saharan Africa. The results also suggested that there is a positive relationship between regulatory quality and the number bank branches in the sub-region. Further findings reported that political stability and no violence exerts an adverse and statistically significant effect on access to financial products and services in sub-Saharan Africa. The policy recommendation is that, regulators need to carry out regulatory impact assessment to assuage adverse regulations and enhance the regulatory environment in the subcontinent. This should further be complemented with a functional judicial system, accountability, and concerted systemic fight against corruption. These may encourage political, economic, and social stability and create a stable and conducive climate for private sector growth and financial inclusion.

Keywords: banking penetration, financial services, institutional quality, regulatory quality, political stability

Introduction

Banking penetration and account usage in Africa, particularly sub-Saharan Africa has been chronic. World Bank (2019) indicates that the penetrative reach of bank branches was about 1 and 2 per 1,000 people (aged 15 and above) in 2006 and 2007 respectively. In the following 3 years, the figure increased to 3 per 1,000 adults. From 2011 to 2014, bank branch spread increased to about 4 per 1,000 adults. In 2018, the spread of bank branches increased to 5 per 1,000 adults. Also, records for geographical penetration of banking services showed that there is 1 bank branch per $1,000m^2$ in sub-Saharan Africa (Ajide, 2017). Physical banking presence like in Nigeria, and other developing African countries are concentrated in urban city centres. Given the geographic and demographic spread of bank branches, it is safe to say that the 656 million rural households in SSA have limited access to banking services.

Furthermore, records indicate that between the period spanning 2011 to 2014 there was only a paltry 25% increase in loan accounts compared to approximately 42% increase in the ownership of deposit accounts in SSA (European Investment Bank, 2017). Again, recent data from World Bank, 2019, indicates that there has been a decline in the percentage of private-sector loan accounts to GDP in sub-Saharan Africa. Records indicated that in 2006 loan account ownership stood at 59.8% of GDP. It picked at 60% of GDP in 2007 and declined to about 46% in 2018. This implies that there has been a 23% decline in the use of loan accounts in SSA. However, it is imperative to note that this decline may be as a result of varying degrees of financial inclusion in the 46 countries that make up the SSA.

The absence of a proper inclusive financial system that is devoid of depth and breadth has cultivated a culture of direct or self-financing in Africa. Evidently, this has caused households, small and micro enterprises, that are financially excluded, to forcefully rely on informal networks, personal savings and retained earnings to pursue their various investments and business endeavours (Gebrehiwot & Makina, 2019), thus leading to economic retardation. In addition, this exposes households and firms to unnecessary unsystematic risks and shocks associated with obtaining funds from the informal system (Katoroogo, 2016; Allen et al., 2016). This is a classic case in developing countries, and this impedes their growth efforts.

Financial exclusion typically denotes inability to access affordable banking and other non-bank financial products and services by the poor and vulnerable groups (Wentzel et al., 2016). It obstructs fixed capital formation, access to loanable funds and gross capital investment (Kama & Adigun, 2013; Efobi et al., 2014; Allen et al., 2016; World

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Bank, 2017). Lack of access to bank networks, bank runs, lack of formal education, financial illiteracy, low per capita income, excessive bank charges, and more are constraints to penetrative reach and usage of services and products offered by financial institutions (Triki & Faye, 2013; Odili, 2020).

The specific objectives of the study are;

1. Examine the effect of regulatory quality on access to financial products and services in SSA.
2. Examine the effect of political stability and no violence on access to financial products and services in SSA.

New Institutional Economic (NIE) Theory

This study was anchored New Institutional Economics theory. The theory can be traced to the works of Williamson in 1975. Although the theory was originally advocated by Coase in 1937 and 1960 in his scholarly expositions about "The Nature of the Firm" and "The Problem of Social Cost" (Kherallah & Kirsten, 2002). The New Institutional Economic (NIE) theory is a multi-dimensional theory used in explaining the role institutions play in the 'social, political and commercial' interactions of economic units (Klein, 1999). The theory holds that institutions are essential, and that they matter in determining economic relationships and behaviours.

The theory of NIE focuses on understanding institutions and the interactions of economic actors with organizational arrangements. Institutions are defined as "the written and unwritten rules, norms and constraints that humans devise to reduce uncertainty and control their environment" (Menard & Shirley, 2005: 1). The organizational arrangements earlier referred to are the legislations, reforms, rules, regulations and guidelines enacted or established and further implemented by government agencies to aid economic activity (Menard & Shirley, 2005). The theory, therefore, posits that institutions breed predictability of behaviour, contract rights, and consumer protection in a system (North, 2005). Further implying that, institutions ensure stability, minimize violence (due to consequences), enhance investment, capital formation and economic growth (Yongjian et al., 2005). This goes to say that quality regulatory institutions are necessities for market and economic participants. They create order by limiting lack of predictiveness and render protection to households, businesses, and domestic and foreign investors in every economic exchange.

The theory adduced that perfect information situations are almost non-existent in social interactions and economic and financial dealings between economic agents (North, 2005). Thus, the theory avers that information asymmetry creates uncertainty and lack of predictability, and thus, to assuage this, households and businesses incur transaction costs. The theory posits that institutions are created by economic agents to serve as a constraint to human interactions, reduce the risk of uncertainty, and reduce cost and non-cost related factors in transactions. Thus, the New Institutional Economic theory discredited the assumptions of perfect information, individual rationality, and no transaction cost adduced by the "Old Institutional Economics". The theory further posits that quality regulatory institutional framework breed systems were cost of transactions is lessened (or minimized).

Strong and quality institutions help ensure an atmosphere of certainty and order that is conducive for business investments, most especially as it relates to investments in banking infrastructure and the banker-customer relationships in terms of subsisting contracts in the buying and selling of deposits and loans accounts. This breeds confidence, stability and order in the economic system.

Methodology

The ex-post facto research design and quantitative methods were employed to ensure that conditions prior to the conduct of this study can properly be understood and explained using econometric techniques. The study collated panel data spanning 2006 to 2021 from 12 sub-Sahara African countries from World Development Indicators (WDI) and Worldwide Governance Indicators (WGI).

The descriptive statistics and panel unit root tests preceded the estimation of the panel regression analyses. In addition, the redundant Fixed Effect test and Hausman test for endogeneity, also known as the Durbin-Wu-Hausman specification test was employed to determine the most preferable model between pooled OLS and the Fixed Effects, and the Fixed Effects (FE) and the Random Effects (RE) panel regression techniques respectively.

The econometric model is expressed as;

$$lnBBN_{it} = a_0 + a_1 lnRQU_{it} + a_2 lnPSTA_{it} + a_3 lnPOPC_{it} + a_4 lnGDPC_{it} + u_{it}$$

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A priori expectations: a_1 & $a_2 > 0$

Description of a priori expectations;
Regulatory Quality (RQU):   Improvement or increase in regulatory quality is expected to exert a positive consequence on access to and usage of financial service.
Political Stability and No violence (PSTA): Politically stable and violence free society is expected to breed policy consistency. Thus, the coefficient of this variable is expected to exert a positive effect on access to and usage of financial services.
Potential customers (population) (POPC) and GDP per capita (GDPC): These are control variables. All this being equal, banking penetrative reach could also be influenced by the potential customer base and the per capita income of the people, hence its inclusion as a control variable in the model.

Econometric results

Table 4.1: Summary Descriptive Statistics

Variable	Mean	Median	J-B Stat.	Min	Max
BBN	5.89	4.53	67.17***	0.48	22.04
RQU	-0.44	-0.44	31.56***	-2.16	0.61
PSTA	-0.30	-0.13	7.06**	-2.21	1.20
POPC	84.83	37.94	224.37***	2.39	498.66
GDPC	2.35	2.27	31.78***	-9.44	11.32

Source: Author's computation
*** $p < 0.01$; ** $p < 0.05$; * $p < 0.1$*

Table 4.1 shows that the average values for the variables are positive except for the RQU and PSTA. The minimum value of BBN shows that some of the commercial banks in the SSA countries are having few branches compared to the average value. Both the mean and median value of GDPC is almost the same; however, the minimum value shows that one of the SSA countries experienced negative growth in a particular year. The mean value of the RQU reveals that regulatory quality in the region is very low and the mean value of the PSTA also reveals that the degree of political instability is very high in sub-Saharan Africa.

The classical regression model is based on the assumption of residual normality. However, the result of the Jarque-Bera statistics test which is used in testing for the normality of variables shows that only DIR is normally distributed as the test is not significant at any conventional levels. This study anyway proceeds to the estimation of the regression models following the asymptotic law of large number. The theory simply states that the estimator will converge to the population (true) value if the sample size is large. Since we have 180 observations altogether, this justifies that the results of the regressions are asymptotically credible.

Table 4.2: Panel Unit Root Results

Variables	Levin, Lin & Chu (LLC)	Im, Pesaran and Shin (IPS)	Order of Integration	Remark
NBB	-8.17428***	-5.87121***	1(I)	Stationary at 1st difference
RQU	-4.02592***	-3.30836***	1(I)	Stationary at 1st difference
PSTA	-2.52321***	-1.84967***	1(I)	Stationary at 1st difference
GDPC	-19.6417***	-12.8333***	1(I)	Stationary at 1st difference
POPC	-15.9015***		1(I)	Stationary at 1st difference

Source: Author's computation
Note: *** denotes that the coefficients are significant at 5%. The levels of significance are reported based on the probability values.

Table 4.2 reports the results of the panel unit root tests using the Levin, Lin & Chu (2002) and Im, Pesaran, and Shin (1997). The above implies that the selected regressand and regressors are integrated at order 1(I). The results indicate that both the LLC and IPS techniques reported the same orders of integration for all the selected variables.

Table 4.3: Regression Results of Number of Bank Branch Networks (BBN)

Variables	Dependent Variable: BBN		
	Pooled-OLS Estimates	Fixed-Effect Estimates	Random-Effect Estimate
RQU	0.218***	0.340***	0.491***
	(0.071)	(0.094)	(0.082)
	{3.066}	{3.603}	{6.009}
PSTA	-0.211***	-0.114***	-0.230***
	(0.050)	(0.042)	(0.038)
	{-4.231}	{-2.721}	{-6.083}
POPC	0.002	1.711***	0.152**
	(0.025)	(0.155)	(0.059)
	{0.075}	{11.072}	{2.583}
GDPC	0.020*	0.009	0.002
	(0.011)	(0.005)	(0.004)
	{1.731}	{2.022}	{0.505}
Adj-R^2	0.79	0.97	0.44
F-Stat	119***	344***	25***
CI-test	-	87.05***	-
Hausman	-	-	151.85***

Source: Author's computation
*** $p < 0.01$; ** $p < 0.05$; * $p < 0.1$, () standard error, {}t-statistics

Table 4.3 above shows the pooled-OLS, fixed-effect, and the random-effect estimates for the first model with the BBN as the dependent variable. It should be noted that the CI-test is the common intercept test or the redundant fixed effect test which tests for the reliability between the Fixed-Effect estimates and pooled-OLS estimate, while the Hausman test tests the reliability between the random-effect estimate and the fixed-effect estimate.

For the CI-test, a low p-value counts against the null hypothesis that the Pooled-OLS model is adequate, in favour of the fixed effects alternative. In other word, a very low probability value favours the Fixed-Effect estimate over the pooled-OLS estimate. Also, for the Hausman test, a low p-value count against the null hypothesis that the Random-Effects model is consistent, in favour of the Fixed-Effects model. In other word, a very low probability value favours the Random-Effect estimate over the fixed-effect estimate.

In the Pooled-OLS result, all the parameters except for the POPC are statistically significant at the conventional level. It can be seen from the result that a unit rise in the income per capita (GDPC) results in about a 2% units increase in the average number of commercial bank branch networks (BBN). The result likewise shows that a unit rise in the regulatory quality (RQU) results in about a 21.8% units increase in the average number of commercial bank branch networks (BBN). However, a unit rise in the PSTA resulted in about a 21.1% units decrease in the average number of commercial bank branch networks (BBN). The coefficient of determination (R^2) shows that about 80% of the variation in BBN is explained by the regressors. The F-stat (119) is shown to be statistically significant and this implies that all the regressors' parameters are jointly significant and different from zero.

In the Fixed-Effect result, only the parameters for RQU, PSTA and POPC are statistically significant. The result shows that a unit rise in the regulatory quality (RQU) results in about a 34% unit increase in the average number of commercial bank branch networks (BBN). However, a unit rise in the PSTA will result in about 11.4% decrease in the average number of commercial bank branch networks (BBN). The results also show that if POPC rises by one percent, the average number of commercial bank branch networks (BBN) goes up by about 1.711%. The findings also indicate that GDPC is positive and statistically insignificant. The coefficient of determination (R^2) shows that about 97% of the variation in BBN is explained by the regressors. The F-stat (344) is shown to be statistically significant and this implies that all the regressors' parameters are jointly significant and different from zero.

In the random-effect results, the parameter for GDPC and PSTA is statistically insignificant at the conventional levels. The result likewise shows that a unit rise in the regulatory quality (RQU) results in about a 49.1% increase in the average number of commercial bank branch networks (BBN). The result as well shows that if POPC rises by one percent, the average number of commercial bank branch networks (BBN) goes up by about 0.152%. The coefficient of determination (R^2) shows that about 46% of the variation in BBN is explained by the regressors. The F-stat (25) is shown to be statistically significant and this implies that all the regressors' parameters are jointly significant and different from zero.

Looking at the two effect models, the CI-test is statistically significant as well as the Hausman test under the random-effect model results. By implication, the statistical significance of the CI-test implies that the Fixed-Effect model is more appropriate than the Pooled-OLS model, and the statistical significance of the Hausman test implies that the Random-Effect model gives a clearer and more efficient outcome than the Fixed-Effect model.

Discussion of findings
The estimated results suggest that regulatory quality and political stability and no violence has a significant effect on the number of commercial bank branches in sub-Saharan Africa. Aside political stability and no violence, regulatory quality met the a priori expectations. The results are specifically discussed in the following section.

Regulatory quality and the number of bank branch networks:

Regulatory quality is an indicator of the institutional framework in the study locale. The result indicates that regulatory quality bears a significant effect on the number of bank branches in sub-Saharan Africa. The results also suggested that the relationship between regulatory quality and the number bank branches is positive. This implies that a proper and robust regulatory framework has the capacity to cultivate increase in bank branches in SSA.

Following this, it can be argued that regulatory quality matters and ensures a conducive financial system that imbibes stability, soundness of financial interactions and relationships among stakeholders. Thus, the positive significant relationship found in this study can be adduced to mean that quality regulation aids access and the penetrative reach of financial instruments and services in sub-Saharan Africa. What this means is that a robust and strong regulatory environment with adequate legislations and implementation of set standards in the financial system significantly aids increase in the number of investments in bank branch networks.

In a study of how institutional factors determine the level of financial inclusion, Ajide (2017) reported that regulatory quality is a significant determinant of financial access in SSA. Similarly, Hannan and Hanweck (2007) stated that regulations allowing for the spread of physical branches exert a positive effect on the number of bank branch networks. Thus, this gives empirical credence to our results. The results are also re-echoes by the New Institutional Economic (NIE) theory which holds that regulatory institutions promote stability, enhance investment, capital formation and economic growth.

Political stability and the number of bank branch networks:

Political stability and no violence is an indicator of the governance and institutional framework in SSA. It was used to ascertain how the perception of possible instability affects bank branch spread in the region.

The regression outputs reported that political stability and no violence exerts an adverse and statistically significant effect on the number of commercial bank branches in the region. This implies that the connection between the variables is negative and that every increase in the level of political instability and presence of violence causes disruption of banking operations and the spread of bank branches in SSA region. This is in line with the findings of (Ajide, 2017) who reported a negative nexus between the explanatory variable and the expansion of bank branches in the region. However, the findings of significance reported in this study is consistent with the findings of statistical significance reported between political stability and bank branch spread in SSA (Ajide, 2017).

Further observation shows that the result did not meet the positive a priori expectation. This implies that the political climate in the region has been unstable and affected by other forms of disruptions. These disruptions breeds divestment and impede banking operations (Abu et al., 2015; Kurecic & Kokotovic, 2017). Thus, the findings of significant negative relationship indicate that the system was riddled with the risk of uncertainty and instability. This is contrary to the New Institutional Economic (NIE) theory, which posits that institutions promote stability, minimize violence, enhance investment, capital formation, and growth (Yongjian et al., 2005).

However, the adverse relationship reported in our findings may be attributed to the presence of political instability and violence (Olanrewaju et al., 2019) due to electoral fraud, militancy, terrorism, religious crises and the likes of it (Compaoré et al., 2020). Another reason for the negative relationship may be as a result of macroeconomic shocks and uncertainty caused by change in government. These reoccurring incidences affect the dynamics in the market place, and this gives sufficient reason to economic players to be circumspect at all times (Ali, 2001).

Consequently, the study contends that an unstable political climate ravaged with social disruptions and violence does not augur well for the macro economy, and thus, exerts a decreasing or negative effect on the spread of bank branch infrastructure (or demographic penetration) in sub-Saharan Africa.

Conclusion and recommendations

The study examined the effect of institutional quality on access to financial products and services in sub-Saharan Africa. In particular, it understudied the effect of political stability and no violence and regulatory quality on banking penetration in sub-Saharan Africa. The Durbin-Wu-Hausman specification test indicated that the Random-Effect panel model gave more appropriate and efficient outcome than the Fixed-Effect model. The results indicate that regulatory quality bears a significant effect on access to financial products and services in sub-Saharan Africa. The results also suggested that there is a positive relationship between regulatory quality and the number bank branches in the sub-region. Further findings reported that political stability and no violence exerts an adverse and statistically significant effect on access to financial products and services in sub-Saharan Africa. The policy recommendation is that, regulators need to carry out regulatory impact assessment to determine the impact of new regulatory guidelines on the people and the economy. This would help assuage adverse regulations and enhance the regulatory environment in the subcontinent. This should further be complemented with a function al judicial system, accountability, and concerted systemic fight against corruption. These may encourage political, economic, and social stability and create a stable and conducive climate for private sector growth and financial inclusion.

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