An Investigation into the Level of Financial Inclusion in Sub-Saharan Africa

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Abstract

Financial inclusion is crucial for redistribution of economic resources between the deficit and surplus units in an economy. Despite the importance of financial inclusion, especially for economic growth of developing regions such as Sub-Saharan Africa, the prevailing level financial inclusion remain an open question. Against this background, this study investigates the level of financial inclusion in Sub-Saharan Africa between 2005 and 2015. This study employs secondary data obtained from the International Monetary Fund (IMF). The data obtained was subjected to Principal Component Analysis to determine the level of financial inclusion in Sub-Saharan Africa. The findings show that Sub-Saharan Africa has a medium level of financial inclusion during the observed period with Index of Financial Inclusion (IFI) value of 0.095023. The study concludes that Sub-Saharan Africa has high propensity to achieve a high level of financial inclusion in the region if more outlets of financial institutions are established.

Keywords: financial inclusion; financial inclusion index; Sub-Saharan Africa.

JEL classification: G1; G2.

1. INTRODUCTION

Financial inclusion has a particular significance for developing economies like those of Sub-Saharan Africa as it brings a large segment of the productive sectors of the economy under the formal financial system. Due to this, several Sub-Saharan African countries put in place different initiatives and policies in the formal financial system. Some of these policies and initiatives are the licensing of microfinance banks, non-interest financial institution, the introduction of the electronic payment system, agent banking, mobile banking, non-

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conventional banks, and liberalization of interest rates among others. These policies were designed to encourage people to use the formal financial system, which will ultimately foster efficient allocation of resources, reduce inequalities, and provide opportunities, especially to the poor (Demirgüç-Kunt *et al.*, 2008). Supporting this view, Khan (2012) noted that a means through which governments achieve efficiency and leak-proof transfer of immense amounts of welfare benefits to targeted and disadvantaged groups of the population is through the inclusive financial system.

This justifies the efforts put in place by governments of Sub-Saharan African countries to achieve an inclusive financial system in order to improve the standard of living in the region. These efforts have also caused formal financial institutions to witness dynamic competitive environment at a cross-border scale which has resulted in the growth of different formal financial services in the recent decade. This has also captured the interest of the initially financially excluded and those already included.

Nonetheless, this paper contributes to literature by highlighting the level of financial inclusion in Sub-Saharan Africa. The absence of adequate knowledge on the level of financial inclusion in the region has hindered relevant authorities' ample information on the progress and success of various financial innovations and initiatives put in place to boost financial inclusion. Ways to improve these efforts to meet set target of Vision 2020 is not clear (Faruk and Noman, 2013; Fungáčová and Weill, 2014; Gebrehiwot and Makina, 2015; Gupte *et al.*, 2012; Papadavid, 2016; Sarma and Pais, 2011; Peña *et al.*, 2014).

The occurrence of these problems has generated concern in the region because they hinder financial inclusion, which leads to a roadblock to poverty reduction and economic growth (Demirgüç-Kunt *et al.*, 2017). Furthermore, this has impeded asset building and the ability to transform talents into productive uses due to inaccessibility of financial and social capital (Beck and De la Torre, 2007).

Furthermore, available evidence on the level of financial inclusion in Sub-Saharan Africa is based on account ownership only (Demirgüç-Kunt *et al.*, 2015). Studies such as Akudugu (2013), Marr *et al.* (2014), Babajide *et al.* (2015), Onaolapo (2015) and Zins and Weill (2016), proxy financial inclusion with deposits from rural areas and commercial banks' deposits, total number of newly banked people and formal account with a commercial bank. These studies ignored the fact that having an account with a formal financial institution does not adequately mean financial inclusion, it only serves as an entry point into the formal financial system (Beck *et al.*, 2007; Demirgüç-Kunt and Klapper, 2012). Furthermore, financial inclusion in the region can hardly be inferred from the studies that fail to recognize the robustness of incorporating all the relevant indicators in an index, because financial inclusion is an important policy objective which is comprehensive than each of the proxies (Allen *et al.*, 2012; Sarma, 2008).

To the best of the researcher's knowledge, no study has measured and incorporated mobile money in the measurement of the level of financial inclusion in the Sub-Saharan African region. This has been regarded as a bright spot for financial service extension within Sub-Saharan Africa. Also, no study in Sub-Saharan Africa investigating financial inclusion has used an index of financial inclusion. To circumvent this, a region-specific calculation of the level of financial inclusion with similar economic performance, financial development, and institutional frameworks is necessary. This study addresses this gap existing in the literature by calculating the financial inclusion index, using the principal component analysis, which generates the principal component of financial inclusion that is the actual

extent of financial inclusion. This method considers all the indicators in generating the index of financial inclusion. The rest of the study is organized as follows: Section 2 presents a brief review of literature on the level of financial inclusion, Section 3 details the methodology employed for the study, Section 4 presents results and discussion while Section 5 concludes the study with relevant policy implications.

2. REVIEW OF LITERATURE

2.1 Concept of Financial Inclusion

Financial inclusion has been the core target of many developing nations since the start of the new millennium, as many research findings have identified the importance of financial inclusion to an economy.

Financial inclusion is a situation which allows for ease of access to, availability of, and usage of formal financial systems by citizens in an economy. It is a situation where no one in an economy has any difficulty in opening a bank account and everyone can afford credit and can conveniently, easily and consistently use the financial system's products and facilities. It is the process which ensures that a person's wealth is maximized, expenses are controlled and one can exercise informed choices through access to basic financial services (Central Bank of Nigeria, 2012).

2.2 Dimensions of Financial Inclusion

Literature such as Sarma (2008), Sriram and Sundaram (2015) and Yorulmaz (2013) has identified three major dimensions of financial inclusion to include penetration, availability and usage of financial services. Financial institution penetration means the ability of the formal financial institutions to penetrate deeply and widely amongst the users. It also indicates the ability of the financial institutions to attract customers who eventual open accounts with them. The size of the banked population, that is, the proportion of people having a formal account and number of people with mobile money account are measures of the financial institutions' penetration in an economy (Gupte *et al.*, 2012). Furthermore, the number of deposit and loan account with commercial banks, microfinance institutions, regulated credit union and cooperative societies and number of people with mobile money accounts per 1,000 adult serves as the indicators in the penetration dimension.

Deposit accounts were used because a critical mass of data is missing for the number of the depositor, which may be more appropriate than deposit account as this may lead to double counting. Nevertheless, following Chakravarty and Pal (2010), Gupte *et al.* (2012) and Sethy (2016), deposit accounts were used. Similarly, the study considered loan account following Beck *et al.* (2007). This was considered appropriate because some individuals may for the first time have a loan account as against the deposit account. Although this might be small compared to the deposit account, the fact that such situation exists cannot be ruled out (Beck *et al.*, 2007; Bhuvana and Vasantha, 2016; Chakravarty and Pal, 2010; Gupte *et al.*, 2012). Financial institutions, regulated credit unions, and cooperative societies were included following Amidžić *et al.* (2014). These institutions play a major role in financial inclusion, especially in Sub-Saharan Africa. According to Guièze (2014), these financial institutions which are in thousands, offer different financial and non-financial

services to over 71 million people especially the poor and the rural dwellers with little or no access to conventional banking services. 44 of 71 million people had access to a deposit account; 20 million had taken credit while others enjoy non-financial services in Sub-Saharan Africa. Therefore, their contributions cannot be overlooked.

Availability of financial services is the second dimension. This implies the presences and accessibility of financial institutions in order to promote easy access and frequent usage. In an inclusive financial system, banking services should be easily available to the users. Indicators of availability of financial services are the number of branches of commercial banks, micro finance institutions, regulated credit union and cooperative societies per 100,000 adult and number of Automated Teller Machine (ATM) per 100,000 adults. In the present day banking system in many countries, ATMs play an important role. Therefore, the importance of ATMs in providing improved access to financial services cannot be ruled out. However, the spread of ATM network varies from financial institution to financial institution and from country to country while the role of a bank branch still remains (Sarma, 2012). Furthermore, keeping in view the move towards mobile money especially in Sub-Saharan Africa, data on mobile banking outlets per 100,000 adults was incorporated in this dimension. Therefore, number of bank branches, number of ATM and mobile money outlets per 100,000 adults served as indicators for availability dimension. These indicators are used following Sarma (2008), Gupte *et al.* (2012) and Sethy (2016).

Usage represents the third dimension. This shows how well the financial services offered by the financial institutions are used. It has been noted that in some countries where a high number of formal account is being recorded, very few make use of the financial services due to various reasons such as availability of banking outlets, stringent conditions attached to financial services among others (Cámara and Tuesta, 2014). Therefore, having a bank account is not adequate for an inclusive financial system (Sarma, 2012). Hence, in incorporating the usage dimension in the present index, two basic indicators have been noted in literature, namely; deposit and credit from commercial banks, MFIs, credit union and cooperative societies. This study went further to include mobile money transactions which often include payment, remittance, transfer among others as earlier noted by Sarma (2008), but it is not considered in this study due to non-availability of data. As against the deposit and credit as a percentage of GDP used by Sarma (2008) and Okpara (2013), this study used outstanding loan and credit because in finance-growth literature, credit to GDP is a measure of financial depth, and Demirgüç-Kunt *et al.* (2017) argued that financial depth which captures the financial sector relative to the economy and financial inclusion which is a situation where everyone in an economy can access financial services that meet their needs are only similar but not the same. Similarly, Beck *et al.* (2007) posit that deposit and credit as a percentage to GDP do not adequately represent the value of services received by individuals. Data on all the indicators were obtained from the IMF Financial Access Survey database.

Table no. 1 shows the three dimensions and the nine indicators used in this study for the construction of financial inclusion for Sub-Saharan African countries, which were adapted from Sarma (2008) with modifications.

**Table no. 1 – The Dimensions and Indicators used to
Construct Financial Inclusion Index for African Countries**

Dimension	Indicators
Financial Institution penetration	Number of Deposit Account with Commercial Banks, MFIs, Credit Union and Cooperative Societies per 1,000 Adults
	Number of Loan Account with Commercial Banks, MFIs, Credit Union and Cooperative Societies per 1,000 Adults
	Number of Mobile Money Account per 1,000 Adults
Availability of Financial Institution services	Number of Branches of Commercial Banks, MFIs, Credit Union and Cooperative Societies per 100,000 Adults
	Number of ATM per 100,000 Adults
	Mobile Money Agent Outlets per 100,000 Adults
Usage	Depositor with Commercial Banks, MFIs, Credit Union and Cooperative Societies per 1,000 Adults
	Creditor at Commercial Banks, MFIs, Credit Union and Cooperative Societies per 1,000 Adults
	Mobile Money Transaction per 1,000 Adults

Source: authors

2.3 Theoretical review

2.3.1 Law and finance theory

The law and finance theory was developed by La Porta *et al*. (1997, 1998) henceforth, LLSV. According to this theory, the past colonial regimes explained to a greater extent the financial system that prevails in an economy. La Porta *et al.* (1998), Beck *et al.* (2003) argued that countries that are of British common law are more financially developed than those with French civil law. The theory further argues that the legacy of the British system flourishes regulatory quality and financial activities. This is because the appointment of judges is not done by the governments. The legacy of the French legal system is characterized by the legal procedures codified by the state, absence or little decentralization, the absence of federations, the appointment of judges by the central government among others. These attributes hinder the quality of regulation and thus, financial development. This is because a government with too much power will interfere with the activities of the financial market and make the market unfavourable for financial development (Asongu, 2012). Thus, this system may make economies in French former colonies less financially included than the British. This theory has been used in studies such as Beck *et al.* (2003), and Filippidis and Katrakilidis (2014).

2.4 Empirical review

2.4.1 Country-specific studies on the level of Financial Inclusion

Gupte *et al.* (2012) designed financial inclusion index for India using the distance-based methodology. The study conducted in 2008 and 2009, adopted the indicators of Sarma (2008) such as the number of bank account, number of ATMs, bank branches, credit and deposit, the study further included ease and cost of financial services. The study showed that the index improved between the study periods, and then argued that the improvement can be attributed to several initiatives taken by financial regulators, the government, and banking sector. However, the study suffers similar limitation as Sarma (2010) in terms of bias means of allocating weights to the dimensions. The study even stated that the interpretation of the

methodology should be made with care because the max-min values across countries would impact the index of one country and may not reflect the extent of the impact made by financial inclusion initiatives of another country.

Zulaica Piñeyro (2013) measured financial inclusion for Mexico using the PCA methodology. The dimensions include access, usage, financial education, consumer protection and social development. The findings showed that 36% of Mexico's municipalities possess a high level of financial inclusion. However, the inclusion of financial education, customer protection by legal right and social development in form of access to phone, internet, etc. has been classified as determinants in studies such as Djankov et al. (2007), Connolly and Hajaj (2001), Laha et al. (2011), Sarma and Pais (2011), Boakye and Amankwah (2012), Akudugu (2013), Gebrehiwot and Makina (2015), Zins and Weill (2016), this makes the study a stand-alone and therefore the extent of financial inclusion is not reliable. Nevertheless, principal component was used to analyze the data which is free of researcher's bias.

Ambarkhane et al. (2016) developed a comprehensive index of financial inclusion index for India. Dimensions used include supply, demand and infrastructure. The findings revealed that drag factor has a negative effect on the financial inclusion index. One of the drawbacks of the study is the inclusion of infrastructural dimension which includes the ratio of irrigated area, road length, railway, life expectancy, etc., which are not in any way indicators of financial inclusion.

Sethy (2016) developed financial inclusion index for supply and demand sides for India using the distance based methodology. The demand side indicators were the same with that of Sarma (2012) except for the exclusion of outstanding credit with commercial banks as a percentage of GDP. The demand side indicators included the proportion of households having access to savings and insurance and the number of loans given to small enterprises. The study revealed that India has high financial inclusion using the demand dimension while low financial inclusion level was observed from the supply side. One important drawback of this study was the exclusion of credit which is an important indicator of financial inclusion (Sarma, 2008). Also, the indicators of both demand and supply sides are similar and do not distinctively portray the two dimensions as argued by Cámara and Tuesta (2014). In the same vein, the study suffers the same methodological shortcomings as Sarma (2010) in terms of allocation of weights to the dimensions.

Goel and Sharma (2017) introduces an index that allows for a general overview of India's of financial inclusion using banking penetration, availability and access to finance. The study used the UNDP methodology to determine the composite index for India. The findings revealed that from 2005 to 2012 India had low level of financial inclusion, in 2013 the country witness a medium level of financial inclusion which improved to high level from 2014 to 2015. The study, however, did not include the usage dimension.

2.4.2 Cross-country studies on the level of Financial Inclusion

Recent studies have examined the level of financial inclusion, prominent and one of the earliest among them is Beck et al. (2007) who measured access to financial services and presented set of indicators of banking sector penetration for 99 countries. The study showed that the indicators predict household and firm use of banking services. The study took a bold step to first identify outreach indicator. However, the study was for a point in time, the study also considered both geographic and demographic outlets; in which if incorporated together in an index may overstate the level of financial inclusion because the outlets will be counted twice.

The most widely cited in this area of research is that of Sarma (2008, 2010 and 2012). Sarma (2008) used a methodology similar to the United Nation Development Project (UNDP) methodology to calculate a multi-dimensional index of financial inclusion. The study used indicators such as the number of bank account, number of ATMs, bank branches, credit and deposit. The study found that level of financial inclusion varies across countries. Unfortunately, equal weight was allocated to each of the dimension and in reality, they might have different contributions. The bias weight allocation might affect the reliability of the findings. This is supported by the argument of Lockwood (2004) that index is sensitive to subjective weight assignment. Furthermore, trending indicators such as mobile money, which has allowed for an increase in the use of formal financial services were not included, thus the financial inclusion index is one-sided. Nevertheless, Sarma (2008) is one of the earliest studies that filled the gap of constructing a financial inclusion index.

Honohan (2008) combined primary and secondary data on the number of bank accounts to determine the proportion of households/adults having access to financial services for 160 countries, using simple percentage. The result reported that Latin America and the Caribbean have the highest financial access while Eastern Europe and Central Asia have the lowest financial access. Kempson et al. (2004) argued that having an account alone does not translate to financial inclusion because people might open a bank account without making use of it, however, Honohan (2008) considered only account ownership and ignored other indicators of financial inclusion. Furthermore, the data used suffers from inconsistency, which could hinder comparison over time. Nevertheless, the study provided useful information.

The distance-based methodology which is a modification to the UNDP methodology was used by Sarma (2010), who measured the level of financial inclusion of 49 countries. The number of bank account, number of ATMs, bank branches, credit and deposit serves as the indicators. The study found that majority of countries with high IFI are high-income countries, except for few (that are middle-income countries). The study also reported that low-income countries were also found in the low IFI category. However, the study used a subjective means of allocation of weight to the dimensions, which is the adoption of a bias method of allocating weight to each of the dimensions. In the same vein, Sarma (2012) measured the level of financial inclusion of 94 countries by employing the same dimensions and indicators used in an earlier reported study Sarma (2008). The latter study showed general improvement as it was reported in his former study, Sarma (2008). The study concludes that the IFI can be used to monitor the progress of economies with respect to financial inclusion over time.

Furthermore, Arora (2010) calculated the index of financial inclusion for 98 countries using the same dimension as Sarma (2008). The study showed that among all the countries, Belgium has the highest level of financial inclusion, followed by Spain and Germany. However, this study used a subjective methodology as noted in the case of Sarma (2008). The study included indicators such as cost associated with an account which has been identified to be a determinant as indicated by financial repression theory. Furthermore, outreach indicator such as ATM was considered using land area and population. This may overstate the outreach dimension because this indicator will eventually be captured twice. Nevertheless, the study took a step above that of Sarma (2008) by reporting financial inclusion by dimensions and the overall index.

Demirgüç-Kunt and Klapper (2012) measured financial inclusion around the world. The study used survey data and reported results using percentages and charts. Indicators include formal account, savings behaviour and sources of borrowing. The study reports that account

ownership in Africa is the lowest in the World, while Sub-Saharan Africa reports 24 percent of the adult population having an account with a formal financial institution. The study for the first time provides wide coverage of household data on the use of financial services around the world. However, the findings provided were for a single period, which does not allow for comparisons over the year. Similarly, the study did not construct an index but accounted for some of the indicators such as account ownership using tables, percentages etc. separately.

Fungáčová and Weill (2014) investigated the extent of financial inclusion in Brazil, Russia, India, China and South Africa (BRICS) using data from the Global Findex. Using simple percentages, the study found that formal account and savings are more in use in China than in other BRICS. The limitation of this study is similar to Demirgüç-Kunt and Klapper (2012), that is, the study did not allow for comparison because it covers a single period.

In the same vein, Amidžić et al. (2014) assessed financial inclusion standing of 35 countries by using Factor Analysis. The dimension consists of outreach (geographic and demographic penetration), usage (deposit and lending), and quality (disclosure requirement, dispute resolution, and cost of usage). It revealed that from both dimensional and composite index, country rankings relative to one another remained stable over the observed periods. However, the methodology adopted is not free of shortcomings, as factor analysis was used to determine the indicators to include. This methodology is not preferred over the Principal Component Analysis (PCA), because it makes assumptions on raw data such as the selection of an underlying number of common factor. Nevertheless, this study made remarkable effort to include indicators relating to microfinance institutions and cooperative society into financial inclusion index.

Other methodologies used in measuring financial inclusion include PCA. This was used in a study conducted by Cámara and Tuesta (2014) for 82 countries. The study revealed that access is the most important dimension for measuring the level of financial inclusion. The methodology constructed has three dimensions namely; access, usage, and barriers. It is free of researcher's bias, and uses intuitive means of allocating weight to each dimension. This overcomes the shortcomings of Sarma (2008), Arora (2010), Sarma (2010), Sarma (2012) and Amidžić et al. (2014). However, the indicators include factors such as cost, which has been empirically and theoretically proven to form part of the determinants (Allen et al., 2012; McKinnon, 1973; Sarma and Pais, 2011; Shaw, 1973). Another drawback of this study is that it was for a single period, and does not allow for comparison over time.

Park and Mercado (2018) used the UNDP methodology to measure financial inclusion and included five dimensions, namely; ATM per 100,000 adults, commercial bank branches per 100,000 adults, borrowers from commercial banks per 1,000 adults, depositors with commercial banks per 1,000 adults, and domestic credit to Gross Domestic Product ratio. The financial inclusion index showed a similar ranking pattern as those of Honohan (2008) and of Sarma (2008), where some developing countries were reported to have high financial inclusion. One limitation of Park and Mercado (2018) is that the indicators did not include deposit, which is an important indicator of the usage dimension (Beck et al., 2007; Sarma, 2012). Other important indicators such as mobile money account, mobile money outlet and mobile money transactions, which are noted to lead to the high use of financial services in recent time were excluded. Furthermore, the UNDP methodology uses a subjective means of allocating weight to each indicator. The resultant financial inclusion index will therefore be bias (Lockwood, 2004).

Korynski and Pytkowska (2016) calculated the financial inclusion score for the European Union (EU) using the Data Envelopment Analysis (DEA). The dimensions used

include input and output while the study showed that, generally, level of financial inclusion in the EU was high. However, DEA does not take into consideration the effect of exogenous variables in the operation.

Park and Mercado (2018) measured the level of financial inclusion for 151 countries taking into consideration three dimensions namely access, availability and usage. PCA was used to determine the level of financial inclusion. The study found that the level of financial inclusion has improved generally over the study period. This study did not include mobile money tractions for which data is available for recent years.

Yorulmaz (2018) constructed a broader multidimensional financial inclusion indices using the supply and demand side information. The study used PCA for the construction of the indices and followed the Organisation for Economic Cooperation and Development's (OECD) handbook on construction of index. The study revealed that the inclusion of new indicators in the measuring financial inclusion makes the index more comprehensive and not detrimental.

3. DATA AND METHODOLOGY

3.1 Nature and sources of data

The study used previously gathered data (secondary data) on the level of financial inclusion from the IMF database (Financial Access Survey) 2005-2015.

3.2 Population and sample size

The population of the study consist of all the Sub-Saharan African countries. There are 49 Sub-Saharan African countries. The sample consists of 22 Sub-Saharan African countries drawn from the population of 49 Sub-Saharan countries based on the availability of data. These countries are listed in Appendix 1. The non-availability of data for some of these countries may be attributed to the level of development of their financial sector.

3.3 Descriptive statistical method

The simple descriptive statistical method was used in this study to summarize the complex data sets. They include tabulations, percentages and charts. This also includes a snapshot of data in the form of means, standard deviation, minimum and maximum values of the dependent variable which was further described by income level and legal origin.

3.4 Estimation technique for the dependent variable: the Principal Component Analysis (PCA)

The principal component analysis was propounded in 1901 by Karl Pearson (Pearson, 1901) and was later formalized in the work of Harold Hotelling (Hotelling, 1933). The principal component analysis is a statistical method that makes use of an orthogonal transformation to convert a set of data under observation into a set of value of linearly uncorrelated variables. This process reduces the set of observed variables into principal components which retain information from the original set of variables as much as possible (Aluko and Ajayi, 2018). The generated principal component captures the variations in data as much as possible. Therefore, the study uses principal component

analysis to calculate the financial inclusion index for Sub-Saharan African countries. The first principal components which account for the highest proportion of variance were extracted as the index of financial inclusion. The summary statistics of the first principal components can be found in Appendix 2.

Unlike other methods that can be used to construct an index, such as the UNDP methodology and the distance-based method, where the weight allocated to the dimensions is subjective and the value of the resultant index is restricted between 0-1, the principal component analysis uses optimal weight devoid of researcher's bias. Furthermore, the resultant index does not fall within a predetermined range. The resultant principal components that account for the widest variances will be regarded as the most important while principal components that account for less variance are called noise (Shlens, 2003). The countries with the highest index are more financially included than those with least index, for instance, Seychelles is the most financially included while Gabon is the least financially included in the sample.

Studies that used principal component analysis to measure the level of financial inclusion are Zulaica Piñeyro (2013), who proposed a multidimensional measure for Mexico and Cámara and Tuesta (2014), who built a multidimensional financial inclusion index for eighty-two developed and less-developed countries.

3.5 Descriptive statistics

This sub-section provides a snapshot of countries in the sample and their level of financial inclusion by income level and legal origin aligning with previous studies such as Etudaiye-Muhtar (2016) and Sarma and Pais (2011) using charts, percentages and summary statistics. The list of countries based on their income level and legal origin can be found in Appendix 1.

3.5.1 Descriptive statistics based on income level
Figure no. 1 presents the classification of countries in the total sample size of the study by income level based on the World Bank classification.
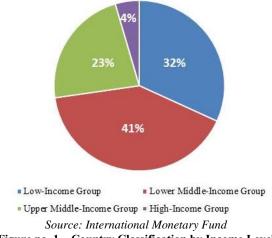

Source: International Monetary Fund
Figure no. 1 – Country Classification by Income Level

Figure no. 1 shows that lower middle-income countries dominate the sample. This represents 41% of the total sample size while low, upper middle and high-income countries represent 32%, 23%, and 4% respectively. Inferring from the distribution pattern, the level of financial inclusion may be driven by income level as stated by Sarma (2012). In order to verify whether this is applicable to Sub-Saharan Africa, the descriptive statistics is divided into various income levels.

3.5.2 Descriptive Statistics of IFI of Countries based on Income Level
Table no. 2 below presents the descriptive statistics of IFI of countries observed in the study by income level based on the World Bank classification.

Table no. 2 – Descriptive Statistics of IFI of Countries based on Income Level

Variable	Mean	Std. Dev.	Minimum	Maximum
Low-Income Countries				
IFI	0.1033174	0.9385362	-1.266358	1.976974
Lower Middle-Income Countries				
IFI	0.0897185	0.9489623	-1.399563	2.73861
Upper Middle-Income Countries				
IFI	0.0782884	1.060835	-1.103795	4.490731
High-Income Country				
IFI	0.168386	0.8519184	-.6486242	1.365228

Source: authors' computation from International Monetary Fund data

From Table no. 2, it is seen that high-income country has the highest mean of 0.168 followed by the low-income group with a mean of 0.103. The third and fourth are lower middle, and upper middle-income countries with 0.089 and 0.078 respectively. This implies that financial inclusion does not follow the same trend with the income level of the countries in the study. This perhaps maybe attributed to the fact that income is not the sole driver of financial inclusion (Demirgüç-Kunt *et al.*, 2017). This is in contrast with the argument of Sarma (2012) that income level and financial inclusion move in a similar direction. Nevertheless, this is supported by the argument of Allen *et al.* (2012) that the relationship between income level and financial inclusion is weak.

4. RESULTS AND DISCUSSION

4.1 Stylized facts

In this section, the study presents some stylized facts on the IFI values of the countries from 2005-2015 and the level of financial inclusion of Sub-Saharan Africa from 2005-2015.

4.1.1 Analysis of IFI value for Sub-Saharan African countries from 2005-2015
Table no. 3 shows the trend of IFI for each country in the sample from 2005 to 2015. This shows the fluctuation of the level of financial inclusion of these countries from year to year and their ability to achieve a better level of financial inclusion or otherwise.

Table no. 3 – IFI Ranking for Sub-Saharan African Countries from 2005-2015

Country	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Gabon	3	3	3	3	2	1	1	1	3	1	1
Cameroon	3	3	3	3	2	1	1	1	3	3	1
South Africa	3	3	3	2	1	1	1	1	1	3	2
Mauritius	3	3	3	2	1	1	1	1	3	3	3
Ghana	3	3	2	2	1	1	1	1	1	2	3
Seychelles	3	3	2	2	3	2	2	3	2	2	2
Swaziland	3	3	2	1	1	1	1	2	2	1	3
Nigeria	3	2	2	1	3	3	1	3	1	3	1
Chad	2	2	1	2	2	2	2	3	1	3	3
Uganda	2	2	1	1	1	3	3	3	2	1	3
Kenya	2	1	1	1	2	2	2	2	3	2	2
Tanzania	2	1	2	1	2	3	3	2	2	2	3
Equatorial G	2	3	3	2	2	2	2	2	1	3	3
Central Africa	2	2	1	1	1	3	3	3	2	1	1
Congo Rep	2	2	2	2	1	2	3	3	3	3	1
Namibia	1	2	3	3	3	2	2	2	3	2	2
Burundi	1	1	1	1	2	2	3	3	3	3	2
Gambia	1	2	1	3	3	1	3	1	1	1	1
Rwanda	1	1	3	3	3	3	2	1	2	1	3
Angola	1	1	1	3	3	3	3	3	1	1	1
Zambia	1	1	2	3	3	3	3	2	2	2	2
Lesotho	1	2	3	3	3	3	2	2	3	2	2

Source: Authors' computation

Table no. 3 above presents the IFI ranking of countries from 2005-2015. The level of financial inclusion year to year among the Sub-Saharan African countries measured by the IFI varies. In order to facilitate understanding and align with previous research such as Sarma (2012), the IFI is classified into high (1st to 8th country), medium (9th to 15th country) and low (16th to 22nd country by ranking) represented by 3, 2 and 1 respectively (see Appendix 3 for details). The ranking of countries based on the level of their IFI shows that countries that often have high IFI value (represented by 3) during 2005-2015 are Angola, Cameroon, Mauritius, Nigeria, Burundi, Rwanda and Lesotho. It is important to note that Angola, Burundi, Rwanda and Lesotho moved from low to high category. Most of the countries in these categories are lower middle and upper middle-income countries. However, Rwanda and Lesotho that are low-income countries often have high IFI during the study period. This is similar to the argument of Allen *et al.* (2012) that income level does not matter for financial inclusion. This provides support for the ability of low-income countries to be able to make it to the high IFI category. This is contrary to the findings of Yorulmaz (2013), who reported that the level of financial inclusion among regions and provinces in Turkey are according to their income level.

Furthermore, in this category, countries with French legal origin outnumbered the British, where Nigeria and Lesotho were the only countries. This implies that British legal origins are not more financially included than their French counterpart. This is however not in line with the postulation of La Porta *et al.* (1998). Nevertheless, this is supported by the

argument of Fowowe (2014) who states that legal origin does not matter for financial development in Africa.

Countries that are consistently in the middle category (represented by 2) are Seychelles, Chad, Kenya, Tanzania, Equatorial Guinea, Congo, Namibia, and Zambia. It is important to note that Seychelles dropped from the high category, where it was in the earlier years, while Namibia and Zambia rose from the low category. Among countries consistent in the middle category, only Seychelles is a high-income country, Namibia and Equatorial Guinea are upper middle-income countries; Zambia, Congo, and Kenya are lower middle-income countries while Tanzania and Chad are low-income countries. Seychelles, Chad, Equatorial Guinea and Congo are of French legal origin while Kenya, Tanzania, Namibia, and Zambia are of British legal origin.

Gabon, South Africa, Ghana, Swaziland, Uganda, Central Africa and the Gambia are more consistent in the low category (represented by 1). Gabon and South Africa are upper middle-income countries, Ghana and Swaziland are from the lower middle-income group while other countries in this category are of low-income countries. Most of these countries are of British legal origin except Gabon and Central Africa.

Due to the vigorous effort by different stakeholders to improve financial inclusion in individual countries and across the region, the expectation is increase in financial inclusion and not reduction (Sarma, 2012). Countries such as Rwanda made it from the low category in 2005 to the high category later during the study period. Also, Lesotho made it from the low category to the middle then to the high category. This improvement may be associated with their commitment to the Maya declaration and the willingness to achieve the vision 2020. However, despite the remarkable improvement by some countries, Gabon, South Africa, Ghana and Swaziland showed more decline in their IFI during the study period.

South Africa witnessed a reduction in IFI, a close look at the data indicates that the decline may be linked to a reduction in mobile banking outlets. This may be associated with the evolution of technology in an effort to increase financial inclusion which linked the conventional bank account with that of the mobile money account. This enables users to access their mobile money account from the conventional banks. Therefore, this may reduce the need for the physical outlet of the nonconventional banks.

Gabon experienced a reduction in IFI within the study period which may be linked to a reduction in the patronage of the nonconventional banks. It may be that the conventional banks engaged in the provision of competitive products similar to those of the non-conventional banks. It has earlier been noted by Alter and Yontcheva (2015) that financial sector development in Gabon has been declining while economic growth increases.

Furthermore, Ghana and Swaziland experienced a reduction in conventional banking physical outlets which might perhaps be linked to decrease in its IFI. This may be attributed to increased use of other non-conventional means of accessing account, which is fast spreading across the region.

4.1.2 Trend of the level of Financial Inclusion in Sub-Saharan Africa 2005-2015

Apart from the trend of IFI value of each country from 2005 to 2015, the study also shows the trend of the level of financial inclusion in Sub-Saharan Africa as a whole from 2005 to 2015 in order to have an overall view.
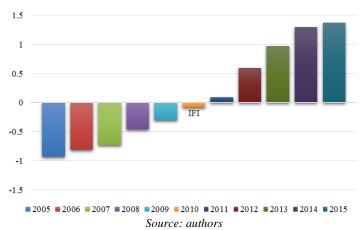
Source: authors
Figure no. 2 – Trend of Financial inclusion in Sub-Saharan Africa 2005-2015

Figure no. 2 above shows the trend of financial inclusion in Sub-Saharan Africa from 2005-2015. For the region as a whole, the study found that financial inclusion grew steadily throughout the past decade, with high growth after the Maya Declaration in 2011 in which most of the countries that have made this commitment are Sub-Saharan. The Maya Declaration was followed by the issuance of financial inclusion Strategy across the region, which helps in the achievement of greater IFI. However, growth slowed down in the latter years between 2014 and 2015. Nevertheless, this finding is in line with Andrianaivo and Yartey (2010), who argued that financial depth has increased over time in Africa, contrary to that of Yorulmaz (2013) who reported the decreasing level of financial inclusion over time in Turkey.

4.2 Analysis on the level of Financial Inclusion in Sub-Saharan Africa

The objective of the study sought to measure the level of financial inclusion in Sub-Saharan Africa. In order to achieve this objective, different indicators under the three dimensions of financial inclusion were used to compute the level of financial inclusion using PCA. Table no. 4 presents the result of PCA on the level of financial inclusion in Sub-Saharan Africa.

Table no. 4 presents the average IFI of each country in the sample from 2005-2015. This ranking shows sharp disparities in the level of financial inclusion among Sub-Saharan African countries ranging from high to low category as earlier mentioned.

Seychelles, Namibia, Lesotho, Angola, Gambia, Rwanda, Congo Republic, and Equatorial Guinea are the countries in the high category with 0.168386, 0.15083, 0.136725, 0.136693, 0.133148, 0.115124, 0.111614 and 0.108703 IFI value respectively. These countries belong to the high, upper middle and low-income level. Countries in this category with French legal origin are Seychelles, Angola, Rwanda, Congo Republic and Equatorial Guinea while Namibia, Lesotho and the Gambia are of British legal origin.

Countries in the second category are Zambia, Burundi, Chad, Central Africa, Tanzania, Kenya and Uganda with 0.104645, 0.102321, 0.099566, 0.096328, 0.094234, 0.085389, and 0.082501 IFI value respectively. These countries are low-income countries except, Zambia and Kenya that are lower middle-income countries. Burundi, Chad and Central Africa are

countries with French legal origin while Zambia, Tanzania, Kenya and Uganda are countries with British legal origin in this category.

Table no.4 – Level of Financial Inclusion in Sub-Saharan Africa

Name of Country	IFI	IFI Category	Ranking based on IFI
Seychelles	0.168386	High	1
Namibia	0.15083	High	2
Lesotho	0.136725	High	3
Angola	0.136693	High	4
Gambia	0.133148	High	5
Rwanda	0.115124	High	6
Congo Rep	0.111614	High	7
Equatorial G	0.108703	High	8
Zambia	0.104645	Medium	9
Burundi	0.102321	Medium	10
Chad	0.099566	Medium	11
Central Africa	0.096328	Medium	12
Tanzania	0.094234	Medium	13
Kenya	0.085389	Medium	14
Uganda	0.082501	Medium	15
Nigeria	0.079306	Low	16
Swaziland	0.05658	Low	17
Ghana	0.05274	Low	18
Mauritius	0.049836	Low	19
South Africa	0.044958	Low	20
Cameroon	0.043776	Low	21
Gabon	0.037116	Low	22
Sub-Saharan Africa	0.095023	Medium	

Source: authors' computation

Nigeria, Swaziland, Ghana, Mauritius, South Africa, Cameroon and Gabon belong to the low IFI category with 0.079306, 0.05658, 0.05274, 0.049836, 0.044958, 0.043776, and 0.037116 IFI value respectively. Nigeria is the only country from the lower middle-income group while Mauritius, South Africa and Gabon are upper middle countries. Other countries in this category are low-income countries. Similarly, Mauritius, Cameroon and Gabon are countries with French legal origin while Nigeria, Swaziland, Ghana and South Africa are of the British legal origin in this category.

The study shows that the IFI value for Sub-Saharan Africa as a whole is 0.095023 when compared with other IFI value, this indicates that financial inclusion in Sub-Saharan Africa is in the medium category.

4.3 Discussions of findings

In relation to the research objective, the result shows sharp disparities in the level of financial inclusion among Sub-Saharan African countries ranging from high to low IFI category.

Countries in the high IFI category are Seychelles, Namibia, Lesotho, Angola, Gambia, Rwanda, Congo Republic, and Equatorial Guinea. The presence of middle-income countries in this category is supported by the evidence put forth by Yorulmaz (2013) that middle-income countries also have a high level of financial inclusion. These countries belong to the high, upper middle and low-income level. This group which is characterized by different income group buttresses the argument of Demirgüç-Kunt and Klapper (2012) that even among countries with similar income level and in the same region, their financial inclusion level may differ. It is interesting to note that Gambia, and Rwanda that are low-income countries were able to make it to the high IFI category, where a high-income country like Seychelles was found. This is similar to the argument put forth by Naceur et al. (2015), who stated that low and lower middle income countries also show a high growth rate of financial inclusion. Logically, low-income countries are aware of their problem, such as financial exclusion, low financial development among others, therefore strive really hard to overcome these problems by making Maya Declaration, issuing financial inclusion strategy, licensing MFIs, etc., which therefore transform into a better level of financial inclusion. This contrasts with the finding of Amidžić et al. (2014), who argued that low-income countries tend to have low financial inclusion.

Furthermore, the number of countries with French legal origin that have high IFI outnumbered their British counterparts. This is in line with the finding and the assertions of Fowowe (2014) that legal origin does not matter for financial development in Africa. However, it is in stark contrast to the finding of Beck et al. (2003). The outstanding performance of these countries may perhaps be due to the effort by the Anglophones on various initiatives such as mobile banking, agent banking, cashless policy, microfinance policy, non-interest banking policies among others (Kankasa-Mabula, 2012; M'Amanja, 2015). This may also be attributed to the countries' commitment to Maya Declaration and determination to achieve Universal Financial Access by 2020 as declared by World Bank.

Countries in the second category are Zambia, Burundi, Chad, Central Africa, Tanzania, Kenya, and Uganda. Except for Zambia and Kenya that are lower middle-income countries, other countries in this category are low-income countries.

Zambia, Tanzania, Kenya, and Uganda are countries with British legal origin in this category while Burundi, Chad and Central Africa are countries with French legal origin in this category.

Nigeria, Swaziland, Ghana, Mauritius, South Africa, Cameroon and Gabon belong to the low IFI category. Nigeria is the only country from the lower middle-income group while Mauritius, South Africa, and Gabon are upper middle countries. Other countries in this category are low-income countries. The presence of Nigeria in the low IFI category speak to the fact that mobile money which is highly responsible for attracting people into the formal financial system especially in Sub-Saharan Africa is just coming up in Nigeria. This might have contributed to her inability to compete favorably with other Sub-Saharan African countries in the study. South Africa's inability to have a better level of IFI may be attributed to gross inequality which still affect financial inclusion in the country. The level of IFI of Mauritius and Gabon is probably a reflection of the degree of inequality, segregation rather than income. Nigeria, Swaziland, Ghana and South Africa are countries with British legal origin in this category while Mauritius, Cameroon, and Gabon are countries with French legal origin in this category. It is important to note that the low IFI category is not wholly dominated by low-income countries.

The study found that the level of financial inclusion in Sub-Saharan Africa is at the medium category, implying that the level of financial inclusion has only improved in the region with lots of room for improvement in the nearest future.

5. CONCLUSION AND POLICY IMPLICATIONS

In view of the background that financial inclusion is important for economic growth through redistribution of economic resources, this study examines the level of financial inclusion in Sub-Saharan Africa covering 22 countries for the period 2005-2015 utilizing the principal component analysis. These Sub-Saharan Africa countries have undergone various policies and initiatives aimed at improving financial inclusion. Following standard finance literature, the study includes indicators and dimensions to determine the level of financial inclusion in the region for the first time. The result shows that Seychelles has the highest level of financial inclusion, while Gabon has the lowest among the Sub-Saharan African countries observed. The aggregate results show that Sub-Saharan African has a medium level of financial inclusion. This suggests that financial inclusion in the region has improved steadily over the period of study.

This study suggests that policies designed to improve financial inclusion for the region should not be focused on the low income countries alone as some of this counties have better level of financial inclusion than some high income countries. Therefore, policies design to boost financial inclusion should focus mainly those countries with low level of financial inclusion regardless of their income level. Furthermore, the study advocates that improving the standard of financial sector of the countries that are of British legal origin is a policy mechanism to improve financial inclusion in the region as the countries that are of French legal origin are more financially included. Also, maintaining the implementation of policies introduced during the study period such as mobile banking, agent banking, microfinance policy among others, are important for continuous improvement in financial inclusion. Lastly, this study suggests that enhancing the quality and coverage of mobile banking in countries where it is already in existence and introducing it to countries which are yet to use mobile banking would foster financial inclusion in the region.

Note

This paper is part of the Ph.D. dissertation titled " Determinants of financial inclusion in Sub-Saharan Africa" submitted to the Department of Accounting and Finance, College of Humanities, Management and Social Sciences, Kwara State University, Malete, Nigeria, in partial fulfillment of the award of Doctor of Philosophy (Ph.D.) in Finance.

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Appendix 1

List of Countries

Country	Legal Origin	Income Level
Angola	French	Lower Middle
Burundi	French	Low Income
Cameroon	French	Lower Middle
Central Africa	French	Low Income
Chad	French	Low Income
Congo Republic	French	Lower Middle

Country	Legal Origin	Income Level
Gabon	French	Upper Middle
Gambia	British	Low Income
Ghana	British	Lower Middle
Kenya	British	Lower Middle
Lesotho	British	Lower Middle
Mauritius	French	Upper Middle
Namibia	British	Upper Middle
Nigeria	British	Lower Middle
Rwanda	French	Low Income
Seychelles	French	High Income
South Africa	British	Upper Middle
Swaziland	British	Lower Middle
Tanzania	British	Low Income
Uganda	British	Low Income
Zambia	British	Lower Middle
Equatorial Guinea	French	Upper Middle

Appendix 2

Summary Statistics of the First Principal Components

Country	Variance	Eigenvalue
Angola	0.93	278.884
Burundi	0.93	277.941
Cameroon	0.62	187.266
Central Africa	0.95	283.990
Chad	0.88	263.947
Congo Republic	0.90	271.087
Gabon	0.77	232.246
Gambia	0.77	231.942
Ghana	0.97	291.237
Kenya	0.66	197.838
Lesotho	0.92	274.868
Mauritius	0.84	253.247
Namibia	0.87	262.013
Nigeria	0.69	205.722
Rwanda	0.92	275.175
Seychelles	0.72	214.794
South Africa	0.84	252.047
Swaziland	0.91	273.738
Tanzania	0.96	286.819
Uganda	0.89	267.349
Zambia	0.90	268.909
Equatorial Guinea	0.81	242.355

Appendix 3

IFI Value for Sub-Saharan African Countries from 2005-2015

Country	2005	IFI Category	Country	2006	IFI Category	Country	2007	IFI Category
Gabon	-0.40828	High	Seychelles	-0.39335	High	Gabon	-0.40827	High
Cameroon	-0.48152	High	Gabon	-0.40827	High	Cameroon	-0.48153	High
South Africa	-0.49451	High	Cameroon	-0.48151	High	Namibia	-0.4824	High
Mauritius	-0.54818	High	South Africa	-0.4945	High	South Africa	-0.49452	High
Ghana	-0.58014	High	Mauritius	-0.54818	High	Rwanda	-0.51928	High
Seychelles	-0.6043	High	Ghana	-0.58013	High	Mauritius	-0.54817	High
Swaziland	-0.62237	High	Swaziland	-0.62237	High	Lesotho	-0.56883	High
Nigeria	-0.87236	High	Equatorial G	-0.65173	High	Equatorial G	-0.5749	High
Chad	-0.87447	Medium	Namibia	-0.76022	Medium	Ghana	-0.58013	Medium
Uganda	-0.90751	Medium	Gambia	-0.7617	Medium	Swaziland	-0.62236	Medium
Kenya	-0.93928	Medium	Chad	-0.83112	Medium	Seychelles	-0.64862	Medium
Tanzania	-1.03658	Medium	Lesotho	-0.87058	Medium	Congo Rep	-0.82722	Medium
Equatorial G	-1.05094	Medium	Nigeria	-0.87236	Medium	Zambia	-0.84963	Medium
Central Africa	-1.07306	Medium	Uganda	-0.90751	Medium	Nigeria	-0.87236	Medium
Congo Rep	-1.08306	Medium	Congo Rep	-0.93837	Medium	Tanzania	-0.87387	Medium
Namibia	-1.1038	Low	Kenya	-0.93927	Low	Chad	-0.88841	Low
Burundi	-1.13846	Low	Burundi	-0.96552	Low	Cent.Africa	-0.88993	Low
Gambia	-1.17643	Low	Cent.Africa	-0.99861	Low	Kenya	-0.90217	Low
Rwanda	-1.26636	Low	Tanzania	-1.03658	Low	Angola	-0.90233	Low
Angola	-1.33312	Low	Angola	-1.14343	Low	Uganda	-0.90751	Low
Zambia	-1.33626	Low	Zambia	-1.26432	Low	Burundi	-0.91835	Low
Lesotho	-1.39956	Low	Rwanda	-1.26636	Low	Gambia	-1.14454	Low

Country	2008	IFI Category	Country	2009	IFI Category	Country	2010	IFI Category
Gambia	1.665221	High	Nigeria	0.650694	High	Nigeria	1.235022	High
Rwanda	-0.2044	High	Angola	0.327199	High	Rwanda	0.501021	High
Lesotho	-0.28919	High	Gambia	0.309593	High	Angola	0.368898	High
Zambia	-0.3159	High	Rwanda	0.278262	High	Uganda	0.247577	High
Namibia	-0.37024	High	Zambia	-0.05319	High	Cent.Africa	0.201903	High
Gabon	-0.40826	High	Lesotho	-0.13892	High	Zambia	0.141746	High
Angola	-0.41243	High	Namibia	-0.27141	High	Lesotho	0.123116	High
Cameroon	-0.48152	High	Seychelles	-0.33734	High	Tanzania	0.033718	High
South Africa	-0.49449	Medium	Tanzania	-0.35034	Medium	Burundi	-0.03508	Medium
Equatorial G	-0.51347	Medium	Gabon	-0.40825	Medium	Kenya	-0.09259	Medium
Mauritius	-0.54816	Medium	Kenya	-0.42992	Medium	Congo Rep	-0.0993	Medium
Seychelles	-0.56687	Medium	Chad	-0.44098	Medium	Equatorial G	-0.19259	Medium
Ghana	-0.58013	Medium	Burundi	-0.45684	Medium	Chad	-0.2237	Medium
Chad	-0.58956	Medium	Equatorial G	-0.46451	Medium	Namibia	-0.23904	Medium
Congo Rep	-0.61193	Medium	Cameroon	-0.48146	Medium	Seychelles	-0.36176	Medium
Swaziland	-0.62236	Low	South Africa	-0.49447	Low	Gabon	-0.40825	Low
Burundi	-0.66401	Low	Congo Rep	-0.54055	Low	Gambia	-0.41036	Low
Tanzania	-0.69898	Low	Mauritius	-0.54814	Low	Cameroon	-0.42782	Low
Central Africa	-0.7255	Low	Ghana	-0.58013	Low	South Africa	-0.49447	Low
Kenya	-0.80014	Low	Cent.Africa	-0.58139	Low	Mauritius	-0.54813	Low
Nigeria	-0.87236	Low	Swaziland	-0.62235	Low	Ghana	-0.58012	Low
Uganda	-0.90751	Low	Uganda	-0.9075	Low	Swaziland	-0.62235	Low

Country	2011	IFI Category	Country	2012	IFI Category	Country	2013	IFI Category
Angola	1.038536	High	Cent.Africa	1.801224	High	Gabon	4.490731	High
Uganda	0.737841	High	Seychelles	1.332907	High	Mauritius	1.319185	High
Cent.Africa	0.698383	High	Nigeria	1.26337	High	Congo Rep	1.284431	High
Gambia	0.667382	High	Angola	1.095656	High	Cameroon	1.260979	High
Burundi	0.593602	High	Congo Rep	1.04492	High	Kenya	1.260492	High
Congo Rep	0.580659	High	Burundi	0.941835	High	Namibia	1.236385	High
Zambia	0.360826	High	Uganda	0.91987	High	Burundi	1.123502	High
Tanzania	0.340657	High	Chad	0.861088	High	Lesotho	1.053804	High
Lesotho	0.292628	Medium	Swaziland	0.836373	Medium	Zambia	1.032996	Medium
Namibia	0.139771	Medium	Namibia	0.823846	Medium	Seychelles	0.952304	Medium
Kenya	0.110449	Medium	Equatorial G	0.689844	Medium	Tanzania	0.905939	Medium
Chad	0.053035	Medium	Zambia	0.686357	Medium	Central Africa	0.875532	Medium
Rwanda	0.005384	Medium	Kenya	0.608185	Medium	Swaziland	0.840375	Medium
Seychelles	-0.11193	Medium	Tanzania	0.605603	Medium	Uganda	0.780583	Medium
Equatorial G	-0.17226	Medium	Lesotho	0.459275	Medium	Rwanda	0.68295	Medium
Cameroon	-0.30563	Low	Ghana	0.394096	Low	Equatorial G	0.652767	Low
Nigeria	-0.33045	Low	Gambia	0.108915	Low	Chad	0.630536	Low
Gabon	-0.40824	Low	Cameroon	0.104374	Low	Angola	0.591285	Low
South Africa	-0.49447	Low	Rwanda	-0.0056	Low	South Africa	0.566355	Low
Mauritius	-0.54812	Low	Gabon	-0.40822	Low	Ghana	0.523355	Low
Ghana	-0.58012	Low	South Africa	-0.49447	Low	Gambia	0.187245	Low
Swaziland	-0.62233	Low	Mauritius	-0.54812	Low	Nigeria	-0.79725	Low

Country	2014	IFI Category	Country	2015	IFI Category
Cameroon	2.73861	High	Ghana	2.549647	High
South Africa	2.625995	High	Swaziland	2.373627	High
Mauritius	1.696579	High	Equatorial G	2.076085	High
Chad	1.54763	High	Rwanda	1.976974	High
Nigeria	1.458959	High	Mauritius	1.917624	High
Congo Rep	1.404043	High	Chad	1.851177	High
Burundi	1.398954	High	Tanzania	1.843258	High
Equatorial G	1.397429	High	Uganda	1.688735	High
Zambia	1.397106	Medium	Lesotho	1.679856	Medium
Kenya	1.385761	Medium	Kenya	1.677749	Medium
Seychelles	1.365228	Medium	Namibia	1.584014	Medium
Tanzania	1.303742	Medium	Zambia	1.351365	Medium
Ghana	1.173936	Medium	South Africa	1.258082	Medium
Lesotho	1.162366	Medium	Burundi	1.245894	Medium
Namibia	1.102218	Medium	Seychelles	1.225977	Medium
Gambia	1.090063	Low	Angola	1.084894	Low
Rwanda	1.083761	Low	Congo Rep	1.014135	Low
Uganda	1.070457	Low	Gambia	0.929238	Low
Swaziland	0.9285	Low	Nigeria	0.881473	Low
Central Africa	0.875532	Low	Central Africa	0.875532	Low
Angola	0.788467	Low	Gabon	-0.40821	Low
Gabon	-0.40821	Low	Cameroon	-0.48144	Low

Source: Authors' computation

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