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The term "financial inclusion" implies access and use of banking services (current account, savings account, insurance, credit, payments, etc.) at a low cost for the disadvantaged and low-income population in a country. In fact, banking services constitute a public good. It is therefore necessary that the accessibility and equitable use of banking services by the entire population should be among the primary objectives of government policies and financial institutions. Indeed, this helps to meet the basic financial needs of the population in any given country. The main objective of our study is therefore to examine the determinants of current account holding, which is considered to be a basic dimension of the use of banking services and therefore of financial inclusion. In our paper, we adopt an empirical approach using cross-sectional data to analyze the determinants of current account holding in the African continent.

Keywords: financial inclusion, Africa, cross-sectional data, banking services, finance, current accounts, econometrics

INTRODUCTION

The financial reforms of the 1980s and 1990s that took place in most economies were intended to improve the financial depth and use of formal financial services such as loans, savings, payment services, and other related services. However, the degree of access to and use of formal financial services remains very low internationally. Although there is theoretical and empirical support for financial liberalization (McKinnon and Shaw, 1973), there is some concern about the way reforms have been carried out. One of the main causes of the gap between the theory of financial liberalization and its evidence is based on idealistic assumptions, such as perfect information, without taking into account the variety and complexity of countries' legal and institutional frameworks.

However, after three decades of implementing these policies, the international community, represented by its governments, institutions and experts, has decided to revive the world of finance through financial inclusion, which is in essence a fight against financial exclusion and is a major element of any development strategy. According to (Cull, Ehrbeck and Holle, 2014), financial inclusion can improve the efficiency of payments, the security of transfers and new types of financial innovation can reduce transaction costs, which can increase private sector participation in development. Allan et al., (2013) believe that the global economy could be boosted by up to $157 billion in additional savings per year if "unbanked" people save through

microfinance programmes. Along the same lines, it is argued that financial inclusion programmes initiated by several countries will play a major role in the sustainable development agenda.

In this regard, conscious of the priority of financial inclusion on the international development agenda, we have taken the liberty of studying on this paper one of the crucial issues known as the basic problems of financial inclusion, namely the factors determining its success and those that hinder it. And although most formal financial institutions offer a range of financial services, we have focused on current account holding because it is the gateway to the use of other financial services and because of the quality of information, since current account holding is generally comparable across countries, unlike credit, which varies according to maturity, interest, collateral requirements, and other elements that vary from country to country.

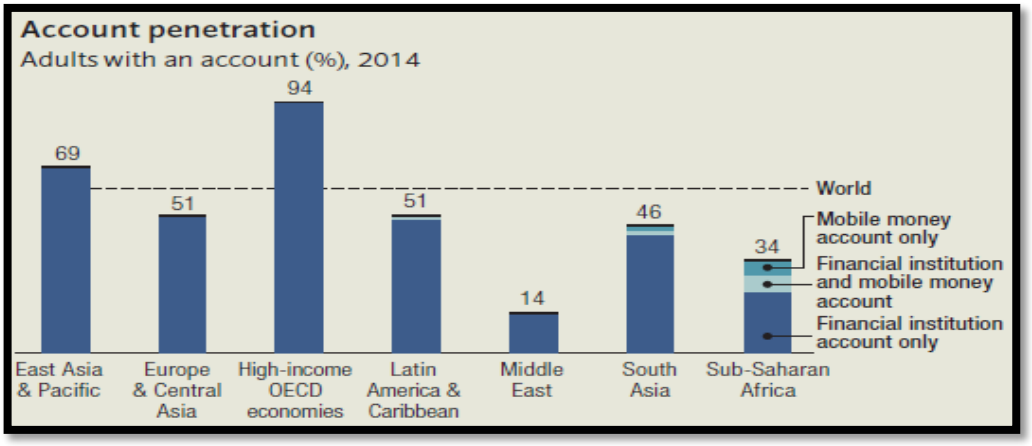
Thus, current accounts provide both payment and savings opportunities, which are likely to be universally more in demand than credit. Moreover, even if we assume that the entire population needs credit, it is clear that not everyone deserves credit. Many people may not have good investment projects, so it would be inefficient to allocate resources to these people. Finally, the problems of financial stability could imply that universal use of credit services is not an objective. The recent subprime crisis in the United States illustrates this issue very clearly. On the other hand, assuming that there is universal demand for deposit, savings and payment services, full financial inclusion would have major negative implications for financial stability. A potential concern could be that if the entire population has a bank account (current or term), a bank run could be more destabilizing.

1. ASPECTS OF BANKING IN AFRICA

For most people, having an account provides an entry point into the formal financial system. An account makes it easier and often more affordable to pay bills, receive payments and send or receive funds. It also provides a safe place to save money, and provides access to bank loans. Without a doubt, having an account is an indicator of financial inclusion.

According to the report of the Findex Global database conducted in 2015; 60% worldwide, reported having an account in a financial institution. Indeed, account ownership varies considerably around the world. Account ownership in high-income economies is almost universal, where 94% of adults reported having an account in 2014. In contrast, in developing countries, only 54% report having an account. There are also huge disparities between developing regions, where bank ownership ranges from 14% in the Middle East and 69% in East Asia and the Pacific to 34% in sub-Saharan Africa (figures include the Findex definition of bank ownership, but bank ownership in the conventional sense is around 27% in Africa).

FIGURE 1
ACCOUNT PENETRATION RATES IN THE WORLD



Source: Findex Global database report

Despite the low level of access to banking services in sub-Saharan Africa, which according to the literature is mainly explained by low income, an important phenomenon is gaining momentum on the African continent and which is an exception in comparison to other regions of the world. There is a remarkable craze for mobile payment, which has become a financial service that is increasingly in demand, which is why this service is included in the definition of banking rates in the Findex Global database report of the World Bank. Indeed, the manifestation of this phenomenon over the last 5 years suggests that the widely accepted definition of the term "banking" should take into account other innovative means such as mobile payment accounts, which should be part of the development programs and strategies developed in countries wishing to maximize banking and therefore improve their level of financial inclusion.

2. LITERATURE REVIEW ON THE DETERMINANTS OF FINANCIAL INCLUSION

In the literature, there is no consensus on the determinants of financial inclusion. Indeed, a growing number of studies examine financial inclusion using the World Bank's Global Findex database, which contains financial inclusion indicators only for the years 2011 and 2014 for 148 countries. Demirgüc-Kunt and Klapper (2013) have studied the use of financial services for all countries, focusing on the three main indicators of financial inclusion: bank account ownership, savings in a bank account, and use of bank loans. They found that income is a major determinant of financial inclusion.

In a cross-sectional analysis, Sarma and Pais (2011) showed that income, income inequality, mobile phone use, internet use, and adult literacy are important factors determining financial inclusion in a country. They argue that countries with low GDP per capita, relatively lower connectivity and lower literacy rates appear to be more financially excluded. Fungacova and Weill (2015) studied financial inclusion in China and compared it with other BRICS countries (Brazil, Russia, India, China, South Africa). They find that income and education increase the level of financial inclusion and that men and older people have higher levels of financial inclusion. In Argentina, Tuesta et al (2015) found that both income and education are important factors for financial inclusion. In India, (Chithra and Selvam, 2013) found that income, population, literacy, deposit and credit penetration are significantly associated with financial inclusion. Similarly, Kumar (2013) found that socio-economic and environmental structure is important in shaping the banking habits of the masses in India. In Peru, Camara, Peña, and Tuesta (2014) showed that income levels and education are significant variables in determining financial inclusion. In Africa, Allen et al (2014) have shown that population density is stronger determinant of financial inclusion than elsewhere. In addition, they found that mobile banking broadens access to financial services. Efobi et al (2014) have explored factors influencing access to and use of banking services in Nigeria, and their results reveal that individual attributes, income and ICT (information and communication technology) use are significant factors influencing the use of banking services.

3. EMPIRICAL VERIFICATION ON FINANCIAL INCLUSION: CURRENT ACCOUNT DIMENSION

The factors affecting financial inclusion are likely to be multiple and their mutual interactions are assumed to be complex. So, without going into the complexity of how a large number of factors together contribute to a certain level of financial inclusion in a country, we are attempting here through a cross-sectional analysis simply to identify those factors that are associated, with some degree of significance, with the index of financial inclusion, which here is current account holding. We do this by running two regressions on two different sets of variables. The first regression will explain the banking sector determinants of current account holding while the second regression will study the economic and social factors explaining the demand for current accounts by the population in Africa. Hence, we have used cross-sectional data for the year 2014 for a representative sample of 35 countries on the African continent. The data are collected from the World Development Indicators and Financial Inclusion Data databases of the World Bank.

3.1 Regression on the banking sector

It is obvious that costs in any sector play a major role in the choice of using any service, so costs related to the use of a financial service are one of them (Demirguc-Kunt et al. 2012) The cost of holding a current account depends on account maintenance fees and commissions paid when making payments. Indeed, these costs themselves depend on the degree of competition between banks, which is influenced not only by banking concentration within a country but also by the penetration of foreign banks and financial institutions in that country. The use of financial services also depends on the density of the banking infrastructure, i.e. bank branches, ATMs, etc., which is influenced not only by bank concentration within a country but also by the penetration of foreign banks and financial institutions in that country. It is also believed that the use of a financial service is also linked to the diversity of products offered by financial institutions and more precisely here the existence of Islamic banks.

In this context, our first regression tries to see the effect of some variables characterizing the banking sector such as the banking concentration rate (assets of the three largest commercial banks as a proportion of total assets of commercial banks), the penetration rate of ATMs (number of ATMs per 100,000 adults) and the existence of Islamic banking (indicator variable that takes 1 if it exists and 0 if not) on the variable of current account holding.

The model is written:

$$\mathrm{COMPTEB_i} = a_0 + a_1\mathrm{BANKCON_i} + a_2\mathrm{ISLMB_i} + a_3\mathrm{ATM_i} + +\varepsilon_i$$

Or

$\mathrm{COMPTEB_i}$: Current account holding, endogenous variable observed for the country i
$\mathrm{BANKCON_i}$: Bank concentration rate,
$\mathrm{ATM_i}$: Penetration rate of ATMs
$\mathrm{ISLMB_i}$: Indicator variable that takes 1 if there is an Islamic bank and 0 if there is no Islamic bank
$a_0 a_1 a_2\ a_3$: Model parameters
ε_i : Error term

TABLE 1
REGRESSION RESULTS FOR THE VARIABLE ACCOUNT ON BANKING SECTOR VARIABLES

Variable	Coefficient	Std. Error	t-Statistic	Prob.
BANKCON	-0.297126	0.112978	-2.629951	0.0147
ATM	0.902218	0.136166	6.625878	0.0000
ISLMB	4.006542	4.522016	0.886008	0.3844
C	33.93973	9.090604	3.733496	0.0010

R^2	0.729073	Mean dependent var	27.95985
Adjusted R^2	0.695207	S.D. dependent var	20.72632
S.E. of regression	11.44260	Akaike info criterion	7.844127
Sum squared resid	3142.395	Schwarz criterion	8.034442
Log likelihood	-105.8178	Hannan-Quinn criter.	7.902309
F-statistic	21.52821	Durbin-Watson stat	1.724570
Prob(F-statistic)	0.000001		

The results on the table perfectly validate the model from du R^2= 0.72, the F-statistic test (0.000001< 0.05) and the Durbin-Watson test (1.6 < 1.72 < 2). Indeed, the variable representing banking concentration on the African continent is significant and negatively impacts current account holding, as well as a 1% increase in banking concentration reduces current account holding by 0.29%, this as explained before is often associated with low competition in the banking sector, resulting in high costs of using financial services and therefore financial exclusion of the African population. The penetration rate of ATMs which represents the geographical availability of financial services is also significant and positively affects the explained variable, a 1% increase in ATMs increases the current account holding by 0.9%, this result gives legitimacy to the strategies of proximity of financial services adopted by some countries that have very high banking rates and which must now be taken into consideration by African countries in the development of financial inclusion strategies. The explanatory and representative indicator variable of Islamic finance as a product different from the classical one shows no impact on current account holding and, of course, on banking.

3.2 Regression on economic and social determinants

The literature on financial inclusion has identified financial exclusion as reflecting a broader problem of social exclusion. In high-income developed countries with a developed banking system, studies have shown that exclusion from the financial system mainly concerns people from low-income groups. In addition, countries with low levels of income inequality tend to have a relatively high level of financial inclusion. Another factor that may be associated with financial inclusion is employment. The unemployed or those with irregular and precarious employment are less likely to participate in the financial system. The informal sector or informal economy accounts for a large and significant share of employment in several less developed countries. This means that employment in the formal sector could involve banking by receiving wages through the formal banking system. There is also the factor of inflation which may encourage a preference for cash and thus discourage the use of banking services. Education is also concerned because of its decisive role, obviously alongside religious beliefs in people's decision-making.

The second regression used all the factors that are thought to influence banking. The variables collected concern: the literacy rate which describes the basic education level of a country, the inflation rate, the vulnerable employment defined by the rate of vulnerable jobs in relation to the population, this variable is a proxy representation of the share of the informal sector in the economy, the GDP per capita is the proxy variable which expresses the income level, finally the indicator variable of Islamic finance is also included here to take into account the influence of religious beliefs on the population's decision to hold a bank account.

Our model can be written as follows:

$$\mathrm{COMPTEB_i} = a_0 + a_1\mathrm{ALPHA_i} + a_2\mathrm{INF_i} + a_3\mathrm{EMPVUL_i} + a_4\mathrm{PIB/HAB_i} + a_5\mathrm{ISLMB_i} + \varepsilon_i$$

Où

$\mathrm{COMPTEB_i}$: Current account holding, endogenous variable observed for country i
$\mathrm{ALPHA_i}$: Literacy rate
$\mathrm{INF_i}$: Inflation rate
$\mathrm{EMPVUL_i}$: Rate of vulnerable employment as a percentage of total employment
$\mathrm{ISLMB_i}$: Indicator variable that takes 1 if there is an Islamic bank and 0 if there is no Islamic bank.
$\mathrm{PIB/HAB_i}$: Proxy variable of income level
a_0 .... a_5 : Model parameters
ε_i : Error term

TABLE 2
RESULT OF THE REGRESSION OF THE VARIABLE COMPTEB ON ECONOMIC AND SOCIAL VARIABLES

Variable	Coefficient	Std. Error	t-Statistic	Prob.
ALPHA	0.342193	0.129137	2.649849	0.0129
INF	-0.365074	0.320053	-1.140667	0.2633
EMPVUL	-0.375568	0.120649	-3.112912	0.0041
PIB_HAB	1.871433	1.372381	1.363640	0.1832
ISLMB	1.548377	5.037915	0.307345	0.7608
C	23.82530	16.57436	1.437479	0.1613

R^2	0.615042	Mean dependent var	25.99372
Adjusted R^2	0.548669	S.D. dependent var	19.11248
S.E. of regression	12.83998	Akaike info criterion	8.097809
Sum squared resid	4781.087	Schwarz criterion	8.364440
Log likelihood	135.7117	Hannan-Quinn criter.	8.189850
F-statistic	9.266561	Durbin-Watson stat	2.057657
Prob(F-statistic)	0.000023		

Our model is validated from R^2= 0.61, the F-statistic test (0.000023< 0.05) and the Durbin-Watson test (2 < 2.06 < 2.4). We note that the education variable has a significant impact on the holding of a current account; a 1% increase in literacy improves banking by 0.34%. This result is almost unanimously accepted by all studies on the subject. The other significant variable is that of vulnerable employment, with a negative sign: a 1% increase in vulnerable employment reduces the holding of a current account by 0.37%. Indeed, vulnerable employment, the main feature of the informal sector, is detrimental to financial inclusion. As for the other variables, no significance is shown, in fact, the insignificance of the income proxy variable (PIB/HAB) is surprising, but this may be due to the fact that almost all African countries belong to the category of low income countries at the global level, which negates its impact in the presence of other more determining variables.

4. CONCLUSIONS AND RECOMMENDATIONS

Financial inclusion is seen as an index of social inclusion, yet the number of studies focusing on its determinants remains limited, and only takes into account factors that characterize populations without considering other important elements. For this reason, our econometric study, conducted at two levels, used cross-sectional data to analyze the determinants of bank ownership (holding a current account) for a set of African countries. The first analysis on variables related to the banking sector, allowed us to infer that banking concentration in Africa is detrimental to financial inclusion, however, the geographical coverage and density of banking infrastructure is conducive to financial inclusion. The second analysis on social and economic variables shows, on the one hand, the importance of education in promoting financial inclusion and, on the other hand, the extent of the informal sector with its vulnerable jobs that financially exclude people.

The results selected at the end of this study provide some idea of the level of economic and social development on the African continent. Thus, policies and strategies to promote financial inclusion must be based not only on the strengthening of competition in the banking sector to reduce costs, but also on the use of technological innovation to overcome deficient infrastructures. Moreover, Africa stands out from other

regions of the world on the one hand by its low level of banking in the traditional sense of the term (holding a current bank account) and on the other hand by its supremacy in the use of mobile payment.

Within this framework, it is suggested that government policies to promote social inclusion and the integration of the informal sector into the formal economy can increase the likelihood of financial inclusion. Similarly, incentives for financial institutions and the banking sector to invest in education will have a positive long-term feedback effect on them and generally on the financing of the economy. However, it is important to tailor financial inclusion strategies to the context of each economy and to improve prudential supervision, especially in countries with rapid financial development.

ENDNOTES

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