

Technology and Conditional Financial Development of Sub-Saharan Africa (SSA) Countries

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Abstracts

The study was undertaken to examine technology and conditional financial development of Sub-Saharan Africa (SSA) countries. The dependent variable used in the study is the conditional financial development proxy by the domestic credit to private sector (DCPS) and the independent variable is technology proxy by mobile telephone users (MTU), internet users (INT), fixed broadband (FBOB), fixed telephone subscriptions (FTS), and urban population as a share of total population (UPTP). Secondary data were obtained from the World Development Indicators and International Telecommunication Union (ITU) for a period of 10years (2013-2022) for thirty (30) countries. Data obtained were analyzed using descriptive analysis, correlation analysis, variance inflation factor (VIF), Heteroskedasticity test, etc. E-view software package (9.0) was used to run the different pre-estimation tests, diagnostic test and the GLM test (regression test). The results reveals that mobile phones users (MTU) and Urban population as a share of total population (UPTP) affirms negative insignificant effect on domestic credit to private sectors (DCPS) of SSA countries but internet users (INT), fixed broadband (FBOB) and fixed telephones subscriptions (FTS) affirms positive significant effect on domestic credit to private sectors (DCPS) of SSA countries. Hence, the study concludes that technology have significant effects on conditional financial development of Sub-Saharan Africa (SSA) countries. The study recommends that the Federal Ministry of Communications and Digital Economy (FMCDE) should sensitize the populace on the importance of urban population and mobile phones uses, FMCDE should also create more easy access to fixed broadband in SSA countries and lastly, the study also recommends that SSA countries should encourage migration of people from villages to urban areas so as to advance the economy. Key Words: Technology, Conditional Financial Development, SSA, Internet Users, fixed telephone subscriptions.

I. Introduction

Technology has been a topical issue in the research domain or world in the sense that, it influences financial and non-financial institutions positively and negatively. In the SSA countries, humans are not well acquainted (equipped) with the needed technology that will set the financial services at pace. Beck et al (2015), Edoh et al (2021) reported that despite the advancement in technologies, most of the financial sectors of the Africa countries are still behind. Tchamyoun et al (2019) affirmed that technology is at maximum level in the developed countries but in SSA is at high rate (increasing level). This has brought a great lacuna on the financial services provided by the financial institutions of the SSA countries. Meanwhile, other developed countries like USA, UK, Canada, etc offered better financial services to humanities. Evans (2018) posited that advanced countries have access to better financial services than less developed countries because of the technology advancement embraced and employed by them invariably, it results to lower cost of financial transactions, enhancement of risk management and financial innovation. However, the effectiveness of technology in fostering financial development is influenced by several contingent factors.

Furthermore, technology is a thing that need to be embraced and advanced upon. For the SSA countries to adequately catch up with the growing and developing technology they need to wake up to their responsibilities by ensuring that the masses have easy access to technology that will improve the well-being and economies of the people and the countries at large. Meanwhile, Asongu et al (2021), Evans (2018) reported that most of the SSA countries have recorded successes by using some digital technological indicators like mobile money transfers in order to reduce transaction cost but there is still need for SSA countries to advance their technologies so as to move with the technological advancement train. Over the years, the technologies such as mobile payment, secure server, and computers, broadband have aided financial institutions into advanced dimensions which is resulting to financial development among the nations. This shows that the advent of technologies has the capacity to significantly better financial development in SSA countries. According to development literature (Todaro and Smith, 2020), underdeveloped economy is characterized by unemployment, high poverty and income inequality and in the same vein, technology indicators play crucial roles in economic development. A country that wants to catch up with the moving train (technology) need to abreast its financial institutions with the latest development and innovation of the technologies. Rapid technological changes have spurred financial innovations that have fundamentally changed traditional financial services and products. Asongu and De Moor (2017) defined ICT sectors as something that accelerates bank branches operations by increasing their operations flexibility as well as the disclosure of banking risks by ensuring that there is safety in banking sector operations. Also, financial sectors have witnessed great changes as a result of rapid development of technology. Based on the rapid development, technology has increased easy access to deposit and credit facilities, efficient allocation, enhance financial transfers and stimulate economic growth

Financial development is the combination of the financial depth, access, efficiency and stability (Cihak et al 2012). It play an important role in stimulating economic growth which in turns reduce

poverty, income inequality and unemployment in the SSA countries. When the financial institutions are well digitalized and the populace have access to the technologies, the better the economy and the countries. Tchamoyou and Asongu (2017) posited that financial development is at a low level in Africa countries compared to developed world.

Although, technology has been playing crucial roles in the development of SSA countries, especially when it comes to financial services and inclusion but there are still challenges to overcome, such as limited internet connectivity, digital literacy and data privacy concerns. Salahuddin and Gow (2016) supported the above statement by saying despite the advent of internet penetration, particularly for socio-economic development SSA countries are still behind the rest of the world. This might pose a serious problem if SSA countries fail to recognize the technological advancement. Additionally, the impact of technology has been extensively analysed in the previous studies but the effect on conditional financial development has not been delved into and based on the outcomes of the researchers like Glerai, Abid, Sekrafi and Abdelli (2021), Alhassan, Guryanov and Kovadio (2021) and Ejemeyovwi, Osabuohien and Bowale (2021), the findings shows negative (positive), significant positive and positive effects respectively. Also, Tchamyou, Erreygers and Cassimon (2018) founds that ICT reduces income inequality through formal financial sector development and financial sector formalization as opposed to informal financial sector development and financial sector in formalization. Yu, Jin, Zhang and Chong (2022) reveals that ICT and financial development promote renewable energy consumption. Based on the findings above, this study empirically investigate the impact of technology on conditional financial development of SSA countries with the following objectives in mind; investigate the effect of mobile telephone users on domestic credit to private sector (DCPS); assess the effect of internet users on domestic credit to private sector (DCPS); ascertain the effect of broadband on domestic credit to private sector (DCPS); examine the effect of fixed telephone subscriptions on domestic credit to private sector (DCPS); determine the effect of urban population as a share of total population on domestic credit to private sector (DCPS) of SSA countries, respectively.

II. Review of the Related Literature

2.1. Technology

Technology involves the development and application of devices, systems and processes that are designed to make tasks easier, more efficient, more productive and more effective. It has significantly impacted the society, transforming the way we live, communicate and work. From the invention of the wheel to development of the internet, technology has revolutionized how we interact with the world. It has also enabled us to connect globally, access vast amount of information instantly and accomplish tasks more quickly and efficiently than ever before. Schumper (1934), Pyka and Andersen 2012 and Solo (1956) exerted the existence of positive significant relationship ICT and GDP. The neo- Schumpeterian theories and neoclassical growth theory suggested that ICT came into existence as an input into economic supply in the form of capital and causes the improvement of the production process through deepening capital and making advancements in technology and labor force quality. Wish (2002), Aghaei and

Rezagholezadeh (2017) posited that ICT is created to add value at sectorial level and firm's level which in turn improves productivity and economic growth in the country.

2.2. The Relationship between ICT Diffusion and Financial Development on the Level of Economic Growth

The relationship between ICT diffusion and financial development on Economic is complex and interlinked. ICT diffusion refers to the process by which new technologies, such as the internet, mobile phones and data analytics are adopted and integrated into various sectors of the economy. On the other hand, financial development refers to the depth and efficiency of financial markets and institutions in an economy. ICT diffusion can have a significant impact on financial development by enabling financial institutions to improve their operations and reach a wider range of customers. For example, the use of online banking services and mobile payment platforms can increase financial inclusion and provide greater access to credit and savings services for underserved population. It can also enhances efficiency of financial transactions, reduce costs and improve risk management practices. Sassi and Goaied (2013) found that there is statistically significant positive effects between ICT diffusion and financial development on economic growth. Recently, Raheem et al (2020) said there is positive and negative effect between ICT diffusion and financial development on GDP in the long-run and short-run. This mixed findings can be as a result of lack of technological advancement of the country. However, financial development can enhance ICT diffusion by providing the necessary infrastructure and funding for ICT adoption. The funds and infrastructure can be made available if a country have a well-developed financial system that will encourage savings, efficient allocation of resources and facilitate economic growth.

2.3. Conditional Financial Development

Conditional financial development refers to the idea that financial institutions and markets can only develop fully under certain conditions. These conditions include political stability, strong legal and regulatory frameworks, transparency and accountability in governance and macroeconomic stability. In order for a country to experience sustained and inclusive financial development, these conditions must be considered and met. If a country lacks these essential conditions, its financial institutions may struggle to grow and develop. Some of the conditions that hinder growth and development are corruption, political instability, lack of accountability and transparency. If any country fails to pay attention to this negative conditions, no matter the technological innovation, growth and development will be at a low rate. Papadavid, Rewilak and Brighty (2017) said sound financial systems is a function of high levels of financial development.

2.4. Theoretical Review

2.4.1. Neoclassical Growth Theory

This theory is propounded by Solow 1956. This theory is of the opinion that ICT came into existence as an input into economic supply in the form of capital and causes the improvement of production activities through deepening (broaden) capital and making technological advancement and labor force equality. In other words, this theory lay emphasizes on the importance of

technological progress, and capital accumulation in promoting long-term economic growth. The capital accumulation include machinery, equipment and human capital in form of education and skills. This theory is also of the opinion that economic is a major driver (determinant) of accumulation of capital. When more capital is accumulated, there will be financial resources to advance technology. The neo-classical growth theory assumes diminishing returns to capital, savings and investment, technological progress and convergence.

2.2.2. Extensive Margin Theory

This posited that financial development could operate on larger margin by enhancing access to and usage of financial services by agents who due to financial constraints had not being using financial services (Chiwira et al, 2016, Orji et al, 2015 and Odhiambo, 2014). This means that financial development can extend it financial access and usage to the vulnerable who are constraint to financial services. Batabyal and Chowhury (2015), Bae et al (2012) put differently that financial development is the ability to reduce inter-temporal (intergenerational) persistence in relative incomes by improving economic opportunities for the less privileged people.

2.3. Empirical Review

Ihayere, Alege, Gershon, Ejemeyovwi and Daramola (2021) examined information communication technology (ICT) access and use towards energy consumption in selected SSA. The study utilizes pooled ordinary least square (POLS) techniques and panel data were extracted from the SSA economies from the period of 2000-2019. The variables used are energy consumption, mobile technology, institutions, energy intensity, gross domestic product growth rate and trade openness. The data were sourced from World development Indicators of the World Bank (2020), sustainable energy for all database from the SE4ALL Global tracking framework done together by the World Bank, International Energy Agency, the Energy sector management assistance program and World Bank. The study shows comparable effects of a positive relationship with Pothiton et al. (2017) which uncover a positive connection among ICT and energy consumption in the European Union nations for the two tests.

Kouladoun, Wirajina and Nchofoung (2022) researched on digital technologies and financial inclusion in SSA countries from 2004 to 2019. Generalized methods of moments techniques were used for data collection. The digital technologies was proxied by information communication technology indicators of the subscription rate of fixed and mobile telephone users, fixed broadband, internet users. The study reveals that there is positive significant effects on financial inclusion.

Ofori, Osei and Alagidede (2022) examined the direct and indirect effect of ICT diffusion on inclusive growth in 42 SSA countries from 1980-2019. GMM was used as a techniques of data analysis. The result reveals that ICT skills, access and usage induce inclusive growth in SSA and effects of ICT skills, access and usage were enhanced in the presence of financial development.

Dzator, Acheampong, Appiah-Otoo and Dzator () studied the effect of ICT on poverty reduction using comprehensive panel data for 44 SSA countries from 2010-2019. Using dynamic system

GMM, the findings reveals that telephone penetration, mobile phone penetration and ICT goods imported reduces poverty while internet penetration, broadband penetration and ICT goods exported increases poverty rates. Data were extracted from International Labor Organization (ILO), World Bank development indicators (WBI), Standardized World Income Inequality Database (SWIID).

Using panel from 37 SSA countries, Owolabi, Adedeji, Aderounmu, Oku and Ogunbiyi (2023) explores how ICT and financial development contribute to economic diversification. ICT is proxied by fixed broadband, fixed line telephone, ICT goods imports, internet, mobile and secure internet servers and financial development is measured by private sector credit to Gross Domestic Product (GDP). Model estimation was done by using generalized method of moment (GMM), pooled ordinary least square regression, and panel data fixed effects. The study reveals that fixed line telephone and ICT import goods significantly reduced economic diversification while internet and mobile has insignificant effect on economic diversification.

Gheraia, Abid, Sekrafi and Abdelli (2021) assessed the moderating role of ICT diffusion between financial development and Economic growth: A bootstrap ARDL approach in Saudi Arabia. The study covers from 1990-2019. The endogenous variable is GDP, the independent variables is ICT proxied by mobile cellular subscriptions MCS (per 100 people), fixed broadband subscriptions FBS (per 100 people), Fixed telephone subscriptions, individuals using the internet IUI (% of population), and financial development measured by domestic credit to private sector. The results shows that ICT diffusion and financial development have negative and positive statistically significant effect on economic development. This indicated that ICT diffusion boosts the role of financial development in economic development.

III. Research Methods

3.1. The Model and Data

The study empirically model it variables from the work of Gheraia, Abid, Sekrafi and Abdelli (2021) titled the moderating role of ICT diffusion between financial development and economic growth: A bootstrap approach in Saudi Arabia. It is expressed as:

$$GDP = \beta_0 + \beta_1 ICT + \beta_2 FD + \mu_t$$

The functional relational relationship of the effect of technology and conditional financial development of SSA countries. It is written as:

$$DCPS = f(MTU, INT, BOB, FTS, \text{ and } URP) \dots \dots \dots (1)$$

$$DCPS = \beta_0 + \beta_1 MTU + \beta_2 INT + \beta_3 FBOB + \beta_4 FTS + \beta_5 URP + \mu_t \dots \dots \dots (2)$$

Where: DCPS = Domestic credit to private sectors; β_0 = Intercept; β_1 - β_5 = Slope coefficient for variables; MTU = Mobile Phones Users; INT = Internet Users; FBOB = Fixed Broadband; FTS = Fixed telephone subscriptions; URP = Urban population as to share of total population; μ_t = stochastic value or error term for the regression equations.

The study utilizes panel data obtained from the World Development Indicators (WDI) 2022 and International Telecommunication Union (ITU) 2022. Having conducted redundant fixed and Hausman test, whereby the redundant fixed test is used to determine between the pooled ordinary least squares techniques (POLS) and the fixed effect model (FEM). The decision rule is to accept fixed effect if the p-value of the redundant fixed test is greater than 5%. However, if its p-value is less than 5%, the null hypothesis is rejected while alternate hypothesis states that where there are fixed period effects accept the alternate. Meanwhile, the Hausman test was conducted to choose between fixed effects model and random effects model. From the Hausman test conducted, it shows that the REM is appropriate for the study because the p-value of Hausman test is greater than 5%. Various test was conducted before running the regression results, these includes descriptive statistics, correlation analysis and variance inflation factors. Arising from the different tests, the study adopted the Generalized Linear Model (GLM). This because GLM will provide a flexible and interpretable framework for modeling relationships between variables in a way that is both statistically significant and practical for data analysis and inference. These tests will be done through the instrumentality of E-views version 9.

IV. RESULTS AND DISCUSSIONS

This section dealt extensively with regression results alongside each of their policy implication. For better understanding, the data domestic credit to private sectors, mobile phones users, Internet Users, fixed broadband, fixed telephone subscriptions and urban population to share of total population was extracted from the world development indicator (2024) data base from 2013-2022 in appendix.

DESCRIPTIVE STATISTICS

Table 4.1 summary of descriptive statistics

Study Variables	Mean	Median	Maximum	Minimum	Std. Dev.	Observation
DCPSC	23.85527	16.07252	179.2302	5.237706	29.71271	300
MTU	87.27748	84.28985	191.5084	24.99445	34.38806	300
INT	28.67935	22.91084	97.68179	1.150000	22.33918	300
FBOB	2.748048	0.202706	49.54881	0.000000	9.118376	300
FTS	234322.9	58047.00	4593321	0.000000	658493.0	300
URP	45.62122	44.62300	90.73500	11.48200	18.33585	300

Source: E-views, 9.0 output, 2024.

From Table 4.1 above, it shows the mean, median, maximum, minimum, standard deviation and observation. Specifically, conditional financial development measured by domestic credit to private sectors reported a mean value of 23.85527 and standard deviation of 29.71271. From the values reported it implies that DCPSC widely dispersed from the average reason being that the standard deviation is greater than mean. Furthermore, the DCPSC of SSA countries reported the maximum and minimum values at 179.2302 and 5.237706 respectively.

Again, technology proxy by mobile phones users, internet users, fixed broadband, fixed telephone subscriptions and urban population recorded an average values of 87.27748, 28.67935, 2.748048, 234322.9 and 45.62122 respectively and deviated by 34.38806, 22.33918, 9.118376, 658493 and 18.33585 respectively. From the report, it shows that proxy of technology evidenced low volatility. By extension, did not dispersed much from the mean. This is owing to the fact that the standard deviation values are lower than the mean values. This implies that the model is fit for policy formulation and predictions. Additionally, they reported highest (maximum) values of 191.5084, 97.68179, 49.54881, 4593321, and 90.73500 respectively and least (minimum) values of 24.99445, 1.150000, 0.000000, 0.000000 and 11.48200 respectively.

4.2. Regression Results

Arising from the various diagnostic tests conducted the study adopted the Generalized Linear Model (GLM) to test the research hypotheses as it is a more flexible and powerful statistical modeling technique. This method was also used because the variables are not normally distributed. The regression result is presented below: s

4.2.1 GENERALIZED LINEAR MODELS (GLM) RESULT

Dependent Variable: DCPS

Method: Generalized Linear Model (Newton-Raphson / Marquardt steps)

Coefficient covariance computed using observed Hessian

Variable	Coefficient	Std. Error	z-Statistic	Prob.
C	12.24568	2.314469	5.290924	0.0000
MTU	-0.002797	0.027717	-0.100902	0.9196
INT	0.119200	0.057711	2.065447	0.0389
FBOB	1.349844	0.157607	8.564643	0.0000
FTS	2.23E-05	1.88E-06	11.85574	0.0000
URP	-0.010952	0.052838	-0.207278	0.8358
Mean dependent var	23.85527	S.D. dependent var	29.71271	
Sum squared resid	40552.21	Log likelihood	-1161.696	
Akaike info criterion	7.784643	Schwarz criterion	7.858719	
Hannan-Quinn criter.	7.814288	Deviance	40552.21	
Deviance statistic	137.9327	Restr. Deviance	263970.7	
LR statistic	1619.765	Prob(LR statistic)	0.000000	
Pearson SSR	40552.21	Pearson statistic	137.9327	
Dispersion	137.9327			

Source: Econometric Views version 9.0

The GLM result above reported a LR statistic value of 1619.765 and p-value of 0.000000. This suggests that all regressors in the model are statistically significant. This shows that the model is adequate and the null hypotheses may not be accepted.

4.3. Test of hypotheses

Based on the Generalized Linear Model (GLM) result -presented in the table 4.7 above, the individual study variables are tested below: **H0₁**: Mobile phones users (MTU) has no significant effect on domestic credit to private sector (DCPS) in Sub-Saharan African countries. From the GLM result mobile phones users reported negative coefficient value of -0.002797 and a p-value of 0.9196. Since the p-value is greater than 5% significant level, the null hypothesis is accepted while the alternate hypothesis is rejected. This implies that MTU has insignificant effect on DCPS. **H0₂**: Internet users (INT) has no significant effect on domestic credit to private sector in Sub-Saharan African countries. The GLM result show that internet users (INT) reported positive coefficient value of 0.119200 and a p-value of 0.0389. Since the p-value is lesser than 5% significant level, the null hypothesis is rejected while the alternate hypothesis is accepted. This implies that INT has positive significant effect on DCPS.

H0₃: Fixed broadband (FBOB) has no significant effect on domestic credit to private sector (DCPS) in Sub-Saharan African countries. The GLM result showed that fixed broadband (FBOB) reported positive coefficient value of 1.349844 and a p-value of 0.0000. Since the p-value is lesser than 5% significant level, the null hypothesis is rejected while the alternate hypothesis is accepted. This implies that FBOB has positive significant effect on DCPS. **H0₄**: Fixed telephone subscriptions has no significant effect on domestic credit to private sector in Sub-Saharan African countries. From the GLM result fixed telephone subscriptions (FTS) reported positive coefficient value of 2.23E-05 and a p-value of 0.0000. Since the p-value is lesser than 5% significant level, the null hypothesis is rejected while the alternate hypothesis is accepted. This implies that FTS has positive significant effect on DCPS. **H0₅**: Urban population to share of total population has no significant effect on domestic credit to private sector in Sub-Saharan African countries. From the GLM result urban population to share of total population reported negative coefficient value of -0.010952nd a p-value of 0.8358. Since the p-value is greater than 5% significant level, the null hypothesis is accepted while the alternate hypothesis is rejected. This implies that URP has insignificant effect on DCPS.

4.4. Discussion of Results

Sequel to the regression results presented in the above tables, the individual results are presented below:

Mobile phones users (MTU) and domestic credit to private sector (DCPS) in Sub-Saharan African countries.

The Generalized Linear Model presented reported that MTU has a negative insignificant effect on DCPS in SSA countries. The policy implication of the negative result is that a unit change in MTU will result to decrease in DCPS of SSA countries by 0.9196. This further reveals that a reduction in mobile telephone users will result to lesser credit facilities to private sectors. Additionally, this

shows that mobile phones users has not contributed to DCPS in the sense that it has not help to save money, transaction costs and efficiency enhancement. This result is in line with the apriori expectation of negative relationship between mobile phones users and domestic credit to private sectors of SSA countries. Meanwhile, in terms of statistical significant, mobile phones users did not comply with the 5% level of significant. The coefficient and p-values is presented as -0.002797 and 0.9196 respectively. This evidence that the null hypothesis is accepted and the alternate is rejected. This findings is in line with the empirical studies of Emara and Mohieldin (2019) but contradict Asongu (2015), Bayar, Gavriltea and Paun (2021) and Owusu-Agyei, Okafor, Chijoke-Mgbame, Ohalehi and Hasan (2019).

Internet users (INT) and domestic credit to private sectors (DCPS) in Sub-Saharan African countries.

Arising from the results of the Generalized Linear Model result, it reveals that INT has positive significant effects on DCPS of SSA countries. The positive sign signify that a 1% increase in INT will leads to 0.119200 increase in DCPS of SSA countries. More so, this means internet usage helps to increase competition and lower prices for consumers and also increased productivity. This comply with apriori expectation stated above. Meanwhile, in terms of statistically significant, INT comply with 5% level of significant (0.0389). This shows that the null hypothesis is rejected and alternate is accepted. This findings is in line with Ofori, Osei and Alagidede (2022), Dzator, Acheampong, Appiah-Otoo and Dzator (2021) and not consistent with the findings of Emara and Mohieldin (2019)

Fixed broadband (FBOB) and domestic credit to private sector (DCPS) in Sub-Saharan African countries.

Arising from the results of the Generalized Linear Model result FBOB has positive significant effects on DCPS of SSA countries. The positive sign signify that a 1% increase in FBOB will leads to 1.349844 increase in DCPS of SSA countries. Furthermore, this means that fixed broadband has enhanced connectivity of business and individuals by ensuring high quality transmission technology. This comply with apriori expectation stated above. Meanwhile, in terms of statistically significant, FBOB comply with 5% level of significant (0.0000). This shows that the null hypothesis is rejected and alternate is accepted. This findings is consistent with the findings of Bahrini and Qaffas (2019), Ofori, Osei and Alagidede (2022) but contradicts Asongu and Nwachukwu (2017).

Fixed telephone subscriptions (FTS) and domestic credit to private sector (DCPS) in Sub-Saharan African countries.

Arising from the results of the Generalized Linear Model result FTS has positive significant effects on DCPS of SSA countries. The positive sign signify that a 1% increase in FTS will leads to 2.23E-05 increase in DCPS of SSA countries. This further means that fixed telephone subscriptions aids facilitate communication, enhanced easy access to financial services and support business operations. This comply with apriori expectation stated above. Meanwhile, in terms of statistically significant, FTS comply with 5% level of significant (0.0000). This shows that the null hypothesis is rejected and alternate is accepted. This findings is in line with Alhassan, Guryanov and Kovadio

(2021), Ejemeyovwi, Osabuohien and Bolawale (2021) but contrast the findings of Asongu and Nwachukwu (2017).

Urban population to share of total population (URP) and domestic credit to private sector (DCPS) in Sub-Saharan African countries.

The Generalized Linear Model result URP has a negative insignificant effect on DCPS in SSA countries. The policy implication of the negative result is that a unit change in URP will result to decrease in DCPS of SSA countries by 0.8358. This further reveals that a reduction in urban population will result to lesser credit facilities to private sectors. This result is in line with the apriori expectation of negative relationship between mobile phones users and domestic credit to private sectors of SSA countries. Meanwhile, in terms of statistical significant, mobile phones users did not comply with the 5% level of significant. The coefficient and p-values is presented as -0.010952 and 0.8358 respectively. This evidence that the null hypothesis is accepted and the alternate is rejected. This findings is in line with the outcomes of Emara and Mohieldin (2019) but contradict Asongu (2015), Bayar, Gavriltea and Paun (2021) and Owusu-Agyei, Okafor, Chijoke-Mgbame, Ohalehi and Hasan (2019).

V. SUMMARY, CONCLUSION, AND RECOMMENDATIONS

Summary of Findings

In line with the Generalized Linear Methods result presented in section four the following are the major findings of this study. Mobile phones users affirms negative insignificant effect on domestic credit to private sectors of SSA countries; Internet users affirms positive significant effect on domestic credit to private sectors of SSA countries; Fixed broadband affirms positive significant effect on domestic credit to private sectors of SSA countries; Fixed telephones subscriptions affirms positive significant effect on domestic credit to private sectors of SSA countries; Urban population affirms negative insignificant effect on domestic credit to private sectors of SSA countries

Conclusion

This study investigated the effect of technology and conditional financial development of SSA countries from 2013-2022. The exogenous variables of this study are mobile phones users, internet users, fixed broadband, fixed telephones subscriptions and urban population while the dependent variable is domestic credit to private sectors. Having subjected the model to series of analysis, the study patterned its findings after Generalized Linear Model. Based on the regression results, the study concluded that MTU, INT, FBOB, FTS and URP are important measures of conditional financial development proxy by DCPS of SSA countries.

Policy Recommendations

In line with the major findings above, the following policy recommendations were made: The study recommends that SSA countries should expand the use of mobile phones users so as to eliminate or reduce to the barest minimum of negative insignificant effect on DCPS. The Federal Ministry of Communications and Digital Economy (FMCDE) sensitize the populace on the importance of urban population and mobile phones uses. To continue to have positive significant effect, FMCDE should create more easy access to fixed broadband to SSA countries. The study

also recommends that SSA countries should encourage migration of people from villages to urban areas so as to advance the economy. SSA countries should create more avenues to fixed telephone subscriptions, in order to reach or assist the financially vulnerable individuals.

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