Financial inclusion in the Economic and Monetary Community of Central Africa: Analysis of its effects on the standard of living

ABSTRACT:

Aims: This study aims to examines the effects of financial inclusion on living standards as measured by per capita income and consumption in CEMAC countries. According to World Bank (2022) financial inclusion rate capted by the possession of mobile money for example is passed to 12% at 21%. We see an augmentation but the rate remains low.

Location and Duration of theStudy: The paper uses a sample of 6 CEMAC countries from different sources for the period 2004-2017 to carry out the analysis.

Methodology: Using Generalized Method of Moments (GMM), we identify the causal relationship between financial inclusion and living standards, showing that the latter has a positive and significant effect on per capita income and consumption in the CEMAC region. To consolidate these findings, we subject our results to a robustness test using the generalised equation estimation (GEE) method, whichconfirms the beneficial effect of financial inclusion on living standards in the CEMAC zone.

Results: These results highlight the importance of implementing incentive policies aimed at reducing barriers to access to banking services, in order to enable low-income individuals to benefit from these services and thus improve their quality of life.In addition inclusion of the policy implications of the results, including requirements for governance reforms and improved banking access could further strengthen the relationship between financial inclusion and standards living.

***Keywords**: Financial inclusion - Standard of living - CEMAC - Banking services.*

1. INTRODUCTION

Over the past decade, financial inclusion has received increasing attention from researchers and policymakers. The Sustainable Development Goals (SDGs) proposed by the United Nations refer to financial inclusion as a support mechanism for inclusive economic growth (Jahan et al., 2019).In essence, financial inclusion is generally considered to be the proportion of the population that has access to and uses formal financial services. In this context, research and policy attention has focused on who is socially excluded from the financial system and how strategies can be designed to enable "unbanked" segments of the population to increase their population in the financial system. The development of financial inclusion can benefit the poor through various channels, including the ability to accumulate savings and access credit allowing them to smooth their consumption, better manage financial risks to cope with uncertainties and invest in productive assets (Demirgüç-Kuntet al., 2018).

The concept of financial inclusion has emerged as a critical factor influencing economic growth, poverty reduction and overall societal well-being. Within the Central African Economic and Monetary Community (CEMAC), a regional economic organisation comprising six member countries, the pursuit of financial inclusion is of particular importance. Much of the empirical literature exploring the potential benefits of financial inclusion on

development outcomes has focused on economic growth, poverty and income inequality, with research generally demonstrating the positive effects of financial inclusion. However, there is a lack of empirical literature examining the impact of financial inclusion on other important development outcomes. Accordingly, one of the main objectives of this paper is to broaden the range of development outcomes analysed by examining the impact of financial inclusion on living standards as measured by income and consumption. This is particularly important from a policy perspective because the impact of financial inclusion on some economic development outcomes may be stronger than others, which may vary across regions depending on their demographic and institutional characteristics.

Ultimately, this paper seeks to contribute to the existing body of knowledge by providing insights into the impact of financial inclusion and living standards in the CEMAC region. We use data from the World Development Indicators (WDI) and Worldwide Governance Indicators (WGI) over the period 2004-2017 and employ two estimation methods. First, we use dynamic panel estimation (DPE) and the results show that financial inclusion has a positive and significant impact on living standards, as measured by per capita income and consumption, in the CEMAC. The results show that access to a bank branch, deposits and credit leads to an increase in income and consumption. This paper is unique in that it considers multiple dimensions of financial inclusion. As the global community increasingly recognises the importance of inclusive economic growth, this research aims to inform policymakers and stakeholders on possible ways to promote financial inclusion and thereby improve the overall well-being of the population in the CEMAC countries.

The theoretical underpinnings of the link between financial inclusion and welfare are based on the idea that a formal account opened with a financial institution, which serves as a store of value, allows households to accumulate funds to invest in income-generating activities such as microenterprises, purchase inputs or intermediate products, invest in education, plan for retirement, and manage unanticipated potential (Radcliffe and Voorhies, 2012). A formal account held by a household to save or secure capital is a safe place to keep money away from their usual activity (or home) to avoid impulse spending. Today we talk a lot about electronic payments as technology advances. Ehrbeck et al (2010) list the benefits of the electronic payment system apart from time and cost savings. This electronic payment system helps to increase sales, reduces transaction costs and provides a reliable link between government, employers, employees and families for the direct payment of social benefits, wages and remittances to friends and families abroad, all with the aim of improving well-being.

On the empirical front, Outreville (1999) examines the relationship between the level of financial development and socio-economic variables reflecting different levels of development in the light of the literature on the role of human capital in the economic development process. The empirical results, based on a cross-sectional analysis of 57 developing countries, suggest that human capital and socio-political stability are important factors in explaining the level of financial development in these markets. Second, studies on the impact of human capital (Hakeem and Oluitan, 2012; Evans et al, 2002) show that financial development is at least as important as human capital in the growth process.

The process of financial inclusion strengthens the process of human development. Indeed, there is bidirectional causality between financial inclusion and human development; one leads to the other and vice versa. Giri (2014) finds causality from financial development to human development, and Ivanic et al. (2012) find causality between financial indicators and human capital, except for credit to the private sector, but not vice versa. Similarly, the analysis of Ozcan and Kiliç (2018) shows the existence of a positive relationship between financial development and human capital in emerging economies. Financial inclusion is an attempt to bring the weak and vulnerable in society into the midst of the organised financial system. An inclusive financial system would certainly increase efficiency and welfare by providing avenues for safe and secure savings practices and by facilitating a full range of effective financial services. According to Beck et al (2007), financial inclusion reduces income inequality and alleviates poverty. Of course, the lower the level of poverty, the higher the level of human development.

Banerjee et al (2021) show that the social and especially financial inclusion of the poor not only allows them to stabilise and develop, but also to start or develop an income-generating activity. In the same vein, authors such as Macharia and Attoumane (2005), Khandker (2005) in their work consider that microfinance has a positive impact on income; in other words, the evolution or development of the microfinance sector has a positive impact on improving people's living conditions. Abdelkhalek (2006) goes further and examines the merits of financing small and micro projects in the fight against poverty. Using a statistical approach, he concludes that MFIs contribute to poverty reduction because they finance household activities and then create jobs and increase the income of the poor.

More recently, Addury (2018)examines the influence of financial inclusion, measured as the amount of credit and deposits/investments, on income, consumption expenditure, and living facilities of the household. The results of the panel data regression show a significant effect of the amount of credit on household income and consumption expenditures. But the effect on household residence facilities is not significant. Applying matching methods, N'dri and Kakinaka (2020) analyze the effects of financial inclusion and mobile money use on an individual's nonmonetary welfare. They conclude that access to financial services by the household through mobile money has a significant impact on poverty alleviation. Still, to enrich the scarce literature on the link between financial inclusion and welfare, this paper analyzes this relationship while considering several dimensions of financial inclusion on income and consumption.

The remainder of tMore recently, Addury (2018) examines the impact of financial inclusion, measured as the amount of credit and deposits/investments, on household income, consumption expenditures and housing. The results of the panel data regression show a significant effect of the amount of credit on household income and consumption expenditure. However, the effect on household housing is not significant. Using matching methods, N'dri and Kakinaka (2020) analyse the impact of financial inclusion and the use of mobile money on the non-monetary welfare of individuals. They find that household access to financial services through mobile money has a significant impact on poverty reduction. However, in order to enrich the scarce literature on the link between financial inclusion and welfare, this paper analyses this relationship by considering several dimensions of financial inclusion on income and consumption.

The rest of the paper is structured as follows. Section 2 presents the data and methodology used, while section 3 presents the results. Section 4 concludes the paper.

2. METHODOLOGY

This study considers a linear model using the Generalized Method of Moments (GMM) proposed by Blundell and Bond (1998)to address the issue of causality that may exist between financial inclusion and standard of living[1]. For example, countries experiencing strong economic growth may experience an increase in financial inclusion. Higher economic growth leads to higher living standards, reduced poverty, better access and greater use of financial products.

To analyze the effects of financial inclusion on the standard of living, the following equation is estimated by the GMM dynamic panel method and the generalized equation estimation method.

Thus, the general model can be specified as follows:

$$y_{ct} = X_{ct} + Z_{ct} + \varepsilon_{ct} \quad (1)$$

with $y_{ct}$the group of variables encompassing the standard of living indicators (consumption and income) of country *c* at the period *t* considered. $X_{ct}$and $Z_{ct}$are respectively the groups of variables defined by the financial inclusion indicators and the control variables at period t. ε *is* the error term.

Several studies have shown that financial inclusion follows a dynamic process (Oyelami and Ogundipe, 2020; Tchoffo et al., 2020). Therefore, taking into account the dynamism based on recent developments in financial instruments remains interesting. This manoeuvre allows us to capture the different transmission channels through which financial inclusion affects the standard of living of populations in the CEMAC zone. The empirical model can be specified as follows:

$$Y_{ct} = \alpha_0 + \lambda Y_{ct-1} + \delta FI_{ct} + \gamma Z_{ct} + \varepsilon_{ct} \quad (2)$$

where *Y*, the dependent variable, represents the standard of living for country ***c*** at time t. It is captured by income and consumption. $\boldsymbol{FI_{ct}}$represents the financial inclusion of a country ***c*** at time ***t*** and includes the dimensions of access, availability, and use$\boldsymbol{Z_{ct}}$a vector of control variables defined below and summarized in table 6 in the appendix and $\boldsymbol{\varepsilon_{ct}}$the error term.

Gdp: Annual Average per capita income (Annual Gross Domestic Product/Population).

[1] We also performed generalized equation method (GEE panel) regressions as a robustness check and find that the results are qualitatively similar.

GDP at purchaser's prices is the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products. It is calculated without making deductions for depreciation of fabricated assets or for depletion and degradation of natural resources. It is in current local currency and it is transformed in logarithm.

Depcons: Final consumption expenditure (formerly total consumption) is the sum of household final consumption expenditure (private consumption) and general government final consumption expenditure (general government consumption). This estimate includes any statistical discrepancy in the use of resources relative to the supply of resources.

2.1 Explanatory and Control Variables

Based on the existing literature (Datta and Singh, 2019, Peria and Shin, 2020) and depending on the availability of data, the following variables are retained in this study.

FI is the dimensions of financial inclusion. The proxies used are:***Deposit****:* number of depositors in commercial banks per 1,000 adults;***Borrow****:* number of borrowers from commercial banks per 1,000 adults;***Branch*** :the number of bank branches per 100,000 adults.

$Z_{ct}$is the group of control variables supposed to influence the standard of living. It englobs:

GovEffthe quality of governance. It reflects the perception of the quality of services and the degree of its independence from political pressures, the quality of the formulation and implementation of policies, and the credibility of the government's commitment to these policies.The estimate gives the country's score on the aggregate indicator, in units of a standard normal distribution, i.e. ranging from -2.5 to 2.5. The highest scores are awarded to countries where the bureaucracy has the strength and expertise to govern without radical policy changes or disruption to public services when governments change.

FDI:foreign direct investment. It refers to direct investment equity flows in an economy. It is the sum of equity capital, reinvestment of earnings, and other capital.

AIDS: official development assistance.It refers to foreign official development assistance received by the country. It is in logarithm.

Mil-exp: military expenditureincludes all current and capital expenditures on the armed forces, including peacekeeping forces; defenseministries and other government agencies engaged in defense projects; paramilitary forces, if these are judged to be trained and equipped for military operations; and military space activities.

Pop-growth*:*population growth rate. Annual population growth rate for year t is the exponential rate of growth of midyear population from year ***t-1*** to ***t***, expressed as a percentage.

Infl*:*Inflation rate, as apercentage of GDP.

2.2 Source of data

The data used in this study come from the World Bank, in particular from the World Development Indicators (WDI) and Global Financial Development Database (GFDD) over the period from 2004 to 2017 in a sample of 6 CEMAC countries. The governance indicators are obtained from World Governance Indicators (WGI).

3. Results and interpretation

3.1 Descriptive statistics

Table 1 shows that the data are quite scattered for most of the variables. The standard deviations are quite large for most of the variables, indicating some heterogeneity in the data. For example, the variable "Borrowing" has a high standard deviation, which means that the amounts borrowed vary considerably from one country to another. The minimum and maximum values give an idea of the range of possible values for each variable. For example, for the variable "Deposits" we observe deposits ranging from 0.47 to 280.07.

The same applies to the variable 'Borrowing', which has a standard deviation of 47,038, which means that the values of 'Borrowing' vary considerably from one individual to another. On average, individuals borrowed 23,792 units. The amounts borrowed varied between 2 and 233,292 units. On average, individuals deposited 83,393 units. The amounts deposited ranged from 0.47 to 280.07 units. For the variable "Branch-bank" as the number of bank branches per inhabitant. A high standard deviation for this variable would indicate a large difference in the density of the banking network between the different countries. The table also shows that the average per capita income in the CEMAC countries is 2241684.4, with a minimum of 163047.77 and a maximum of 9576211.7.

Table 1:Descriptive statistics

Variables	Obs	Mean	Std. Dev.	Min	Max
Borrow	84	19.943	39.135	.2	233.292
Deposit	84	80.393	76.461	.47	280.07
Depcons	84	5.621	11.268	-40.868	53.51
Fdi	84	3.449	3.768	-4.846	16.758
Gdp	84	2241684.4	2534071.3	163047.77	9576211.7
GovEff	84	-1.259	.33	-1.879	-.606
Infl	84	6.208	12.227	-20.83	59.329
Mil exp	84	1.849	1.355	.656	7.956
Pop growth	84	3.118	.933	-.077	4.78
branch bank	84	2.513	3.359	.302	17.851
AIDS	84	3.423e+08	3.814e+08	519999.98	1.898e+09

Source: Authors' calculations based on data obtained from WDI, GFDD, and WGI.

After presenting the descriptive statistics, we'll move on to the econometric results.

3.2. Financial inclusion and standard of living

Sous-section 4.2 presents the empirical results for each of the specifications of financial inclusion outcomes measured by depositors in commercial banks per 1,000 adults (***Deposit)***, borrowers in commercial banks per 1,000 adults (***Borrow)*** and the number of banking branches per 100,000 adults (***Branch)***, on the standard of living, i.e. per capita income and consumption (***Gdpc, Depcons***) using generalize method of moments method.

3.2.1.Effect of financial inclusion on per capita income in CEMAC

Table 2 presented summarises the results of a multiple regression where the dependent variable is the natural logarithm of Gdpc (***lnGdpc***). The use of the Generalize method of moments that the authors sought to resolve potential endogeneity problems, i.e. situations where the explanatory variables are correlated with the error term, thereby biasing the coefficient estimates.

Theresulty show that the variable ***Borrow*** has a positive and significant effect on Gdpc. all else being equal, having access to ***Borrow*** a leads to an increase in per capita income. The positive and significant coefficient on "***Deposit***" suggests that an increase in domestic deposits has a positive effect on economic growth, even after controlling for other factors. This is in line with the economic intuition that greater availability of funds stimulates investment and consumption.

The positive and highly significant coefficient on branchbanking indicates that theexpansion of the banking network is associated with higher GDP growth. This could be explained by improved access to credit and financial services, thereby stimulatingeconomic activity. Thus, all else being equal, having access to a branch bank leads to an increase of 0.023% in per capita income. In fact, this result is explained by the fact that the holding of an account and the availability of bank branches allows it possible to maintain or improve the standard of living (Datta and Singh, 2019; Peria and Shin, 2020).

The analysis of the results reveals some interesting conclusions regarding the impact of financial variables on economic growth. As regards domestic deposits, their positive and significant coefficient clearly indicates that their increase stimulates economic growth. This result is in line with economic intuition: greater availability of funds encourages investment and consumption. Finally, the expansion of the banking network, measured by the number of branches, is strongly associated with higher GDP growth. This positive correlation can be explained by the fact that access to credit and financial servicesstimulateseconomic activity.

The governance in CEMAC ***(GovEff)*** is a boon to improving the standard of living of the populations. Indeed, governance has a positive and significant effect on income. This result can be explained by the fact that CEMAC countries are generally classified among the countries where bad governance is present in Africa. These results

corroborate those obtained by Boettke and Subrick (2003) according to which, rules of law improve human development in developed countries. The other variables (***Fdi, Infl***, etc.) appear to have similar effects to those observed in other studies, although the intensity and significance of these effects may vary.

Table 2: Effect of financial inclusion on per capita income in CEMAC

Variables	(1) lnGdp	(2) lnGdp	(3) lnGdp
Fdi	.038**	.031**	.03*
	(.018)	(.016)	(.017)
Borrow	.005***		
	(.002)		
GovEff	.874***	.293	.563**
	(.221)	(.225)	(.227)
Infl	.01*	.009*	.01**
	(.006)	(.005)	(.005)
Mil-exp	-.055	-.08*	-.07
	(.05)	(.044)	(.047)
Pop-growth	.525***	.51***	.536***
	(.084)	(.072)	(.078)
lnAids	-.379***	-.125**	-.309***
	(.047)	(.061)	(.048)
Deposit		.008***	
		(.001)	
Branch-bank			.105***
			(.023)
_cons	20.354***	14.414***	18.503***
	(1.093)	(1.456)	(1.152)
Observations	84	84	84
R-squared	.797	.845	.822

Source: Authors' calculations based on data obtained from WDI, GFDD, and WGI.
Standard errors are in parentheses
*** P<.01, ** P<.05, * P<.1*

3.2.2. Effect of financial inclusion on consumption in CEMAC

Table 3 presented reports the results of a multiple regression where the dependent variable is the dependent neperian logarithm of consumption (***lnDepcons***). The use of GMM method suggests that the authors sought to correct potential endogeneity problems associated with the explanatory variables, in particular those linked to credit (***Borrow, Deposit, branch-bank***).

The negative and highly significant coefficient on the ***'Borrow'*** variable suggests that an increase in debt is associated with a decrease in dependent consumption. This can be explained by the fact that higher debt reduces the purchasing power available for current consumption. The negative and weakly significant coefficient of the variable "***Deposit***" in model (2) could indicate an ambiguous effect of deposits on consumption. One possible interpretation is that households prefer to save rather than consume when their deposits increase.

However, the effect is weak and could be due to other factors not includesin the modelsuch as governance. To this end, Besong et al. (2022) show that regulations on bank licensing, external audit and reporting, deposit insurance, bank stability, income levels and mobile network coverage are essential elements in promoting the effect of financial inclusion.

The negative and highly significant coefficient on the ***'branch bank'*** variable suggests that an increase in the number of bank branches is associated with a decrease in current consumption. This may seem counterintuitive, but it is possible that an increase in the number of bank branches is associatedwith a greater supply of credit, which would encourage households to take on more debt and reduce their current consumption.

Foreign direct investment has a positive and significant effect on dependent consumption, suggesting that the new foreign firms stimulates economic activity and increases household income. The perception of the quality of governance in CEMAC ***(GovEff)*** has an insignificant effect on consumption. This result can be explained by the fact that theCEMAC countries are generally considered to have some of the worstgovernance is prevalent in Africa. This affects the standard ofliving of thepopulation in the region. The other variables (***Infl, Mil-exp, Pop-growth, lnAids***) have more nuanced effects and require more detailed analysis depending on the specific context of the study.

Table 3: Effect of financial inclusion on consumption

Variables	(1) lnDepcons	(2) lnDepcons	(3) lnDepcons
Fdi	.072**	.065**	.073**
	(.029)	(.03)	(.029)
Borrow	-.01***		
	(.004)		
GovEff	.615*	.451	.792*
	(.374)	(.458)	(.414)
Infl	.009	.015	.011
	(.01)	(.01)	(.01)
Mil-exp	.15*	.16*	.163*
	(.083)	(.087)	(.084)
Pop-growth	.127	.209	.166
	(.164)	(.17)	(.164)
lnAids	-.056	-.089	-.118
	(.079)	(.125)	(.088)
Deposit		-.002	
		(.003)	
Branch-bank			-.119**
			(.047)
_cons	2.493	2.634	3.841*
	(1.911)	(3.021)	(2.182)
Observations	71	71	71
R-squared	.291	.22	.278

Source: Authors' calculations based on data obtained from WDI, GFDD, and WGI.
Standard errors are in parentheses

*** P<.01, ** P<.05, * P<.1

3.3. Robustness tests of the implications of financial inclusion in CEMAC

In order to confirm the robustness of the previous effects of financial inclusion on living standards in CEMAC, the choice of the generalised estimating equations (GEE) method was applied, and the results obtained are similar to those obtained previously.

The results presented in Table 4, using GEEs, confirm the positive and significant impact of financial inclusion on per capita income in the CEMAC countries. Indeed, access to a bank branch has a positive and significant effect at the 1% threshold. The same is true for loans per 1000 adults (Borrow) and bank deposits (Deposit). These results confirm our expectations and join the work of authors such as Outreville (1999), Ahmad et al. (2012) and Datta and Singh (2019), who have highlighted comparative analyses between developed and developing countries on the impact of financial inclusion on social, economic and human development variables, respectively. For most of the effects obtained from the sample of CEMAC economies, the following results confirm certain works, but under the constraints of a strong consideration of institutional variables.

Table 4: Effect of financial inclusion on income

DEPENDENT VARIABLE: GDP PER CAPITA			
Variables	**(1)** lnGdp	**(2)** lnGdp	**(3)** lnGdp
GovEff	-0.1476**	-0.0841	-0.0855
	(0.0680)	(0.0819)	(0.0886)
Aids	-0.0491	-0.0074	0.0007
	(0,0543)	(0,0640)	(0,0690)
Fdi	-0,0027	0,0002	-0,0008
	(0,0023)	(0,0028)	(0,0030)
Infl	-0,0005	-0,0004	-0,0011
	(0,0006)	(0,0008)	(0,0008)
Mil-exp	0,0304***	0,0349***	0,0335***
	(0,0085)	(0,0101)	(0,0109)
Pop-growth	0,1323***	0,0548**	0,0661**
	(0,0247)	(0,0289)	(0,0310)
Branch-bank	0,4661***		
	(0,0448)		
Borrow		0,1810***	
		(0,0245)	
Deposit			0,1786***
			(0,0298)
Cons	2.6009	2.4528	2.2430
	(0.5329)***	(0.6107)***	(0.6504)***
Observations	84	84	84
Prob > F	0.0000	0.0000	0.0000

Source: Authors' calculations based on data obtained from WDI, GFDD, and WGI. * P< 0,10; ** P< 0,05; *** P< 0,01 are standard significance levels.

The results presented in the table above, using generalised least squares estimators, confirm the positive and significant effect of financial inclusion on consumption in the CEMAC countries. Indeed, access to a bank branch (Branch) has a positive and significant effect at the 1% threshold. The same is true for bank deposits (Deposit) and access to bank loans (Borrow). These results confirm our expectations and join the work of authors such as Outreville (1999), Ahmad et al. (2012) and Datta and Singh (2019), who have highlighted comparative analyses between developed and developing countries on the impact of financial inclusion on social, economic and human development variables, respectively. For most of the effects obtained from the sample of CEMAC economies, the following results confirm certain works, but under the constraints of a strong consideration of institutional variables. However, despite these positive and significant effects of financial inclusion on living standards in CEMAC, it should be noted that inclusion remains weak in this region.

Table 5: **Effect of financial inclusion on consumption**

DEPENDENT VARIABLE: DEPCONS			
Variables	**(1)**	**(2)**	**(3)**

	lnDepcons	lnDepcons	lnDepcons
GovEff	-0.0741	0.0204	0.0213
	(0.0601)	(0.0827)	(0.0972)
Aids	0.0067	0.0728	0.0969
	(0.0479)	(0.0646)	(0.0755)
Fdi	-0.0060***	-0.0016	-0.0032
	(0.0020)	(0.0028)	(0,0033)
Infl	-0,0003	-0,0002	-0,0012
	(0,0005)	(0,0008)	(0,0009)
Mil-exp	0,0314***	0,0383***	0,0365***
	(0,0075)	(0,0102)	(0,0120)
Pop-growth	0,1408***	0,0312	0,0518
	(0,0218)	(0,0291)	(0,0339)
Branch	0,6646***		
	(0,0396)		
Borrow		0,2660***	
		(0,0248)	
Deposit			0,2590***
			(0,0328)
Cons	9.2209***	8.9520***	8.5368***
	(0.4508)	(0.6027)	(0.6887)
Observations	84	84	84
Prob > F	0.0000	0.0000	0.0000

Source: Authors' calculations based on data obtained from WDI, GFDD, and WGI. * P< 0,10; ** P< 0,05; *** P< 0,01 are standard significance levels.

4. Conclusion

The aim of this paper is to examine the impact of financial inclusion on living standards in the CEMAC region. To do this, we used two estimation methods. First, we used a dynamic panel estimation (GMM). The results show that financial inclusion has a positive and significant effect on the standard of living, measured by per capita income and consumption, in the CEMAC countries. It appears that access to a bank branch, deposits and loans leads to an increase in income and consumption. This result is in line with our expectations. However, in order to confirm these results, we conducted a robustness test using the Generalised Equation Estimation (GEE) method, and the results obtained confirm the positive impact of financial inclusion on the standard of living in the region. CEMAC. However, despite this rather satisfactory result, it should be noted that financial inclusion in the sub-region remains low compared to West African countries. However, it should be noted that regulations relating to bank licensing, external audit and reporting, deposit insurance, bank stability, income levels and

mobile network coverage are all essential elements in promoting financial inclusion. It is, therefore, necessary to implement policies allowing poor people to have access to financial services to improve their living conditions.

Disclaimer (Artificial intelligence)

Option 1:

Author(s) hereby declare that NO generative AI technologies such as Large Language Models (ChatGPT, COPILOT, etc.) and text-to-image generators have been used during the writing or editing of this manuscript.

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Appendix

Table 6 :Definition of variables and expected signs

Variables	***Descriptions***	***Source***	***ExpectedSign***
Gdp	*GDP per capita is gross domestic product divided by midyear population. GDP is the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products.*	*WDI*	

Depcons	*Final consumption expenditure (formerly total consumption) is the sum of household final consumption expenditure (private consumption) and general government final consumption expenditure (general government consumption).*	*WDI*	
bankBranch	*The number of bank branches per inhabitant.*	*GFDD*	+
Deposit	*Depositors in CB commercial banks per 1000 adults*	*WDI*	+
Borrowing	*Borrowers from commercial banks per 1000 adults.*	*WDI*	+
Infl	*L'inflation en pourcentage du PIB*	*WDI*	-
Mil-exp	*military expenditure includes all current and capital expenditures on the armed forces, including peacekeeping forces;*		
FDI	*Foreign direct Investment*	*WDI*	+
Gov_Effect	*Perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies.*	*WGI*	-

Source: Authors'