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Inclusive Finance and Agricultural Growth in Sub-Saharan African Countries

Vangvaidi Albert [α], Dazoue Dongue Guy Paulin [σ] & Gramtya Djidda Lazare [ρ]

Abstract- This article aims to determine the effect of inclusive finance on agricultural growth in sub-Saharan Africa. Using dynamic panel data from 31 SSA countries over the period from 2004 to 2020 and using the SYS-GMM of Blundell and Bond (1998) as an estimation technique, we determined the effect of finance inclusive on agricultural growth in sub-Saharan Africa. Overall, the results show that access to and use of financial services have negative effects on agricultural growth in Sub-Saharan Africa. We have issued some recommendations aimed at cleaning up the financial sector by putting in place infrastructures and reducing related transaction costs and facilitating access to credit, and even reforming the agrarian system in some of these countries.

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Introduction

Financial inclusion today offers many opportunities to provide solutions to the many problems faced by people living of agriculture in underdeveloped countries, in this case those in Sub-Saharan Africa. Indeed, the ability of African countries to effectively combat poverty and inequality is currently limited by declining economic growth, reduced fiscal room for budgetary maneuver, increasing debt, sharp variations in the prices of basic commodities and tighter global financial conditions (UNECA, 2023). Furthermore, the majority of poor and vulnerable populations (i.e. at risk of falling into poverty or, if in poverty, falling into a poverty trap) in sub-Saharan Africa are rural and depend directly (through production) or indirectly (through the agricultural labour market and processing activities) on agricultural production (including livestock, fisheries and forest products) as sources of food security and income (De Janvry and Sadoulet, 2023). However, the development of inclusive financial services focuses mainly on credit tailored to the needs of target populations or particular sectors of activity, for example for agricultural and forestry activities and for environmentally-friendly practices such as access to clean energy and sanitation (ADA, 2022).

Thus, from the thinking of the Physiocrats to the writings of contemporary 20th-century economists, the agricultural sector remains a very important sector on which any economic departure must be based (Napo, 2019). Agriculture has long been recognized as a determining factor in the well-being of populations, especially in rural areas. The World Bank (2017) points out that more than 80% of the rural population lives from agriculture, which is their main source of income. As a result, agriculture is now back at the center of concerns for global economies in general and Sub-Saharan African countries in particular, and one of the issues being debated in the economic literature relates to agricultural financing through financial inclusion. Numerous authors believe that the benefits of an inclusive financial system include lower capital costs, the efficient allocation of productive resources, the decline of informal sources of credit and the expansion of day-to-day financial management (Evans and Adeoye, 2016; Evans and Lawanson, 2017; Akpa et al., 2020).

Several schools of thought have analyzed the nature of the relationship between inclusive finance and agricultural growth in different ways. Over the years, these schools of thought have clashed through different currents of economic thought. From a theoretical point of view, Keynesian models of financing policy for the rural economy relied on state intervention and gave priority to the agricultural credit function. For these models, rural and agricultural underdevelopment is the result of the inability of poor peasant farmers to save and provide finance for their activities. These Keynesian theories emphasized public credit as a necessary instrument for financing innovation and the development of agricultural production. On the other hand, neoclassical economists, such as Gurley and Shaw (1967) and Mac Kinnon (1973), made theoretical criticisms of Keynesian financing policies based on state intervention. Neoclassical economists advocated a policy of liberalizing the financial system. For these economists, the objective was not to inject credit into the agricultural sector but to create a market that would bring together agents with financing needs and agents with financing capacities.

This longstanding theoretical dissonance has remained relevant empirically in numerous studies, yielding somewhat mixed results. Abundant research highlights the positive effects of financial inclusion on agricultural growth (Obilor, 2013; Evans, 2018; Agbenyo et *al*., 2019; Fowowé, 2020). However, Akpa et *al*. (2020) estimate that financial inclusion rates in the Beninese economy are still quite low to significantly improve the

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incomes of rural farmers. They emphasize in their literature review that certain case studies have not confirmed the positive impact of inclusive finance on agricultural growth. For instance, Izhar and Tariq's (2009) study during the post-reform period in India showed that institutional credit did not have a significant impact on agricultural production. Similarly, studies by Banerjee et *al*. (2014) in India and Karlan and Zinman (2009) in the Philippines demonstrated that microcredit did not significantly affect the incidence of income-enhancing productive activities.

In addition to these controversies, it should be noted that studies that have shown a positive effect between financial inclusion and agricultural growth have been supported by microeconomic data from predominantly rural areas. The stylized facts from numerous studies also point out that the level of financial inclusion in African countries is one of the lowest compared to the global average. The cases of India before the agrarian system reforms and the Philippines are illustrative in more ways than one. This finding is even more alarming in Sub-Saharan African countries, which have many shortcomings in terms of acceptable financial inclusion necessary for improving the well-being of the population and reducing the pervasive poverty that afflicts most of these countries. Thus, according to the World Bank (2014), more than half of the adult population in developing countries lacks access to financial services, and only 41% of adults have accounts in formal institutions compared to 90% in developed countries. In the process, it estimated that the banking rate in Sub-Saharan Africa is below the global average; at 23% in 2011, 34% in 2014, and 43% in 2017 (World Bank, 2018). This indeed shows that financial inclusion seems to have progressed in Sub-Saharan Africa, but its impact on agricultural growth remains controversial. However, a developed financial sector is an essential component of an economy (Akpa et *al.,* 2020). Also, it must be remembered that the agricultural sector is essential for the development of Sub-Saharan African countries.

The primary interest of this study is to contribute to a current controversy and to enhance the review of both theoretical and empirical literature on the effect of inclusive finance on agricultural growth in Sub-Saharan African countries. Since most studies have focused on examining the effect of inclusive finance on agricultural growth using microeconomic data, and few have used macroeconomic data, our research adds value to the existing literature by analyzing the effect of inclusive finance on agricultural growth in Sub-Saharan Africa.

To address this issue, we intend to structure this paper as follows: First, we will present a literature review. Second, we will describe the theoretical framework and the empirical analysis method. Third, we will present the main results of the econometric analysis and their interpretations. Finally, we will conclude by suggesting some economic policy proposals to adopt for financial inclusion that benefits the poor populations like those in our study sample.

I. Theoretical and Empirical Literature Review: Controversial and Mixed Results

Inclusive finance or financial inclusion is a multidimensional concept. It lacks a stable and universally recognized definition in the significant economic literature. However, it can be understood as the availability and the possibility of access to a range of financial products and services by economic agents who are sometimes excluded from official channels; including current and savings accounts, fiduciary payment and fund transfer services, insurance and reinsurance services, economic financing and credit services, but also equally. However, it can be understood as the availability and the possibility of access to the use of a range of financial products and services by economic agents who are sometimes in one way or another excluded from official channels; including current and savings accounts, fiduciary payment and fund transfer services, insurance and reinsurance services, financing services for the economy and credit, but also services related to financial innovation, at more suitable costs and competitive prices. Thus, it is approached in two different ways: depending on whether one positions oneself on the demand side, or the supply side. From the demand perspective, Sarma and Pais (2011) define inclusive finance as access, use, and availability of financial services at lower costs for low-income individuals. Klapper and Singer (2014), on the other hand, define financial inclusion as not only access but the use of appropriate, accessible, and affordable financial services. Conversely, Sethy (2016) equates financial inclusion from the supply approach as access to insurance, savings, and banking risk by low-income individuals. Regardless of the approach used to define financial inclusion, it is certain that in Sub-Saharan Africa, access to financial services has always been a problem faced by the populations living there, most of whom are in rural areas. Yet, the agricultural sector is one of the most dependent on credit, as it allows not only the purchase of agricultural inputs but also the hiring of labor (Nathan, 2015).

Many authors around the world have analyzed the effect of financial inclusion on agricultural growth and have come to contradictory conclusions, while others have found rather mixed results. Some have found that financial inclusion has a positive effect on agricultural growth. This was demonstrated by Fowowe (2020) who conducted an empirical survey on the effect of financial inclusion on agricultural productivity in Nigeria, using integrated surveys on farmers. The results

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of this analysis show that financial inclusion, regardless of how it is measured, has positive and statistically significant effects on agricultural productivity in Nigeria. These findings were also supported by the work of Usman Farooq et *al.* (2020), who analyzed the context of Pakistan for the period from 1960 to 2018, using methods such as "ARDL" (Autoregressive Distributed Lag), the "DOLS" (Dynamic Ordinary Least Squares) method, and the dynamic ordinary least squares method. Their study's results show that in the short and long term, broad money has a positive effect on agricultural growth. Agbenyo et *al.* (2019) examined the relationship between financial inclusion and agricultural growth in Ghana, using the Co-integration method on time series data for the period from 1980 to 2014. The results of this analysis show that financial inclusion positively affects agricultural growth. More clearly, financial inclusion contributes to the development of the agricultural sector in Ghana.

Victor et *al*. (2019) analyzed the influence of financing on the agricultural sector in Nigeria for the period from 1981 to 2016. The study variables were agricultural Gross Domestic Product (GDP), public financing, the agricultural credit guarantee scheme fund, and the credit, loans, and advances granted by commercial banks to the agricultural sector. Using an "ARDL" regression model to assess the data properties, the results of this study indeed show that government financing of agriculture and the agricultural credit guarantee scheme fund have a non-significant impact. However, the advances and loans from commercial banks to the agricultural sector have a positive and substantial influence on agriculture's contribution to GDP.

Afrin et *al*. (2017) analyzed the impact of financial inclusion on the technical efficiency of Paddy frames in the Bangladesh region, using a sampling technique and combining conventional regression models with least squares and quantile to highlight the existing link between technical efficiency and financial inclusion among 120 agricultural producers in this locality. The results of this study show that financial inclusion through different sources of credit has a positive and significant effect on technical efficiency, but the variations in the sources chosen to access credit have a non-significant impact. Olaniya (2017) analyzed the relationship between financial inclusion and agricultural growth, using the "ARDL" boundary test technique to find the link between financial inclusion and agricultural growth for the period from 1981 to 2014. The results of this study show that financial inclusion has a significant short and long-term influence on agriculture through procedures and the use of financial services. In the same vein, Chandio et al. (2016a) analyzed Pakistan's public spending in the agricultural sector and economic growth over the period from 1983 to 2011. The variables of this study included, among others, government spending on agriculture, agricultural production, and GDP. The techniques used in this study are: the ARDL test, Johansen's Co-integration test, and ordinary least squares. The results of this analysis show the existence of a long-term relationship between public spending on agriculture, financial inclusion, and agricultural growth.

On the other hand, other authors have analyzed the effect of financial inclusion on agricultural growth and found that financial inclusion has a completely negative effect on agricultural growth. Usman Farooq et *al*. (2020) analyzed the short and long-term relationship between financial inclusion and agricultural growth in Pakistan for the period from 1960 to 2018. The techniques used are the ARDL approach, Johansen's Co-integration test, and the DOLS method. The results of the analysis show that financial inclusion, captured by domestic credit, has a negative effect on agricultural growth in Pakistan. Festus et *al*. (2019) analyzed the link between agricultural goods produced and financial inclusion for the period from 1986 to 2017. The techniques used are the Engle-Granger test and the error correction test. The study variables were the following: the guarantee system fund, agricultural credit, a rural sight deposit, and a savings account, bank lending to small businesses. The results of this study indicate that financial inclusion has an insignificant influence on agricultural production in Nigeria. These findings are supported by Igyo et *al*. (2016), who also conducted a study on monetary intermediation and agricultural production in Nigeria, using time series data for the period from 1981 to 2014. The technique used is that of the Ordinary Least Squares (OLS) method. The study's results show that the loan rate of money from deposits, bank deposits, has a negative and insignificant effect on agricultural production in Nigeria.

Furthermore, Izhar and Tariq (2009) also analyzed the impact of institutional credit on agricultural production in India, using the Cobb-Douglas production function for the pre-reform period (1972-1991) and post-reform (1992-2005) in India, using chronological data. The results of this study show that the agricultural sector has declined and the growth rate of agricultural credit has also deteriorated. Indeed, the results show that during the post-reform period, institutional credit is not a significant determinant of agricultural production in India. These findings are also supported by Banerjee et *al*. (2014), who analyzed the impact of microcredit in India, and Karlan and Zinman (2009) in the Philippines. The results of their studies show that microcredit does not have a positive and significant impact on the incidence of productive activities that can increase farmers' income. Following this review of studies whose results do not settle the debate, it would be appropriate to present the methodology specific to our study.

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II. Methodological Approach of the Study

To achieve the objective of our study on financial inclusion and agricultural growth in Sub-Saharan African countries, we will first present the conceptual and theoretical framework of the study (3.1), followed by the estimation technique used and the variables of interest for the study (3.2).

a) Conceptual and Theoretical Framework of the Study: Model Specification

The extensive literature review stated above shows that several authors have been interested in the nature of the relationship between financial inclusion and agricultural growth (Usman et *al*. (2020), Agbenyo (2019), Akpa et *al.* (2019), etc.). In this part, we will highlight the mechanism by which financial inclusion affects agricultural growth. As pointed out by Nathan Associates (2015), financial inclusion contributes to agricultural growth in three different ways: (i) financial inclusion can stimulate agricultural productivity through the granting of credit which facilitates the purchase of inputs and the hiring of labor and machinery, thus helping to maintain the crop cycle even after harvest; (ii) secondly, financing facilitates the diversification of means of subsistence and the increase of farmers' incomes; and (iii) thirdly, financial inclusion helps to promote resilience and avoid the poverty trap. In short, being financially inclusive means having access to and use of financial services (Evans, 2017)). Financial inclusion allows individuals with low incomes to have access to and use financial services at low costs, which enables them to purchase agricultural inputs, hire labor, and rent machinery. Once all these elements are combined, they directly affect agricultural production and subsequently agricultural growth.

In the context of this work, we have chosen the Cobb-Douglas production function because it theoretically demonstrates the interdependence between production factors (Akpa et *al*. (2019)), and this model is also used in the literature review as was the case in the recent work of Akpa et *al*. (2019), and Napo (2019). By specifying this Cobb-Douglas production function, we obtain the following equation (1):

$$Y_{it} = A_{it}\ K_{it}^{\alpha} L_{it}^{\beta} X_{it}^{1-\alpha-\beta}\, e^{uit} \qquad (1)$$

Where (Yit) is the total production of the agricultural sector for country i at time t, (K) represents the capital factor used in production, (L) the labor factor used in production, (A) the technology of production, and (X) represents other production factors that may explain agricultural production, (U) represents the unmeasurable determinants of growth, e is the base of the natural logarithm. The power associated with each production factor (α, β, δ) is a number between 0 and 1.

The specification of the Cobb-Douglas production model for estimates with data takes the form of the following equation:

$$lnY_{it} = lnA_{it} + lnK_{it} + lnL_{it}\ (1-\alpha-\beta)\ lnX_{it} + U_{it} \qquad (2)$$

The specification of the Cobb-Douglas production function in the context of our estimation for panel data concerning Sub-Saharan African countries and by linearizing equation (2), we obtain equation (3) which explicates the effect of financial inclusion on agricultural growth as follows:

$$lnProd_{it} = \beta_0 + \beta_1 lnProd_{it-1} + \beta_2 lnACCES_{it} + \beta_3 lnUSAGE_{it} + \beta_4 lnTAB_{it} + \beta_5 lnVAI_{it} + \beta_6 lnPIBT_{it} + \beta_7 lnINF_{it} + \varepsilon_{it} \qquad (3)$$

b) Estimation Technique and Study Interest Variables

In order to estimate our model described in equation (3), we will use the Generalized Method of Moments (GMM) system by Blundell and Bond (1998). We are using this method because it offers a number of advantages. Firstly, it addresses the issue of endogeneity which helps to reduce sampling bias; secondly, it increases the accuracy of forecasts. It should also be noted that this technique is robust as it uses the lagged endogenous variable as an instrument, hence the coefficient must always be convergent, that is, less than 1.

This study focuses on a dynamic panel consisting of 31 Sub-Saharan African countries, for the period from 2004 to 2020. The exclusion of certain Sub-Saharan African countries is justified by the absence of data. Moreover, the choice of the period starting from 2004 is justified by the fact that before 2004, there were no data on inclusive finance for Sub-Saharan African countries. This study uses secondary data sources from two main sources, namely the WDI (2020) and the IMF's FAS.

Table 1: List of the Study's Variables of Interest

Variables	Description	Sources
ACCESS	Number of deposits with commercial banks per 1000 adults	FAS
USAGE	Credits granted to private sectors	FAS
TAB	Arable land (cultivable land)	WDI
VAI	Industrial added value	WDI
GDPH	Gross Domestic Product per capita	WDI
INF	Consumer Price Index	WDI
Prod	Total agricultural sector production including animal and plant production	WDI

Source: Authors

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III. Results of the Study and Discussions

In this section, we aim to first present the preliminary results (4.1) and secondly the final results and discussions (4.2).

a) Preliminary Results of the Study

We will first present the descriptive statistics (4.1.1), then the stationarity test (4.1.2), and finally the correlation matrix table (4.1.3).

i. *Descriptive Statistics of the Study*

The following Table 2 presents the result of the descriptive statistics analysis of the data using Stata.14

Table 2: Descriptive Statistics of the Sample

Variable	Observations	Mean	Standard Deviation	Minimum	Maximum
LnProd	527	2.653799	0.9339547	0.113509	4.021271
lnACCES	527	4.937577	1.258314	0.1565849	7.793484
lnUSAGE	527	2.953289	0.7319397	0.979566	5.268167
LnTAB	527	2.116596	1.354878	1.225952	3.886135
LnVAI	527	3.147668	0.4208332	2.091511	4.434965
LnPIBT	527	7.254745	1.029791	5.600855	9.740377
LnINFL	485	1.307453	1.066316	-3.206803	6.322927

Source: Authors from stata.14

Overall, the statistics of our sample show that the mean of the dependent variable is higher than its standard deviation, and there is also a small gap between the minimum and maximum.

The study of the mean and standard deviation allows us to draw two conclusions: first, the dependent variable, which is the total production, is relatively less dispersed in view of the proportionality between the mean and the standard deviation. Thus, the average level of total agricultural sector production would be around 2,653 with a deviation of 0.9339. Second, it is observed that the average level of access to and use of financial services is respectively 4.937 and 2.953 with respective dispersions of 1.258 and 0.7319.

ii. *Unit Root Test*

In order to test the reliability of the stationarity of the variables of this study, this research proposed to use three (03) types of unit root tests: the augmented Dickey-Fuller test (ADF), developed by Dickey and Fuller (1979); then the Philips Perron test (1988), which is a robust version of the Dickey-Fuller test; and finally the Im, Pesaran, and Shim (IPS) test.

The Following Table 3 Presents the Results of the Stationarity test of the Variables of this study.

Table 3: Stationarity Test

Variables	ADF-Fisher		PP-Fisher		IPS	
	Coefficient	p-value	Coeffient	P-Value	Coeffient	p-value
LnProd	128.9660	0.0000	116.3691	0.0000	-3.3142	0.0005
lnACCES	140.2347	0.0000	142.5529	0.0000	-4.2452	0.0000
lnUSAGE	82.3278	0.0431	88.7717	0.0145	-3.2883	0.0005
LnTAB	237.3377	0.0000	219.1327	0.0000	-	-
LnVAI	123.4734	0.0000	107.0634	0.0003	-4.7853	0.0000
LnPIBT	93.2282	0.0063	94.6623	0.0048	1.2296	0.8906
LnINFL	183.8835	0.0000	186.0833	0.0000	-6.7969	0.0000

Source: Authors from stata.14

The test results presented in Table 3 show that the p-values of the augmented Dickey-Fuller test and Phillips-Perron test are below 10%. Consequently, we reject the null hypothesis that admits a unit root. In other terms, our variables are stationary. Furthermore, the Im, Pesaran, and Shin (IPS) test indicates that the p-values are below 10% except for the Gross Domestic Product per capita. It can be observed that the Im, Pesaran, and Shin test could not decide on the stationarity of the arable land variable.

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iii. *Correlation Matrix of the Study Variables*

The following Table 4 represents the correlation matrix between the study variables.

Table 4: Correlation matrix

	lnProd	lnACCES	lnUSAGE	lnTAB	lnVAI	lnPIBT	lnINFL
LnProd	1.0000						
lnACCES	-0.4821	1.0000					
lnUSAGE	-0.2891	0.4988	1.0000				
LnTAB	0.4339	-0.2764	-0.1819	1.0000			
LnVAI	-0.5729	0.2184	0.0222	-0.3788	1.0000		
LnPIBT	-0.8544	0.5769	0.2580	-0.4212	0.4001	1.0000	
LnINFL	0.0481	0.0587	-0.0729	-0.0725	0.1284	-0.0171	1.0000

Source: Authors from stata.14

According to Table 4 above from the correlation matrix, there is a negative correlation between agricultural production and access to financial services, captured by the number of deposits at commercial banks per 1000 adults and the use of financial services captured by credit granted to the private sector. This prevailing result allows us to draw a partial conclusion that Sub-Saharan African countries have a low level of financial inclusion, which does not allow for a positive impact on agricultural growth. This aligns with findings by certain authors, specifically Akpa et al. (2020), which we have chosen to present in the literature review.

b) Definitive Results of the Study and Discussions

Table 7 below presents the results of the effect of inclusive finance on agricultural growth in Sub-Saharan Africa.

The results of the diagnostic test show that our model is well specified and that the chosen instruments are validated. Indeed, our study rejects the presence of second-order autocorrelation (02) and accepts first-order autocorrelation (01). Moreover, the number of instruments is less than the number of countries. The Hansen test shows that the probability associated with the Hansen test is statistically insignificant, which allows for the validation of the selected instruments.

Table 5: Estimation of the Effect of Inclusive Finance on Agricultural Growth in SSA

Variables	Dependent	Total Production of the Agricultural Sector		
	(1)	(2)		
lnProd-1	0.941***	0.931***		
	(0.0147)	(0.0127)		
lnACCES	**-0.0104****			
	(0.00466)			
lnUSAGE		**-0.0171*****		
		(0.00541)		
LnTAB	0.00138	0.00310		
	(0.00441)	(0.00386)		
LnVAI	-0.0513***	-0.0722***		
	(0.0106)	(0.0112)		
LnPIBT	-0.0223*	-0.0353***		
	(0.0118)	(0.0116)		
LnINFL	0.00881*	0.00998**		
	(0.00445)	(0.00464)		
Constant	0.514***	0.699***		

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	(0.154)	(0.131)		
Observations	398	369		
Number of countries	31	31		
AR(1)	0.000475	0.000545		
AR(2)	0.294	0.187		
Instruments	19	25		
Hansen	0.110	0.252		
Significance:		**** p<0.01, ** p<0.05, * p<0.1*		

Source: Authors estimate from stata.14

Looking at column (1), we see that the coefficient associated with the Access variable is negative and significant at the 5% level. This result shows that access to financial services reduces agricultural growth in sub-Saharan Africa. The coefficient for access to financial services is 0.00305, suggesting that a 10% increase in access to financial services reduces agricultural growth by 0.0305%. This result can be explained by the fact that access to financial services in sub-Saharan Africa is very complex, with very high transaction costs and fees linked to vicious circles of corruption in some countries, which does not encourage agricultural production. In addition, a high cost of access that worsens household incomes in general and agricultural producers generally face low agricultural credit allocated by financial development institutions, and even reduced arable land often does not play in favour of farmers therefore it reduces agricultural production. This result is consistent with the work of Evans (2017). And, it contradicts the work of Agbenyo, Jiang and Antony (2019) who showed in Ghana that access to financial services has a positive and significant effect on agricultural production.

In column (2), we observe that the coefficient associated with the usage variable is negative and significant at the 1% level. This result shows that the use of financial services in sub-Saharan Africa reduces agricultural growth. This result shows that a 10% increase in the use of financial services reduces agricultural growth by 0.171%. This result can be explained by the fact that the use of financial services in sub-Saharan Africa is accompanied by high costs, which do not allow agricultural producers to achieve financial autonomy. This result corroborates the work of Usman et *al*. (2020) and Agbenyo et *al*. (2019), who have shown in Pakistan and Ghana respectively that credit granted to the private sector has a negative effect on agricultural production. They contradict the work of Das et *al.* (2009) and Acha (2012) who showed in India that the use of financial services has a positive effect on agricultural growth.

When we introduce the control variables, notably arable land, we find that it has a non-significant effect on agricultural growth. On the other hand, the sign associated with the variables access and use always remains negative. Looking at the industrial value added variable, we find that it has a negative effect on agricultural growth at the 1% threshold. This result can be explained by the fact that the development of industries is accompanied by an increase in the workforce in the industrial sector to the detriment of the workforce in the agricultural sector, and even by the fact that the low revenues generated by the development of industry are not reinvested or simply benefit agricultural producers. This result contradicts the work of Abbas Ali (2020), who shows instead that industrial value added contributes to the increase in agricultural production.

If we consider the variable Gross Domestic Product per capita, we see that it negatively affects agricultural growth in sub-Saharan Africa. This result can be explained by the low level of per capita income, which prevents producers from financing their agricultural production. This result contrasts with the work of Evans (2017), which shows that per capita Gross Domestic Product increases agricultural growth. Finally, the inflation variable is found to have a positive and significant effect on agricultural growth at the 10 and 5% thresholds. This result can be explained by the fact that higher prices for agricultural products encourage producers to produce more in order to take advantage of these higher prices and maximize profits. This result is consistent with the work of Agbenyo et *al.* (2019), who show that inflation positively affects agricultural production.

IV. Conclusion and Recommandations

The effects of inclusive finance on agricultural growth are the focus of a large body of work, which often fails to reach common conclusions. The aim of this research is to determine the effect of inclusive finance on agricultural growth. The econometric analyses are based on a dynamic panel of 31 sub-Saharan African countries, covering the period from 2004 to 2020. The results of the analyses show that inclusive finance through access to and use of financial services has a negative impact on agricultural growth in sub-Saharan Africa, when the data is aggregated. However, this result can be positive if we take the countries individually.

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In order to remedy the imperfections of inclusive finance on agricultural growth in Sub-Saharan Africa; and in order to reach the threshold for which inclusive finance will positively impact agricultural growth, we recommend the implementation of public policies aimed at strengthening the financial sector and its adjuvants. Firstly, focus on the development of technological infrastructures to facilitate access and lower the cost of using financial services in sub-Saharan Africa. Secondly, the agricultural finance sector needs to be cleaned up, by reducing the transaction costs associated with services that are often very high, and by combating the perverse effects of agricultural credit (such as corruption in the sector and easier access to the market for inputs and skilled labor), which affect almost all productive activities in this part of the region. Thirdly, a system needs to be put in place to facilitate access to financial services, and to monitor the effective use of agricultural credit (since in some known cases, agricultural credit is sometimes used to perform other expedient tasks, to the detriment of the main activity). Fourthly, initiate agrarian reform, as was the case in India, to boost agriculture in these countries through incentives and corrective measures.

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