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DIGITALIZATION AND ACCESS TO FINANCE IN SUB-SAHARAN AFRICA: THE ROLE OF REGULATORY QUALITY

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Abstract: Digital technology has become the order of daily activities in developing countries including Sub-Saharan Africa. The financial sector has not been left out in the digitalization process, which has been regarded as veritable means of enhancing access to finance in Sub-Saharan Africa. However, this has been hampered by the quality of regulations in the region. Thus, the study examined the nexus between digitalization and access to finance and the role of regulatory quality in Sub-Saharan Africa between 2010 and 2022. The study employed the two-step system Generalized Method of Moments in analyzing the data, and the result found that digitalization is effective in improving access to finance in Sub-Saharan Africa. It also found that poor regulatory quality negatively affect financial access in the region. As a result, when regulatory quality interacted with digitalization in the model, it weakens the effect of digitalization on access to finance. This calls for the SSA countries to strengthen the regulations especially with regard to digitalization and fintech in order to guide against undue transaction by the digital service providers and to guide against bad service providers scamming the customers and denying them access to financial services. Therefore, the study recommends that Sub-Saharan African countries need to strengthen their institutional infrastructures to make them stronger to prevent abuse of digital platform.

Keywords: Digitalization, access to finance, regulatory quality, two-step system GMM
JEL Classifications: G20, O30, K20, C33.

INTRODUCTION

The role of finance in an economy especially as it relates to its role in improving living conditions is clear from theoretical literature. Theories of improvement in the financial system such as (Shaw, 1973; Galor & Zeira, 1993) all affirmed that finance is important in the growth of an economy. Due to these theoretical underpinnings, many countries launched finance related policies such as the financial inclusion policy with the aim of improving access to finance for the underserved, the unbanked and the low income earners. Thus, access to finance is vital for poverty reduction and improvement in living conditions (Okereke, Kyarem & Iyoboyi (2023). In addition, access to financial services is also crucial for economic development of a country or a region such as the Sub-Saharan Africa, as it brings alongside investment in research, education, trade and business (Maity & Sahu, 2023).

However, Sub-Saharan Africa still perform below other regions of the world in terms of access to financial services, the spread of automated teller machines (ATM) per 100, 000 adults stood at 3.94 in 2011, increasing to 5.4 in 2014, 5.7 in 2017 and 6.94 in 2021. The same is applicable with the spread of commercial bank branches per 100, 000 adults which increased to 4.12 in 2021 from 3.49 in 2011, (World Bank, 2022). This implies that SSA has one of the lowest numbers of adults who have access to formal financial services between 2011 and 2021, which is below what is obtainable in other regions. In South America, there are 31 ATMs and 13.5 commercial bank branches per 100, 000 adults in 2011 increasing to 43.26 and 11.23 in 2021. In Middle East and North Africa, there are 23.14 ATMs and 12.05 commercial bank branches per 100, 000 adults in 2011 increasing to 32.35 and 12.83 in 2021 (World Bank 2022).

Nevertheless, the emergence of a digital world which introduced technological innovations known as digitization into finance has improved access to financial services. This has enabled the underserved and individuals in remote areas or those without a traditional bank account to have access to essential financial services (Houérou & Schulman, 2018). Through high quality affordable broadband internet, digital infrastructures such as fixed telephone subscriptions, mobile phone subscriptions, and secure internet services, people in remote areas in SSA can open accounts using mobile phones and can also receive and make payments using mobile or internet payment systems (Bhorat, Signe, Asmal, Monnakgotla & Rooney, 2023). Thus, digitalization has influenced financial system operations through many channels, such as, the automated teller machines (ATMs), point of sale (POS), mobile payment method, online banking and other digital wallets and banking transaction systems (Lowry, 2020). These channels form the indicators that inject digitalization into finance, which are experienced in bank account ownership, using mobile and internet for online transactions and the making or receiving of digital payments, (Bhorat, Signe, Asmal, Monnakgotla & Rooney, 2023).

However, despite 30% of individuals in SSA using the internet in 2021 which is a 12% increase from 2011, the regional digitalization is still lower than other regions of the world. In 2011, the fixed broadband subscription for 100 people in SSA is 0.26, increasing marginally to 0.37, 0.41 and 0.42 in 2014, 2017 and 2021 respectively. On the other hand, in other developing regions such as South Asia, the fixed broadband subscription for 100 people is 0.93, 1.23, 1.6 and 2.3 in 2011, 2014, 2017 and 2021 respectively. For South America the fixed broadband subscription is 8.10, 10.01, 12.1 and 16.76 in 2011, 2014, 2017 and 2021 respectively, while for Middle East and North Africa it stood at 3.39, 5.27, 8.69 and 11.89 in 2011, 2014, 2017 and 2021 respectively (World Bank 2022). In addition, there is inadequate or wide coverage of digital or internet services across all the areas in Sub-Saharan Africa especially in the remote or rural areas, that will mitigate the use of these services for financial transaction in those areas (Kouladoum, Kindzeka & Nchofoung, 2022).

This implies that many countries in Sub-Saharan Africa are still far below other countries in the globe in digitalization development trajectories, (Matthess & Kunkel, 2020), thereby, doubting the ability of Sub-Saharan African countries in sustaining the digitalization process, particularly giving the infrastructural deficiency and poor regulations. Studies have argued that a successful incorporation of digitalization into financial services geared towards improving financial accessibility involves the adoption of robust and quality regulations that can support the expansion of digitalization of financial services (World Bank, 2020). Adelowokan et al. (2018) have opined that strong regulatory frameworks is vital in ensuring innovations in the financial system by promoting clear rules and regulations that encourage innovation while reducing risks.

However, Sub-Saharan Africa is still suffering from poor regulations and institutional quality, (World Bank 2022; Bello & Oladunjoye, 2020). Most countries in SSA have a weak regulatory quality, for instance in 2021, the regulatory quality values for some big economies in the region such as Nigeria, South Africa, Ghana, Cameroon, and Angola are -0.932, -0.0732, -0.2003. -0.815, and -0.663 respectively, (World Bank, 2022). With poor and weak regulatory quality the risks and dangers involved in digitalization of financial transactions may be high for the remote dwellers and those with inadequate access to financial services. This will increase the costs and charges by financial institutions and digital service providers, as a result, instead of bridging the financial access gap may end up worsening the problems. Thus, the study contributes to literature by deepening understanding on the role of regulatory quality in the nexus between digitalization and access to finance in SSA. The major objective of the study is to examine the role of regulatory quality in explaining the impact of digitalization on access to finance in SSA. Results of past investigations are mixed The organization of the paper is as follows; first is the introduction, followed by the literature review in section two and the methodology in section three. Section four covered the results and result discussions, while the conclusion is in section five.

2. Literature Review

2.1 Theoretical Literature Review

Silber (1983) in his theory on financial innovation, advanced the idea that financial innovation often arises in response to regulatory constraints. According to this theory, innovations in financial instruments and practices are created to alleviate the financial limitations imposed on financial institutions. These limitations exist because of the presence of regulatory restrictions which prevent the financial system adapting to new technological innovations. Consequently, a significant portion of financial innovations seeks to mitigate regulatory restrictions. The theory suggests that financial innovation can be viewed as a defensive response by financial institutions to mitigate government agencies' financial oversight. It posits that the rationale behind financial innovation is the necessity to manage financial supervision (Silber, 1983).

The implication of the theory is that when the financial system of Sub-Saharan African countries invest and embrace digitalization, it will make the citizens exploring these innovations thereby giving room for access to financial services. This then lead to reduction in cost of capital, and further increase in investment and productivity and eventual increase in economic growth (Gbeide & Obadeyi, 2023). However, this theory does not take into account the role of institutions whether regulatory or financial institutions in the financial innovation process and is applicable to only specific aspects of innovations. Given this limitation the study examined another theory that emphasis the role of regulatory institutions in the form of theory of institutional quality.

Also, North (1994) developed a theory linking regulatory quality an aspect of quality of institutions and costs of financial transactions. North in his theory argued that transaction costs comprises pre-knowledge of the market prices involved in the transaction, the financial involvement of the pre-contract agreements and the cost of securing the transaction in the event of failure to fulfill the contract agreements. All the cost and financial involvements determine the gains from participating in economic transaction, and also determine if certain products should be made available by the producer, with sizable amount of transaction costs or not (Helgason, 2010). The implication of this theory in this study is that quality and strong institutions via regulatory framework tend to minimize the costs of transactions in a particular exchange, while bad weak regulations increase transaction costs.

The theory explains the behavioural pattern of financial institutions and other economic agents in a particular institutional environment such as in SSA. It captures reality about credits and loan contract practices by financial institutions shrouded with high transaction costs and insecure regulatory quality which affect access to finance (Olong, Fonchamyo & Sama, 2019). Insecure regulatory practices increase the transaction costs which constitute the major challenges facing access to credits and betterment of living standard in the SSA region.

2.2 Empirical Literature Review

Empirical studies abound focusing on the nexus between financial access and institutional quality on one hand and the nexus between access to finance and digitalization on the other hand. Okereke, Kyarem and Iyoboyi (2023) examined the impact of financial access on human development index across Sub-Saharan Africa from 2004-2021. The research employed the number of commercial bank branches and spread of automatic teller machines as a proxy for financial access and adopted the two-step system GMM as a technique of analysis. The study found that only spread of automated teller machines (ATMs) is significant in improving the human development in SSA. Expansion of branches of commercial bank has no substantial effect on the Human

Development Index in Sub-Saharan Africa. This implies that access to finance through spread of ATMs is significant in improving living standard in SSA.

Onyia and Okereke (2023) examined the interaction impact of digitalization and entrepreneurship financing on economic growth in Nigeria from 1990-2021. The analysis of the study was conducted using the restricted ARDL model and the result found that digitalization interacts with entrepreneurship to increase economic growth in Nigeria. The study further revealed that the interaction between digitalization has not spurred entrepreneurship financing in improving the growth of the Nigerian economy. This explains the importance of increasing investment in digital technology in order to boost innovations and digitalization of the Nigerian economy.

Raifu, Okunoye, & Aminu, (2023) conducted a study aimed at investigating the role of regulatory quality in the nexus between information communication technology and financial development in Africa from 2003-2020. Using data of 38 countries and employing the two-step system GMM, the study revealed that regulatory quality boosts the impact of ICT on financial development in Africa. On different financial development indicators, ICT improves depth of financial system and access to financial services but impair financial efficiency and stability.

Akpa & Asongu (2023) studied how governance quality interacts with internet to impact on financial inclusion in Sub-Saharan Africa covering the period 2004 to 2020. The study employed the system Generalized Method of Moments for the data analysis and the result revealed internet combined with quality of governance is significant in improving financial inclusion in SSA. The study also revealed thresholds of governance needed for the internet to promote financial inclusion. The study recommended that Sub-Saharan African countries should focus on policies that will strengthen quality of governance in order to build internet infrastructure thereby boosting internet utilization and in turn improve financial inclusion.

Chiang, Liu, & Liu, (2022) conducted a study with the aim of investigating whether regulatory quality influences financial development and economic growth nexus in 11 Asian countries from 2002 to 2017. The study adopted the nonlinear panel smooth transition technique and the result revealed that financial development spur growth in countries with strong regulatory quality. The study concluded that sound regulatory quality could promote the growth effect of life insurance and the stock exchange market which will boost economic growth

Kouladoum, Kindzeka, & Nchofoung (2022) examined the nexus between digital technology and financial inclusion in 43 Sub-Saharan African countries from 2004-2019. The study adopted the Generalized Method of Moments and Instrumental Variable- Tobit for the data analysis. The proxy for digital technology is the fixed and mobile telephone subscription, fixed broadband subscription and internet users. The result of the study found that digitalization is an effective tool promoting effects on financial inclusion, indicating that the rate of financial inclusion in Sub Saharan Africa increases with increase use of digital technologies.

In addition, Demir, Pesqué-Cela, Altunbas & Murinde, (2020) have found that financial access reduces income inequality. Their study investigated the connections between digital financial technology, financial accessibility and income inequality in 140 countries using 2011, 2014 and 2017 global findex data. Adopting the quantile regression technique to find out whether the interrelationship between easy access to financial services and disparity in income varies among the group of countries covered in the study based on their level of income inequality. The study found that the adoption of fintech to aid access to finance reduces income inequality across all quantiles of income. It also found that while access to finance significantly bridges the income inequality gap at all quantiles of the income distribution, the impact is more effective in higher-income countries than low income countries.

However, the findings of Bakari et al., (2019) also supported the influence of access to finance in alleviation of poverty. The research analyzed how accessing financial services influence mitigation of economic deprivation using a dataset of forty-nine Sub-Saharan African countries from 1980-2017. The study employed the fixed panel technique for the analysis of the data. The outcome of the analysis revealed that access to ATM, and access to internet and other electronic information impact on alleviating poverty within the sub-region. Based on the outcomes, the study concluded that inclusive finance programs are important for mitigating deprivations and bringing many out of poverty in Sub-Saharan Africa.

Studies have found that digitalization and technology improve access to finance in SSA. However, with the little progress made by Sub-Saharan African countries in digitalizing the financial system, there is slow of access to financial services in most areas in the region, it is obvious that much still needs to be done to unravel the role of regulatory quality in digitalization and financial accessibility nexus.

3. Methodology

3.1 Research Design

The study used the *Ex Post Facto* Research Design. This is necessary because the study used existing data for the analysis, and due to the fact the behavior of the data cannot be controlled and manipulated in the course of the data analysis. Also, analysis and inferences concerning digitalization and access to finance are made, without prior knowledge of their outcomes. The use of existing data requires the adoption of an econometric method and this study adopted the system Generalized Method of Moments (GMM) estimation technique in addressing the objectives of the study.

3.2 Sources of Data

The sample period for the study is from 2010 to 2022, which was chosen based on the available data for SSA countries. The data for all the variables used in this study are obtained from the World Bank (2022) world development indicators.

3.3 Description of Variables

The variables in this study are divided into dependent and independent variables. Access to finance is the dependent variable while indicators of digitalization and regulatory quality are the independent variables. Access to finance was measured using number of automated teller machines (ATMs) following the study of (Kouladoum, Kindzeka, & Nchofoung 2022) who examined the nexus between digital technology-and financial inclusion in SSA from 2004-2019. Digitalization is measured using fixed broadband per 100 people and internet use. Regulatory quality is an institutional quality variable, while GDP per capita is the control variable following the study of (Bakari, et. al, 2019) who found strong evidence that GDP per capita as important factor affecting access to finance.

3.4 Model Specification

A mathematical model that captures the link between digitalization and access to finance is constructed in the form below;

ACCESS = f(FBS, INTUSE, PSC/GDP, GDPPC, REQTY) ……………………….. . (3.1)

where; ACCESS represents access to finance proxy by ATM. Digitalization indicators, FBS and INTUSE represent fixed broadband subscription per 100 people and internet use. PSC/GDP is the ratio of commercial bank credit to GDP measure of financial depth, REQTY represents regulatory quality, while (GDPPC) stands for gross domestic product per capita. Rewriting equation 3.1 to form;

$$ATM_{it} = FBS, INTUSE, PSC, RQTY, GDPPC \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \quad (3.2)$$

Equation (3.2) is rewritten to form a dynamic panel model described as:

$$ATM_{it} = \alpha_i + \delta_t + \beta_1 ATM_{it-1} + \beta_2 FBS_{it} + \beta_3 INTUSE_{it} + \beta_4 PSC/GDP_{it} + \beta_5 REQTY_{it}$$
$$+ \beta_6 GDPPC_{it} + \varepsilon_{it} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \quad (3.3)$$

where i represents 45 different countries, t represents 13 years spanning from 2010 to 2022, and ε represents the error term. The subscripted intercept term (αi) implies potential variations in intercepts among the countries, and the coefficients β1... β8 represent elasticities, as they gauge the rate of change, while (αi) represents the intercept. In order to incorporate the role of regulatory quality in the link between digitalization and access to finance, the study introduces an interaction variable of digitalization and regulatory quality to examine if regulatory quality interact digitalization to modify the impact on access to finance in SSA. The interaction variable coefficient must be significant and positive or negative for the role of regulatory quality to be felt on access to finance. If it is not significant then regulatory quality do not moderate the effect of digitalization on access to finance in SSA. The interaction equation is specified as a system GMM following (Arellano & Bover 1995: Blundell & Bond, 1998) in equation 3.4;

$$ATM_{it} = \alpha_i + \delta_t + \beta_1 ATM_{it-1} + \sum_{j=0}^{1} \beta_{2i} FBS_{it-j} + \sum_{j=0}^{1} \beta_{3i} INTUSE_{it-j} + \sum_{j=0}^{1} \beta_{4i} PSCGDP_{it-j} + \sum_{j=0}^{1} \beta_{5i} REQTY_{it-j}$$

$$+ \sum_{j=0}^{1} \beta_{6i} GDPPC_{it-j} + \sum_{j=0}^{1} \beta_{6i} (FBS * REQTY)_{it-j} + v_{it} \qquad (3.4)$$

Equation 3.4 implies that access to finance in SSA depends on its own lag, digitalization, financial dept, regulatory quality and the interaction of digitalization and regulatory quality. It is expected that increase in broadband subscription, internet use, financial depth and GDP per capita will increase access to finance in SSA, (β_2, β_3, β_4 and $\beta_6 > 0$). It is also expected that increase in quality of regulations is expected to have either a positive effect on negative effect on access to finance, depending on whether the country has a strong or poor regulatory quality.

3.5 Technique of Data Analysis

The study estimated the impact of digitalization and interaction with regulatory quality on financial access using the two-step system GMM. This enabled us ascertain if weak or strong regulatory quality influences the impact of digitalization on financial access or not. This was done in order to find out if digitalization will affect access to finance more or less when role of regulatory quality is considered. The use of the two step system GMM for the data analysis does not necessarily require pre-estimation test.

The estimation was followed with the diagnostic tests suitable for the two step system-GMM. This was carried out with the examination for autocorrelation of the error term using the Arellano-Bond (AR) test, as well as the specification tests for over-identifying restrictions through the Sargan and Hansen tests. These tests validate the instruments used in the estimation and support the significance of the overall estimation. The justification for adopting the system GMM is that the study has a time period (T) that is smaller than number of cross-sections (N).

4. Results and Discussion

The descriptive statistics showing the statistical properties of the variables are presented table 1.

Table 1: Descriptive Statistics

	Observation	Mean	Maximum	Minimum
ATM	456	14.5414	92.53	0.3
FBS	547	1.401	38.77	0
INTUSE	564	2.7529	5.855	0
FD	552	20.91	104.85	0.0047
REQTY	585	-0.6559	1.1969	-2.002
GDPPC	585	3.6295	21.4521	-36.392

Source: Authors computation using stata

Number of ATM representing financial access has a mean of 14.5 per cent for the entire SSA for the period 2010-2022. The depth of financial sector represented by credit to the private sector as a ratio of GDP has a mean of 20.91 with maximum value of 104.85 for Mauritius in SSA and a minimum value of 0.004714 for Sierra Leone in 2013. The mean for fixed broadband subscription in SSA is 1.401, with the zero subscription recorded in Congo Democratic republic and Chad in 2010 and 2020, while the highest subscription is 38.77 in Seychelles in 2022. Also, the mean for internet use is 2.75 with the highest value of internet use of 5.86 recorded in Mauritius in 2020. For quality of regulations, the mean value is -0.65596 with Mauritius having the best performed value in SSA with a value of 1.196 in 2014, while Zimbabwe performed lowest with a value of -2.2015 in 2005.

The correlation matrix of the data and the indicators representing digitalization, regulatory quality and access to financial services is presented in Table 2. The results indicate that the regressors used in this study are not highly correlated. A correlation coefficient of up to 80% (0.8) and over is considered high (see Gujarati, 2004). Consequently, there is no incidence of multicollinearity among the regressors in the estimated models, as the highest coefficient is 0.7072 (between fixed broadband subscription and *ATM).*.

Table 2: The Correlation Matrix

	ATM	*FBS*	*FTS*	*FD*	*REQTY*	*GDPPC*
ATM	1.0000					
FBS	0.7072	1.0000				
INTUSE	0.6910	0.5672	1.0000			
FD	0.3537	0.2840	0.3169	1.0000		
REQTY	0.6054	0.5368	0.6174	0.2450	1.0000	
GDPPC	-0.1825	-0.1397	0.0890	0.0139	0.0572	1.0000

Source: Authors' computation

Table 3: The Two step system GMM results

Model in which fixed broadband subscription interacted with regulatory quality

ATM	Coefficient	Standard Error	Prob. Value
CONSTANT	9.2318*	5.2968	0.089
L.ATM	1.0948***	0.0402	0.000
FBS	0.0347**	0.01501	0.026
INTUSE	0.5171**	0.2444	0.040
FD	0.0013*	0.0007	0.082
REQTY	-10.9168*	5.9462	0.073
INTERACTION	-0.0416**	0.01724	0.020
GDPPC	-0.0055	0.0492	0.911
No of instruments	34		
F-stat. (6, 42)	1441.23	Prob>F	0.000
Number of obs.	379		
AR (1)	z = -2.17; (pr>z = 0.030)		
AR (2)	z = 0.33; (pr>z = 0.745)		
Sargan test (OIR)	chi2(27) = 51.51; (Prob > chi2 = 0.070)		
Hansen test (OIR)	chi2(27) = 30.52; (Prob > chi2 = 0.291)		
Hansen test excl.group	chi2(23) = 29.34; (Prob > chi2 = 0.169)		
Diff (null H exogenous)	chi2(4) = 1.18; (Prob > chi2 = 0.881)		
Hansen test excl. group	chi2(24) = 21.99; (Prob > chi2 = 0.460)		
Diff (null H exogenous)	chi2(1) = 8.52; (Prob > chi2 = 0.120)		

Source: Authors' computation. *** 1% sig. level, ** 5% sig. level and * =10% respectively.

The lag of ATM is significant at all levels, implying that the past level of financial accessibility is contributing to the demand for increase in access to finance in SSA. The result found fixed broadband subscription and internet use representing digitalization has a positive and significant effect on access to financial services in SSA at 5% and 10% significant level. A unit increase in fixed broadband subscription leads to 0.0357 increase in access to financial services in SSA. Also, a unit increase in internet use leads to 0.517 increase in financial service accessibility in SSA. The result is not surprising, due to the rise in financial technology and digital financial payment systems, which has enhanced the rise in patronage of financial institutions and their services in Sub-Saharan African countries. This is in agreement with the findings of (Kouladoum, Kindzeka, & Nchofoung 2022) who revealed that digitalization impact on financial inclusion in Sub Saharan Africa. It also buttressed the results of (Demir, Pesqué-Cela, Altunbas & Murinde, 2020; and Bakari et al., 2019) showing that digitalization aid access to finance in reducing income inequality.

The depth of credit use (represented by ratio of bank credit to GDP) has a positive and significant effect on access to finance in SSA at 10% significant level. This implies that the more banks gives credit to the private sector for productive activities, the more increase in such private sector having access to finance. Regulatory quality has the highest effect on access to finance in SSA but on the negative side at 10% significant level, the result implied that a unit increase in poor regulatory quality leads to 10.91 decrease in access to finance in SSA. Thus, poor regulatory quality witnessed in SSA has hindered access to finance in the region; this is not surprising given the weak institutional quality ravaging Sub-Saharan African countries. Surprisingly, the interaction between digitalization (fixed broadband subscription and regulatory quality) is negative with a significant effect on access to finance at 5% and 10% significant level. A unit increase in the interaction between digitalization and regulatory quality will reduce financial access in SSA. This implies that poor regulations in SSA minimize and erode the effect of digitalization and financial technology on financial accessibility in SSA. The result did not tally with that of (Raifu, Okunoye, & Aminu, 2023) and (Akpa & Asongu, 2023) who found that ICT and internet use interacts with quality regulations and governance to boost financial sector development and financial inclusion in Africa.

The diagnostic tests indicate that the AR tests that test the serial correlation of the data and estimation results are satisfactory. Particularly, second order AR test is not statistically significant, therefore, accepting the hypothesis of no autocorrelation. Although, the result failed the Sargan test, the Hansen tests for over identification restrictions is not significant, implying that the instruments used are valid or not correlated with the error term. Thus, the Hansen OIR is robust but weakened by instruments. Also, the Difference in Hansen test for exogeneity of instruments was employed, and the outcomes failed to reject the hypothesis that the entire instruments as a group are exogenous. The overall F-statistics and test for the model is significant at 1%, 5% and 10%, signifying that the parameters are jointly relevant in the model.

5. Conclusions

The paper examined the nexus between digitalization and access to finance and the role of regulatory quality in Sub-Saharan Africa between 2010 and 2022. The analysis of the study was conducted using the two-step system Generalized Method of Moments. The study concludes that digitalization is effective in improving access to finance in Sub-Saharan Africa. It also concludes that weak quality of regulations experienced in SSA is negatively eroding the positive effect of digitalization on access to finance. The negative effect of regulatory quality on financial access is not unusual due to the negative records of regulatory quality in Sub-Saharan African countries. This calls for the SSA countries to strengthen the regulations especially with regard to digitalization and fintech in order to guard undue transaction by the digital service providers and to guard against bad service providers scamming the customers and denying access to financial services.

Therefore, the study recommends that Sub-Saharan African countries need to strengthen their institutional infrastructures to make them stronger to prevent abuse of digital platform. Institutions saddled with the regulating digitalization and fintech should be efficient and without interference from the service providers and government agencies, to enable such agencies rise above corrupt institutions. Previously, some of the goals of many Sub-Saharan African countries in ensuring many of the underserved and unbanked are included in the formal financial system were not met. Thus, the study recommends that policies that will ensure access to finance in SSA should be aligned with institutional quality frameworks that will bring sanity to the digitalization process, ensuring that everyone can be able access and use the financial institutions without fear.

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