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PAN-ATLANTIC UNIVERSITY



# THE NEXUS OF FINANCIAL INCLUSION AND JOB CREATION IN NIGERIA

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Authors: Adedoyin Salami, Ikechukwu Kelikume, Faith Iyoha

## Executive Summary

Nigeria continues to contend with significant levels of unemployment, which is more acute when its burgeoning youth demographic is considered. As a developing country with a substantial informal economy, Nigeria has limited penetration of financial services, with many economic agents financially excluded. These two challenges constitute important developmental aspirations, especially when considered in light of the United Nations' Sustainable Development Goals (SDGs).

Against this backdrop, this study examines the nexus between financial inclusion and job creation in Nigeria using quarterly time series data running from 2008Q1 to 2016Q4. It employs a 3-variable vector autoregression system comprising interactions between financial inclusion (FI) – disaggregated to separate formal financial inclusion (FFI) from informal financial inclusion (IFI). Both are treated as separate variables in addition to overall financial inclusion, net job creation (NJB) and per capita income (PCI), introduced for model stability as well as recognising its role as a transmission variable between financial inclusion and job creation.

Our results indicate a bi-directional causal relationship between financial inclusion and job creation. However, the results also reveal strong reflexivity. Previous levels of financial inclusion and

job creation are found to be the predominant predictor of current levels of financial inclusion and job creation, respectively.

As such, the study recommends the continued tenacious pursuit of financial inclusion as a policy aspiration.

“Our results indicate a bi-directional causal relationship between financial inclusion and job creation. However, the results also reveal strong reflexivity.”





## SECTION 1

# INTRODUCTION

**F**inancial inclusion and job creation are essential elements of the discussion around sustainable development in developing and emerging markets following the adverse effect of the 2007 global financial crisis, especially against the backdrop of the mounting pressure imposed by the large presence youthful demographics in the largest of these markets.

The demographic challenges are enormous. Depending on the applicable definition, global youth population is projected to rise from 1.2 billion today to 1.6 billion in 2050, in the delineated category of individuals aged 15–24, and from 2.9 billion to about 3.7 billion in the 15–39 age range, according to United Nations World Population Projection 2017 estimates. Disaggregated, the data shows that Africa's youth population is projected to rise from 20 percent today to 38 percent of the world youth total in 2050, in the 15–24 age bracket. The corresponding evolution for the wider 15–39 bracket is from 17 percent to 33 percent.

These demographic realities highlight a massive developmental challenge for the wider world, and for Africa and Nigeria in particular. Financial inclusion and job creation, two development policy aspirations connected by their capacity to create employment opportunities for the coming youth bulge, are inevitably central to the conversation.

At a macro level, development policy has inclusive growth,<sup>1</sup> underpinned by job creation, as its central paradigm. In focusing on youth, the inclusive growth paradigm partly explores the extent to which young people are engaged in productive activities in the digital space due to increased access to and familiarity with information and communication technology (ICT). This aspiration towards inclusive growth, coupled with the disposition of the youthful demographic towards ICT, has elevated financial inclusion as one of the pillars of the global development agenda.

Employment and financial inclusion are indicators and targets associated with 4 of 17 new goals adopted in 2015 as Sustainable Development Goals (SDGs) by the United Nations in the effort to eliminate global poverty and inequality by 2030 (United Nations, 2015). What remains to be seen is the extent to which there is a substantial causal or explanatory relationship between the two, and whether the relationship(s), if they exist, are bidirectional.

Financial Inclusion (FI) — the access to and use of diverse

financial services by consumers, enterprises, and governments at an affordable cost — has become an anchor to accelerate growth and facilitate job creation. The McKinsey Global Institute (2016), using data from seven emerging and developing economies (including Nigeria), estimates that the additional gains in economic output from greater adoption and use of digital financial services would expand aggregate demand and create nearly 95 million new jobs across various sectors worldwide, a 3.5 percent increase from current levels, by 2025. Two-thirds of these new jobs are likely to be full-time salaried or wage-paying positions that are in short supply in the developing world. The cited MGI report is, however, a rare study of this relationship. Very few studies have rigorously tested the impact of financial inclusion on employment and job creation.

The gravity of youth unemployment in Nigeria has been under consideration for a long time. In the past, it was largely regarded based on anecdotal evidence. Recently, the ongoing regularization and publication of labour market statistics in Nigeria makes for a more scientific appreciation of the problem. The picture, exacerbated by Nigeria's economic recession in 2016, is grim. As of the time of writing, the combined unemployment and underemployment rate stands at 40 percent.<sup>2</sup>

“Financial inclusion and job creation are essential to discussions around sustainable development in developing and emerging markets following the adverse effects of the 2007 global financial crisis”

<sup>1</sup> Inclusive growth is a growth trajectory that allows for a level playing field across all sectors of the economy by enforcing policies that allows people to contribute to and benefit from economic growth

<sup>2</sup> Estimates are for Q3-2017

The evolution of financial inclusion conditions run contrary to the expectation that an increasingly ICT-compliant population would exhibit higher levels of financial inclusion. Financial inclusion conditions, assessed and measured by the development organization, Enhancing Financial Innovation & Access (EFInA), have recently deteriorated. The financial exclusion rate has increased to 41.6 percent in 2016, up from 39.5 in 2014.

This report presents a framework for analysing the link between FI and employment outcomes. Questions raised in the report include; does increased FI lead to creation of more jobs? Does intensification of job creation among the youth foster increased FI? What is the direction of causation between formal financial inclusion (FFI), informal financial inclusion (IFI) and job creation and what time does it take for shocks in FFI and IFI to make significant impact on job creation? In the current economic environment, in-depth knowledge of the relationship between

FI and job creation is crucial to achieving at least 4 of the 17 newly adopted SDGs targeted at eliminating poverty and inequality by 2030.

The rest of the report is organised as follows: Section 2 presents an overview of financial inclusion, the labour force, unemployment and job creation in Nigeria; section 3 reviews relevant literature on the financial inclusion–job creation relationship; section 4 displays the framework to analyse the FI–job creation nexus; section 5 presents the model, method of estimation and data sources; section 6 reports the empirical results generated from data analysis, their implications and accompanying recommendations while section 7 concludes the study.





## SECTION 2:

# Labour Force, Unemployment and Job Creation in Nigeria: An overview

## Financial Inclusion in Nigeria – A Background

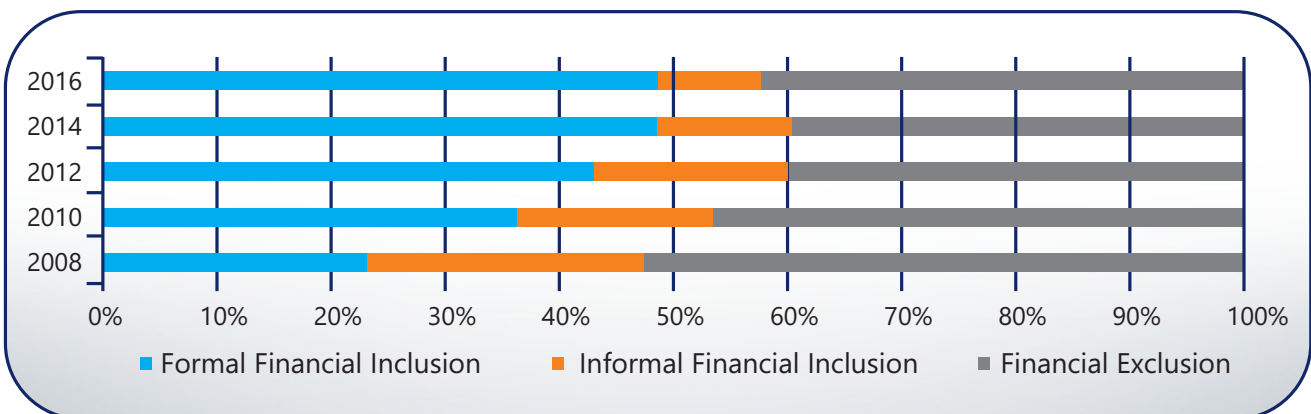
Financial inclusion as a policy aspiration in Nigeria is guided by the National Financial Inclusion Strategy (NFIS), put forward in 2012 by the Central Bank of Nigeria (CBN), in collaboration with other stakeholders.

Against the backdrop of low penetration of financial services, across both traditional and technology-driven channels, the 2012 NFIS set specific targets, particularly in the availability of financial services technology and infrastructure, in order to increase the footprint of the various financial access channels across the country. These targets, which were intended to be attained by 2020, included:

- i. Increasing deposit money bank branches to 7.6 units per 100,000 adults from 6.8 units in 2010
- ii. Increasing microfinance bank branches to 5.5 units per 100,000 adults from 2.9 units in 2010
- iii. Increasing automated teller machines (ATMs) deployed to 203.6 units per 100,000 adults from 11.8 units in 2010
- iv. Increase point of sale (PoS) terminals deployed to 850 units per 100,000 adults from 13.3 units in 2010
- v. Increase mobile agents to 62 units per 100,000 adults from 0 units in 2010

Data from World Bank (WB)<sup>3</sup> suggests that as at 2016, Nigeria has 5 units of deposit money bank branches per 100,000 adult (a decline from 6.8 units in 2010) and 17 units of automated teller machines (ATMs) deployed per 100,000 adults representing a far cry from the targeted 203.6 units. Regardless of the marginal progress attained in making financial access infrastructure more readily available, improvements in financial inclusion conditions have not been without setbacks. Figure 1 shows that financial exclusion in Nigeria stood at 41.6 percent as at the end of 2016 (EFInA, 2016) representing a 2.1 percentage point increase from 39.5 percent in 2014.

This marginal increase in financial exclusion may be connected with the decrease recorded in informal financial inclusion associated with the 2016-2017 economic recession in Nigeria.



**Figure 1: Trends in Formal and Informal Financial Inclusion in Nigeria**

Source: Authors' computation, 2018 (Data sourced from EFInA, 2016)

<sup>3</sup> Data downloaded 30 April, 2018

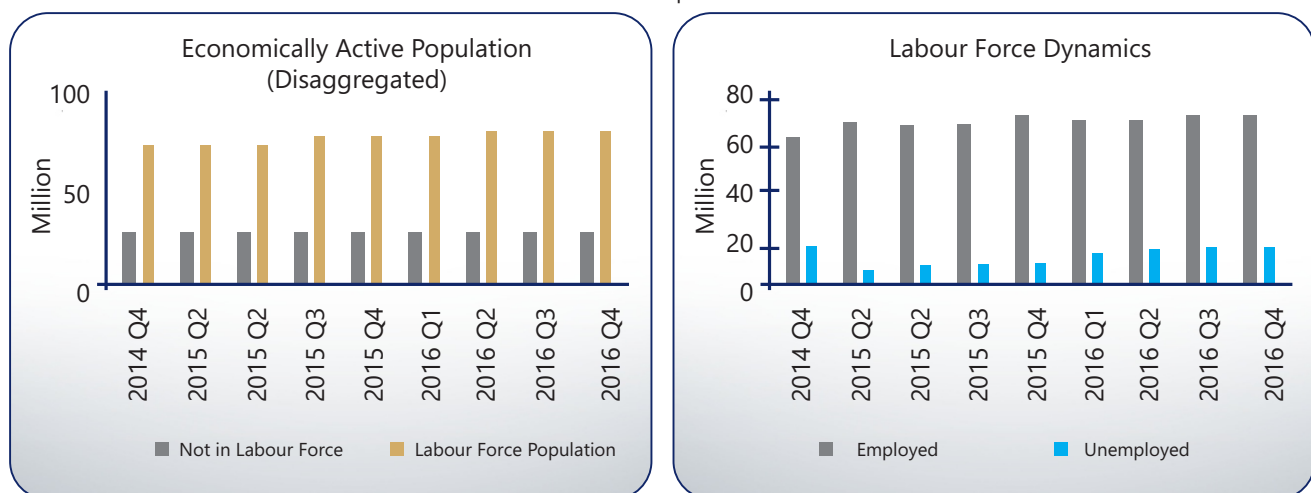
## Labour Force, Unemployment and Job Creation in Nigeria: An overview

The dynamic nature of Nigeria's population, the structure and composition of the labour market and the definitions applied to the labour force provide an interesting launch point for an assessment of the scale of the challenges faced in striving toward the developmental aspirations of job creation and financial inclusion. Nigeria's population has been growing at an average of 2.6 percent or thereabouts since the early 2000s.

With the regularization of labour market statistics in Nigeria in recent years, data on labour market conditions are now available on a quarterly basis. Quarterly data from the National Bureau of Statistics shows that the labour force, individuals within the age bracket 15-64 (representing about 54.94 percent of the total

population) recorded an average growth of 1.2 percent between Q1-2014 and Q3-2017. Figure 2 shows the trend in the economically active population and labour force dynamics in Nigeria. Naturally, the economically active population surpasses the labour force. As of Q3-2017, the period for which the latest data are available, an active labour force of about 85.1 million people arises out of an economically active population of 111.1 million. The resulting labour force participation rate is 76.6 percent.

Unemployment is defined by the number of work hours per week and this has three dimensions: those doing nothing i.e. work 0 hours per week; those who work less than 20 hours per week as well as those who work 20-39 hours per week (the underemployed); and individuals working 40 or more hours weekly (employed). Judging by the foregoing, in Q3-2017, unemployment rate (sum of those doing nothing and those that work less than 20 hours per week) as a ratio of total labour force was 18.8 percent whilst underemployment rate was 21.2 percent.

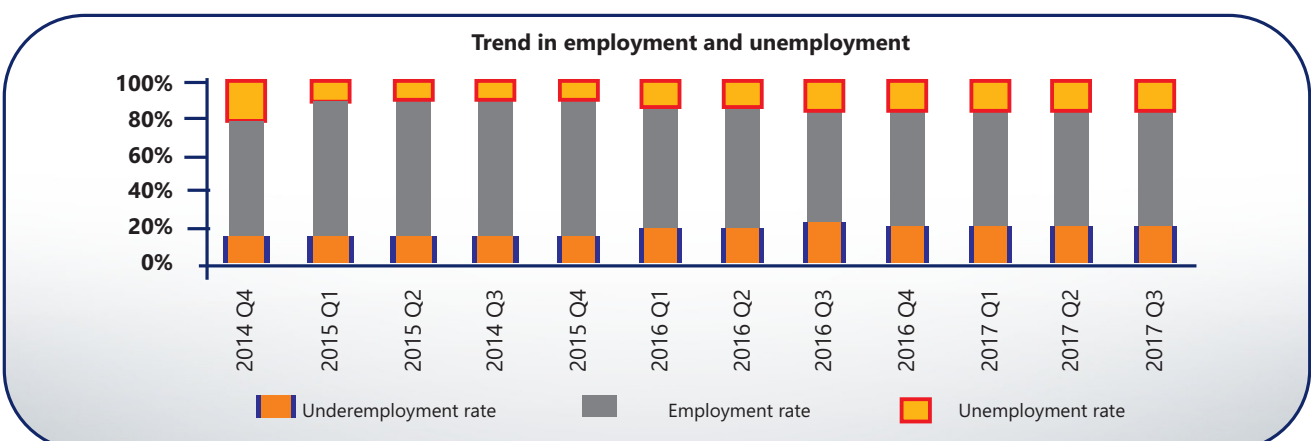


**Figure 2: Trends in Economically Active Population and Labour Force Dynamics**

Source: Authors' computation, 2018 (Data sourced from National Bureau of Statistics, 2017)

The trend in employment and unemployment suggests that employment rate has continued to decline, from 76 percent of the total labour force in Q1-2015 to 60 percent in Q3-2017. The rate of underemployment and unemployment within this same period has increased from 17 percent to 21 percent and 8

percent to 19 percent respectively, giving a combined unemployment and underemployment rate of approximately 40 percent. Whilst underemployment remains prevalent in the country, the rate of increase in unemployment is quite alarming.



**Figure 3: Trend in Employment and Unemployment in Nigeria**

Source: Authors' computation, 2018 (Data sourced from National Bureau of Statistics, 2017)

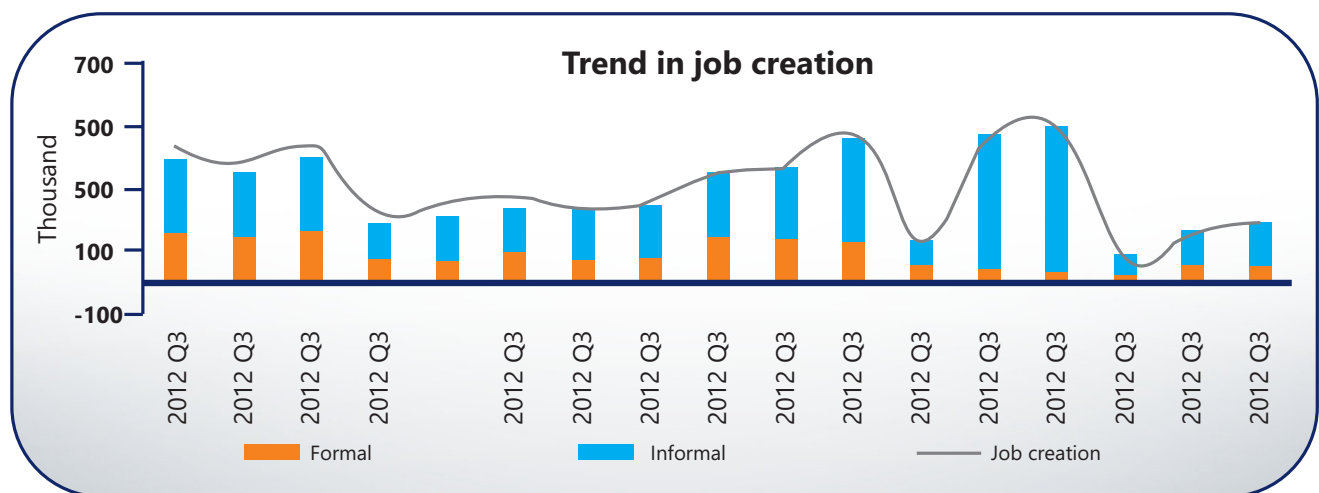


Nigeria's employment and job creation policies have had a chequered history. Policy initiatives aimed at spurring job creation have often been embedded in wider economic growth and development agendas, in the anticipation that job creation would be an inevitable by-product of the attainment of the targets set under the policy. These have included programmes such as Operation Feed the Nation (OFN) and the Green Revolution, which both illustrate an underlying philosophical reliance on the Agriculture sector as a job creator. Other policy initiatives with employment generation as implicit objectives include the creation of Directorate of Food, Roads, and Rural Infrastructure (DFRRI) and the National Economic Empowerment and Development Strategy (NEEDS). The National Directorate of Employment (NDE) was created in 1986 to address the unemployment challenges arising from the economic dislocations of the 1980s. More recently, employment policy has been defined under auspices of the National Employment Policy (NEP), first proposed in 2002, but was overhauled under Nigeria's current administration in 2016. Also worthy of mention are special employment generation youth-targeted interventions such as the Federal Government-

directed Youth Enterprise With Innovation in Nigeria (YOU-WIN).

The absence or unreliability of data that dates back previous decades complicates any evaluation of the performance of previous employment policy thrusts. Recent and significantly more reliable data paints a grim picture for employment generation, especially in light of the job-creation imperatives created by Nigeria's demographic characteristics.

Figure 4 shows the trend in job creation between 2012 and 2016. The trend shows that the new jobs created in every quarter are insufficient to match growth in the labour force, hence the continuous rise in the level of unemployment in the country which stood at 18.8% in Q3-2017 from 16.2% in Q2-2017. The data also reveals a concentration of job creation in the informal sector. Informal Jobs (those generated by individuals or businesses employing less than 10 people or those businesses operating with little or no structure e.g. those in agriculture, light manufacturing, trade, etc.) contribute over 77 percent of jobs created in Q3-2016.



**Figure 4: Trend in Job Creation in Nigeria**

Source: Authors' computation, 2018 (Data sourced from National Bureau of Statistics, 2017)

Expectedly, job creation slowed significantly as the Nigerian economy plunged into a recession in 2016. Job creation statistics are not available beyond the third quarter of 2016, but the trend they depict is one of a significant decline in the number of new jobs created in 2016 compared to 2015. The regrettable inadequacy of available data inhibits any inference about the elasticity of job creation with respect to a deceleration or improvement in economic growth. However, the challenge of slow job creation unfolds more critically when evaluated against the growth of Nigeria's labour force.

The population of the Nigerian labour force has increased by an average of about 1.2 million new entrants quarterly between Q2-2015 and Q3-2017. The observed steady and significant increase in unemployment in Nigeria over the last three years mirrors the failure of job creation to keep up with labour force growth. Just to hold unemployment rate at the present 18.8 percent rate, the economy needs to generate the same number of jobs as the number of entrants into the labour force on a quarterly basis. When the imperative of bringing down unemployment from such a high rate is considered, the enormity of the responsibility staring policy makers in the face is underscored.

## Relationship between Financial Inclusion and Job Creation – What the Literature says

Generally, financial inclusion covers all initiatives directed towards making formal financial services available, accessible and affordable to everyone in a given society with a particular focus on those previously excluded from the formal financial sector (African Development Bank, 2013).

In advanced economies, jobs mean formal sector employment with regular remuneration, and prospective benefits such as health insurance coverage. In such a context, the relationship between the availability of jobs and financial services is macroeconomic. Functioning financial markets are supposed to help mobilize domestic savings and allocate capital to the firms with the highest productive-return opportunities. Financial intermediation supports economic growth which, in turn, creates jobs and, potentially, healthy remuneration. A lot of the traditional economic literature and empirical work focuses on these linkages and there is a broad consensus that things work this way under most circumstances.

However, in most developing countries today, formal sector employment is, at best, only half of the story. In middle-income countries such as Mexico, informal employment is half of total; in India, it is more than 85 percent; while in Nigeria informal jobs created is over 77 percent of the total. Among the ranks of the informally employed are temporary wage earners, household help in the cities of emerging markets, daily wage labourers in the construction industry and temporary employees of informal small businesses.

## Empirical evidence from other jurisdictions

There is sparse evidence on the impact of financial inclusion on job creation as a result of non-availability of historical data for the labour market. Available studies carried out on financial inclusion programmes ignored employment as a specific outcome to be tracked among the outcomes of the drive towards financial inclusion in Nigeria. Most of the studies focused instead on other outcomes of financial inclusion such as increases in economic growth, improvement in health and financial development whilst job creation or employment is mentioned in passing. Yet, empirical evidence shows that the degree and intensification of financial intermediation is positively correlated with growth and employment (Levine 2005 and Pasali 2013).

Despite limited evidence on the impact of financial inclusion on job creation, existing literature is inconclusive on the direction of impact of financial inclusion on job creation. While some conclude that there is a positive impact proceeding from

financial inclusion to job creation (Klapper, Laeven and Rajan, 2006; Cull, Ehrbeck and Holle 2014; Loke, Choi and Libby 2015; Patel, 2014; and MicroBank, 2015), studies by Arcand, Dyer, Puerto Gonzalez, and Gardiner (2013), and Grimm and Paffhausen (2015) suggest a negative/ambiguous effect of financial inclusion on job creation.

According to Klapper, Laeven and Rajan (2006), improvement in access to financial services encourages more businesses started by talented but poor entrepreneurs to flourish, leading to increased productivity as the new entrants leverage on their enhanced access to financial services to create jobs through the expansion of their businesses. An investigation by Cull, Ehrbeck and Holle (2014) on the macro- and micro-level impacts of financial inclusion on poor households globally found that financial inclusion is positively correlated with employment.

Furthermore, beyond job creation, there are other impacts of financial inclusion that may lead to indirect benefits. Loke, Choi and Libby (2015) found that financial interventions targeted at entrepreneurship had a positive and statistically significant impact on employment. Similarly, an impact assessment by Patel (2014) concludes that access to finance was effective for employment creation when it was accompanied by a flexible repayment reschedule. In Spain, MicroBank (2015) studied the impact of microcredit on job creation based on a sample of 14,720 clients who received micro-loans from MicroBank. In this case, forty-five per cent of the micro-loans disbursed were used to start businesses. These businesses were successful job creators, with an average of 1.5 jobs created per enterprise.

On the other hand, Arcand et al. (2013) carried out an evaluation of Mennonite Economic Development Associates' (MEDA's) YouthInvest initiative in Morocco. The intervention was found to have a negative impact on employment. Another study across 54 countries by Grimm and Paffhausen (2015) concluded that microfinance was not a successful tool for job creation. One explanation is that the focus of most microfinance programmes was on income stabilization, rather than job creation.

In Nigeria, using a business-as-usual scenario, the McKinsey Global Institute (2016) estimates that the additional GDP gains of 12.4 percent from digital finance would expand aggregate demand and create an average of 3 million new jobs across sectors by 2025. However, none of the reviewed studies established empirically the direction and magnitude of the relationship between FI and job creation.



## SECTION 3:

# A Framework To Analyse The Financial Inclusion – Job Creation Nexus

Postulates on the theoretical relationship between finance and economic growth in developed and developing countries convey a mix of conflicting perspectives. Some authors (Bagehot, 1873; Schumpeter, 1911; King and Levine 1993; Rajan and Zingales 1998) proposed “finance-led growth hypothesis” or supply-leading responses which argued that the development of the financial sector drives the real sector of the economy and causes the economy’s growth. Others (Robinson, 1952; Goldsmith, 1969; Jung, 1986; Lucas, 1988) support the demand-following responses which suggest that it is the development of the real sector of the economy that accelerates financial development. On the other hand, Okun (1962) established the fundamental macroeconomic law which explains the connection between growth and unemployment. Okun’s law which measures the economic cost (loss in output) of unemployment precludes that a decline in unemployment (increase in employment) will lead to an increase in output.

Although there is no theoretical relationship between the two variables (FI and job creation), building on the established relationship between economic activities and financial inclusion and the relationship between economic activities and job creation, we can infer an indirect relationship (which is derived from the finance-led employment framework) and a feedback nexus (which is derived from the finance-following employment framework) between financial inclusion and job creation. The framework proposes an indirect bidirectional effect that reinforces the relationship between financial inclusion and job creation/employment. It comprises the following

1. **Indirect Effect:** This is divided into two (2) parts – the supply side and the demand side with activity (output and income) as the core elements of the transmission channel.

- a. **Financial inclusion leads to job creation:** Figure 5a illustrates the supply-side hypothesis. The relationship between financial inclusion and job creation is expected to pass through the activity (output and income) as a channel to job creation. Although the precise mechanisms are unclear, the hypothesis is that increase in capital financial infrastructure which increases financial inclusion, access to credit and increase in investment will increase employment/job creation
- b. **Job creation leads to Financial Inclusion** – Figure 5b shows the demand-side hypothesis which is also referred to as the reverse relationship. The relationship is expected to pass through activity as a channel to financial inclusion. Again, although the precise mechanisms are unclear, the hypothesis is that increase in labour-intensive economic activities which increase job creation and employment of youths will increase incomes and thus financial inclusion. However, increase in income may not necessarily increase financial inclusion where jobs created are predominantly in the informal sector.
- c. **Feedback Effects:** Although the available literature and analysis have stressed the contribution made by financial inclusion to job creation, there can also be a useful “feedback effect” from job creation to financial inclusion and vice versa. This “virtuous circle” (see Appendix 1) is visible because increase in employment/job creation will increase income, thus making the formal financial sector a more attractive option for the unbanked (it is more attractive not only for the obvious reason that people want to place their wealth in formal financial institutions with fiduciary responsibilities, but also because they can afford financial services) whilst inclusion in the financial institution increases access to and use of these services which may create or boost employment.

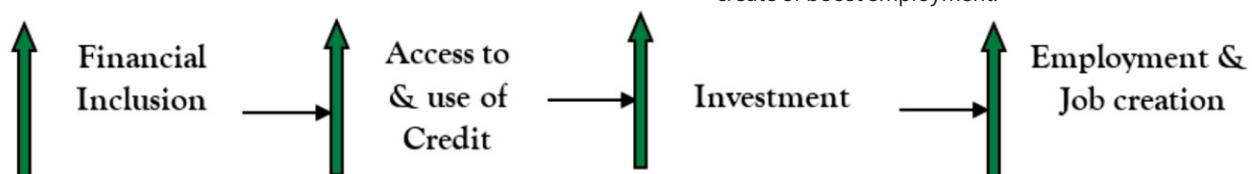


Figure 5a: Supply-side hypothesis: relationship between financial inclusion and Job creation

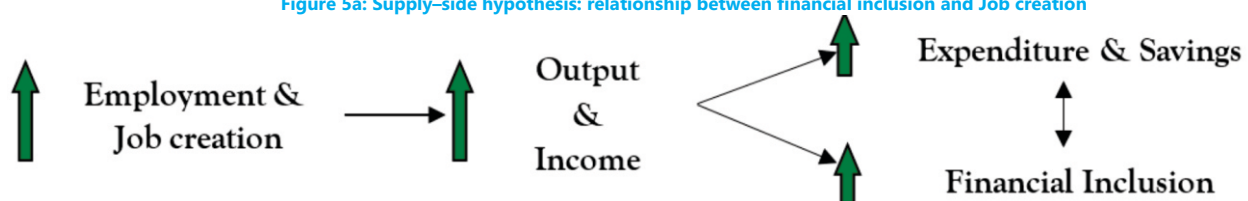


Figure 5b: Demand-side hypothesis: relationship between Financial inclusion and Job creation

## SECTION 4:

# Model, Method of Estimation and Data Sources

Following from the analytical framework discussed above, we employ vector auto-regression (VAR) and Granger causality tests to attempt to empirically ascertain the relationship between financial inclusion and job creation/employment outcome. The choice of this modelling technique is rationalized by its flexibility in allowing for endogenous interactions between financial inclusion and job creation while displaying the delayed effects and assuming the existence of a bi-directional causal relationship between financial inclusion and job creation.

The multivariate VAR contains three variables in a linear form. These are financial inclusion (FI) defined from the demand side, net jobs created (NJB) derived from the change in employment between two periods and per capita income (PCI). Financial inclusion and job creation are the key variables of interest.

To assess the link (nexus) between financial inclusion and job creation in Nigeria, we employed (3) variables Vector Autoregression (VAR) model where FI and NJB are the major variables of interest. However, we introduced PCI in the expectation that it would bring stability to the model and represent the major transmission channel between FI and NJB. Also, secondary data of quarterly frequency over the period 2008-Q1 to 2016-Q4 were sourced directly from the World Bank (WB), the Central Bank of Nigerian Statistical Bulletin (CBN), the National Bureau of Statistics (NBS) and EFInA. However, data in quarterly frequency were generated by splicing annual data using appropriate techniques. The choice of the period was informed by the availability of financial inclusion data since 2008 with the most recent being 2016.

The unrestricted VAR is in the form:

$$\beta(U)Z_t = \mu_t$$

Where

$$\beta(U) = \sum_{i=0}^i \beta_i U_i \dots\dots\dots 1$$

$Z_t$  is a column vector of the endogenous variables, that is

$$Z_t = [FI, NJB, PCI];$$

$\beta(U)$  is a  $3 \times 3$  matrix polynomial in the lag operator  $U$  and  $\mu$  is a column vector of serially independent errors:

$$\mu_t = (\mu_t^{FI}, \mu_t^{NJB}, \mu_t^{PCI})$$



## SECTION 5:

# Discussion of result and Implication

Below are the summary of descriptive statistics as well as the results of Pairwise Granger causality tests, of the forecast error variance decomposition and the impulse-response functions. The Granger causality test examines the causal relationships between financial inclusion, new jobs created and per capita income. Results of the variance decomposition and the impulse-response functions illustrate the short-run dynamic properties of the variables. On the understanding that stationarity tests are not necessary for VAR simulations, we do not test for the presence of unit roots in our variables.

Our computed Jarque-Bera test statistic suggests that all variables, apart from informal financial inclusion (IFI), were normally distributed despite traces of skewness and peakedness, suggested by the kurtosis. Thus, results generated for such data are credible and reliable.

Table 2 presents the results of the Granger causality tests which establish the existence of supply-side, demand-side, feedback and neutral causations between financial inclusion, job creation and per capita income in Nigeria. An examination of the results reveals unidirectional causality running from NJB to FI, meaning that job creation will increase financial inclusion, without a feedback impact. However, bi-directional causality is established

	FI	FFI	IFI	NJB	PCI
<b>Mean</b>	31.867	8.6111	15.878	212145.8	98930.8
<b>Median</b>	31.959	9.9813	17.088	179306.4	108530.2
<b>Maximum</b>	38.431	12.353	25.888	386829.6	140972.6
<b>Minimum</b>	18.633	1.2344	9.7594	138183.7	33615.1
<b>Std. Dev</b>	5.4225	3.5645	4.5065	69124.5	35282.2
<b>Skewness</b>	-0.7476	-0.7155	0.2512	1.5364	-0.7470
<b>Kurtosis</b>	2.7983	2.1231	2.3137	4.1171	2.1827
<b>Jarque-Bera</b>	3.4140*	4.2249*	1.0852	16.045*	4.3495*
<b>Observations</b>	36	36	36	36	36

**Table 1: Summary of Descriptive Statistics Results**

Source: Authors' computation using EViews 7.0. \* represent significant level of one percent

Variables	Driver	Remark	Hypothesis Supported
<b>FI amd NJB</b>	<b>FI → NJB</b>	<b>Unidirectional</b>	<b>Demand lead</b>
---FFI and NJB	FFI → NJB	Unidirectional	Demand lead
---IFI and NJB	NJB → IFI	Bi-directional	Feedback
<b>FI and PCI</b>	<b>FI → PCI</b>	<b>Unidirectional</b>	<b>Supply lead</b>
---FFI and PCI	FFI → PCI	Bi-directional	Feedback
---IFI and PCI	IFI ← PCI	Unidirectional	Supply lead
<b>NJB and PCI</b>	<b>Nil</b>	<b>No casual relationship</b>	<b>Neutral</b>

**Table 2: Pairwise Granger Causality Tests (Lags: 1)**

Source: Authors' computation using EViews 7.0.

between informal financial inclusion (IFI) and NJB suggesting that job creation will increase informal inclusion and vice versa. Furthermore, a unidirectional causality running from FI to PCI was established signaling that financial inclusion will increase per capita income. A bi-directional causal relationship between formal financial inclusion (FFI) and PCI is found, suggesting that formal inclusion will increase per capita income and vice versa.

Figures 6a–6f represent the short run dynamic properties and variance decomposition of financial inclusion, job creation and per capita income in Nigeria. The forecast error variance decomposition displays the proportion of forecast error variance for each variable that is attributable to its own innovation and to innovations in the other endogenous variables. The result suggests that the predominant source of variation in financial inclusion is due to already existing level of financial inclusion attained (indicating reflexive shocks) and per capita income while there is a one quarter period lagged and

incomplete contribution of job creation to variation in financial inclusion. When financial inclusion is disaggregated, the results suggest that variations in formal inclusion and informal inclusion are determined by variations in job creation. However, the causation is stronger on formal inclusion.

On the other hand, variation in job creation in a given period is significantly influenced by the level of jobs created in the preceding period (reflexive shocks) as well as financial inclusion. Furthermore, both formal and informal financial inclusion are critical for job creation. However, informal financial inclusion is a stronger driver. Despite the neutral relationship between job creation and per capita income, a sustained level of per capita income will transmit to job creation after five quarters suggesting that people usually wait to ensure that income is permanent and not transitory.

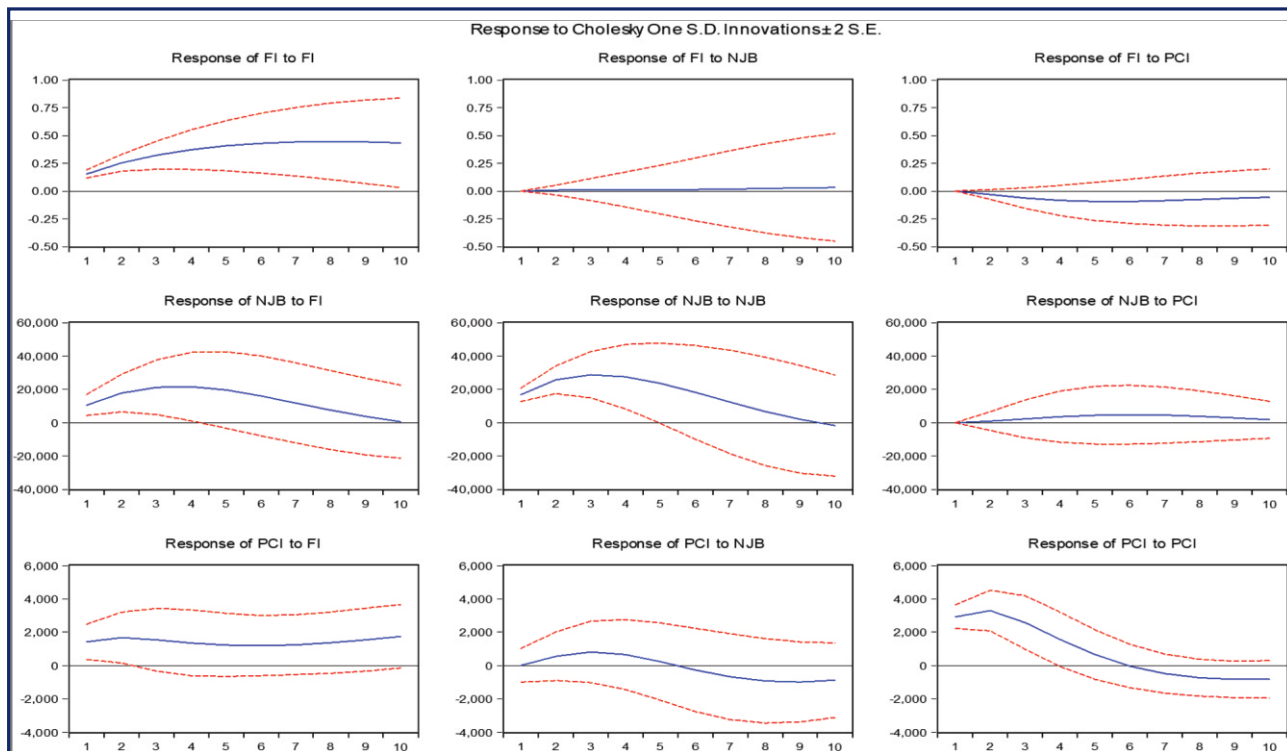


Figure 6a: Impulse Response of FI, NJB and PCI



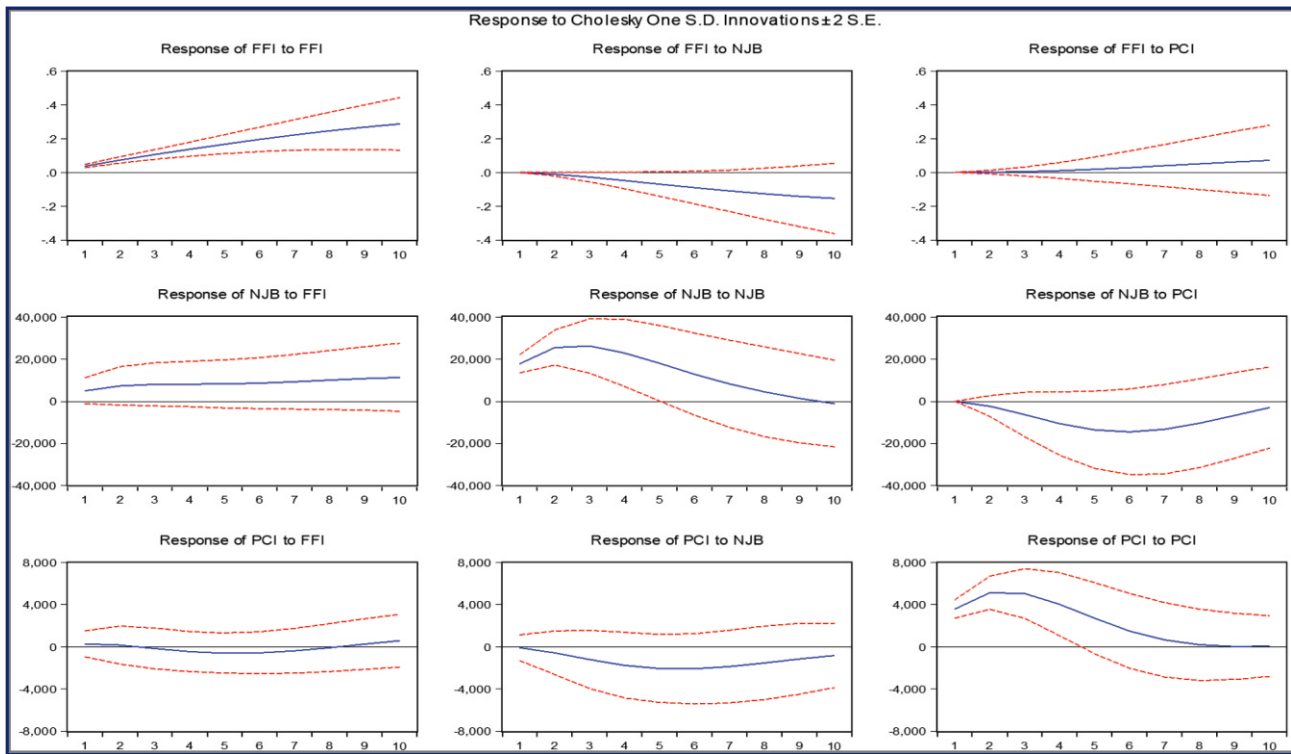


Figure 6b: Impulse Response of FFI, NJB and PCI

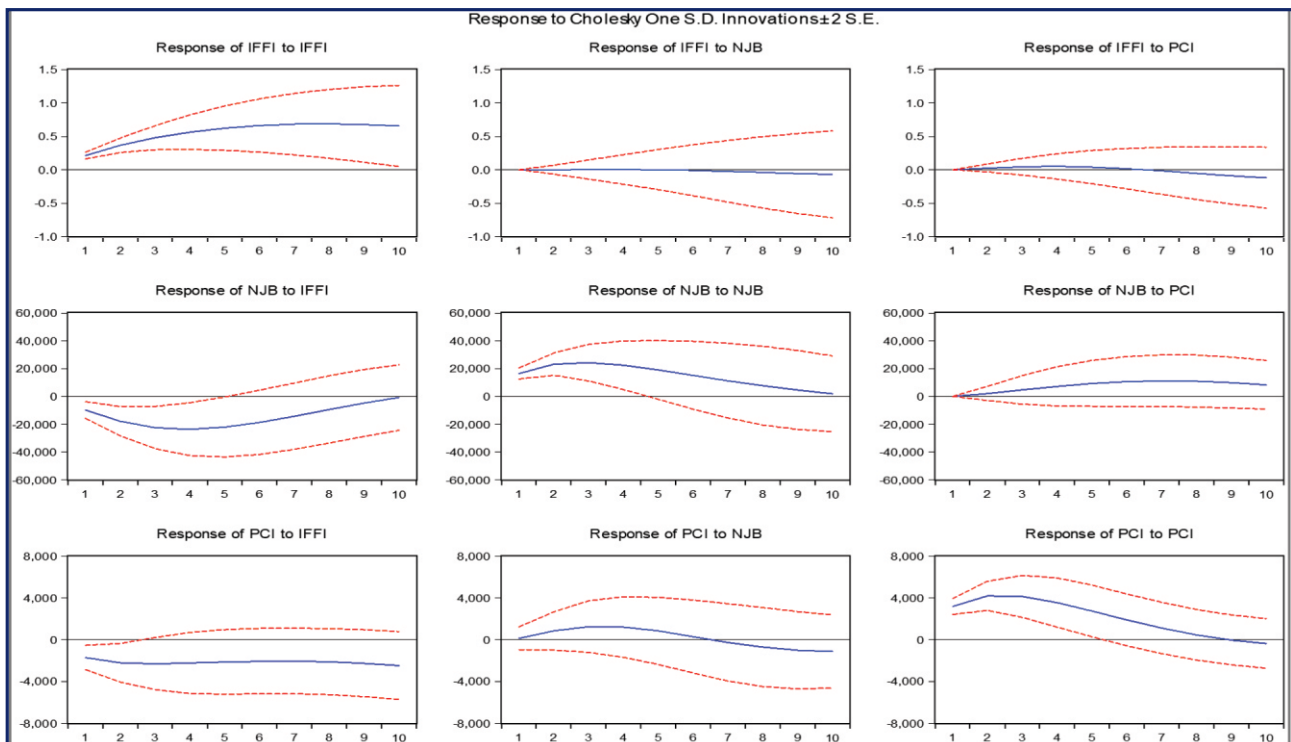


Figure 6c: Impulse Response of IFFI, NJB and PCI

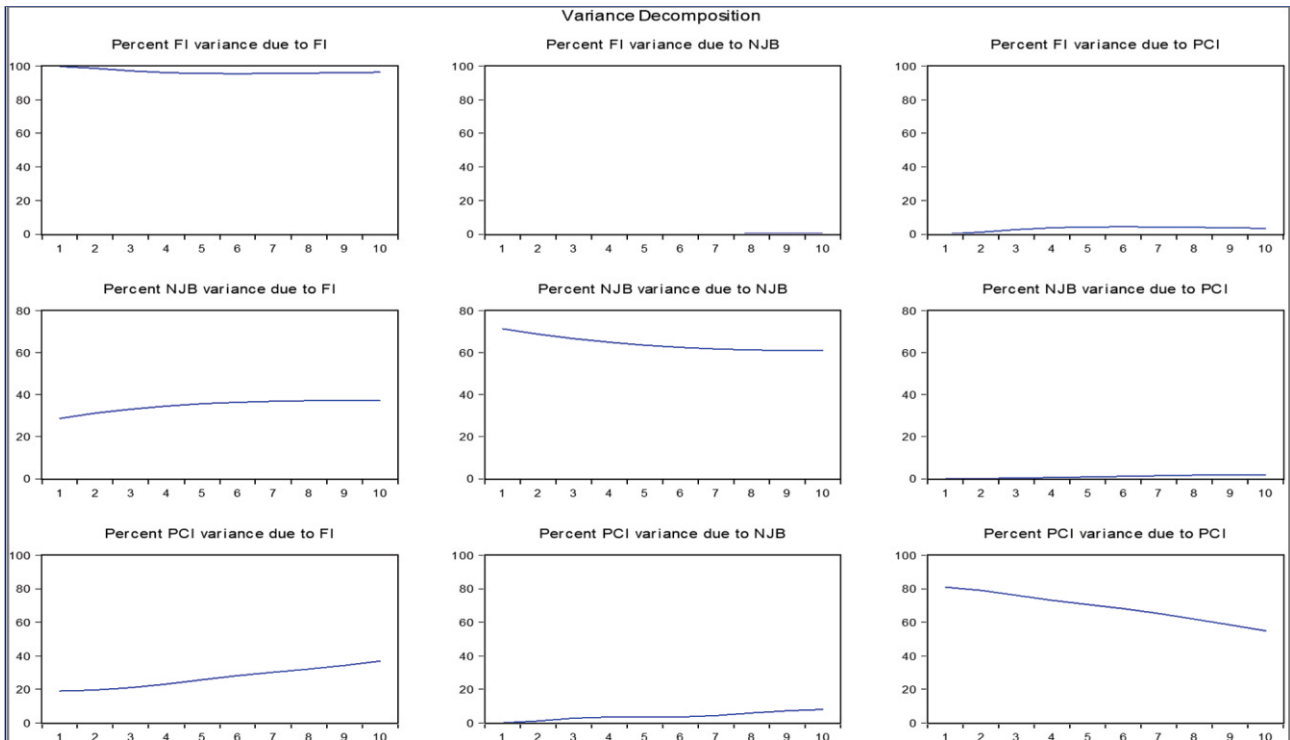


Figure 6d: Variance Decomposition of FI, NJB and PCI

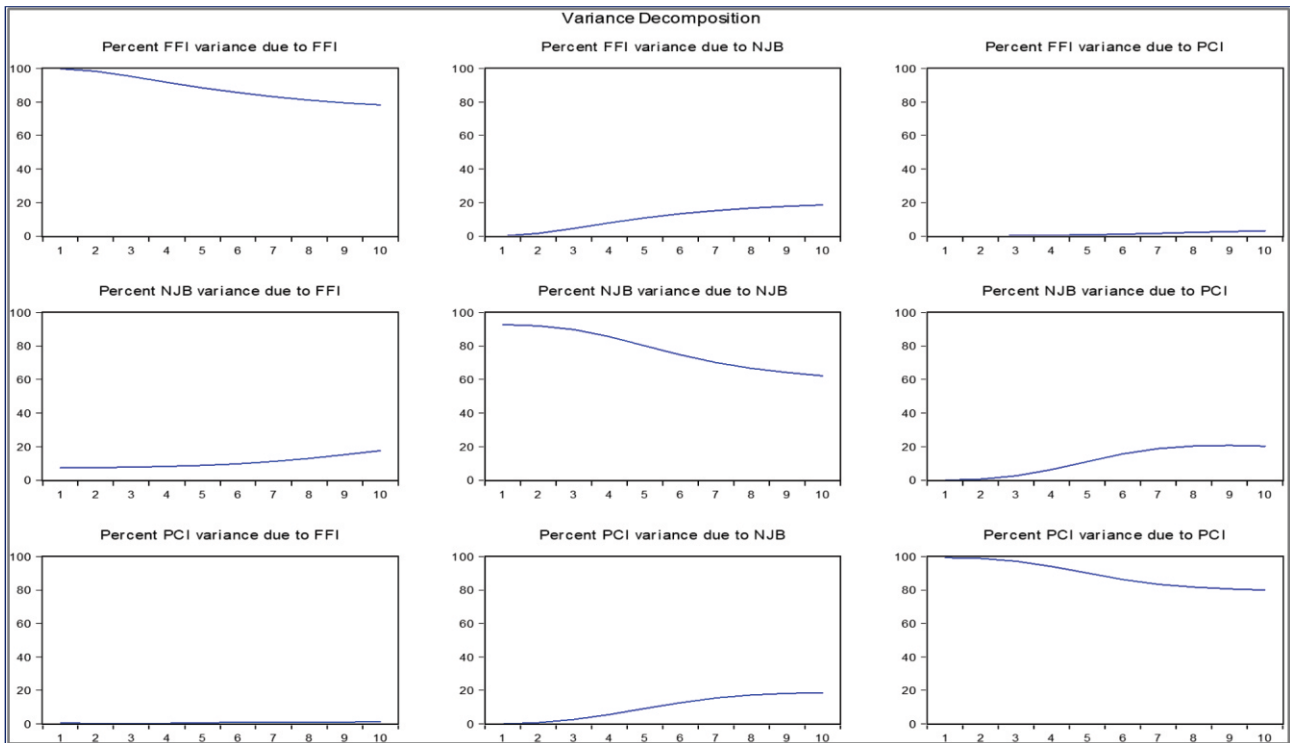


Figure 6e: Variance Decomposition of FFI, NJB and PCI

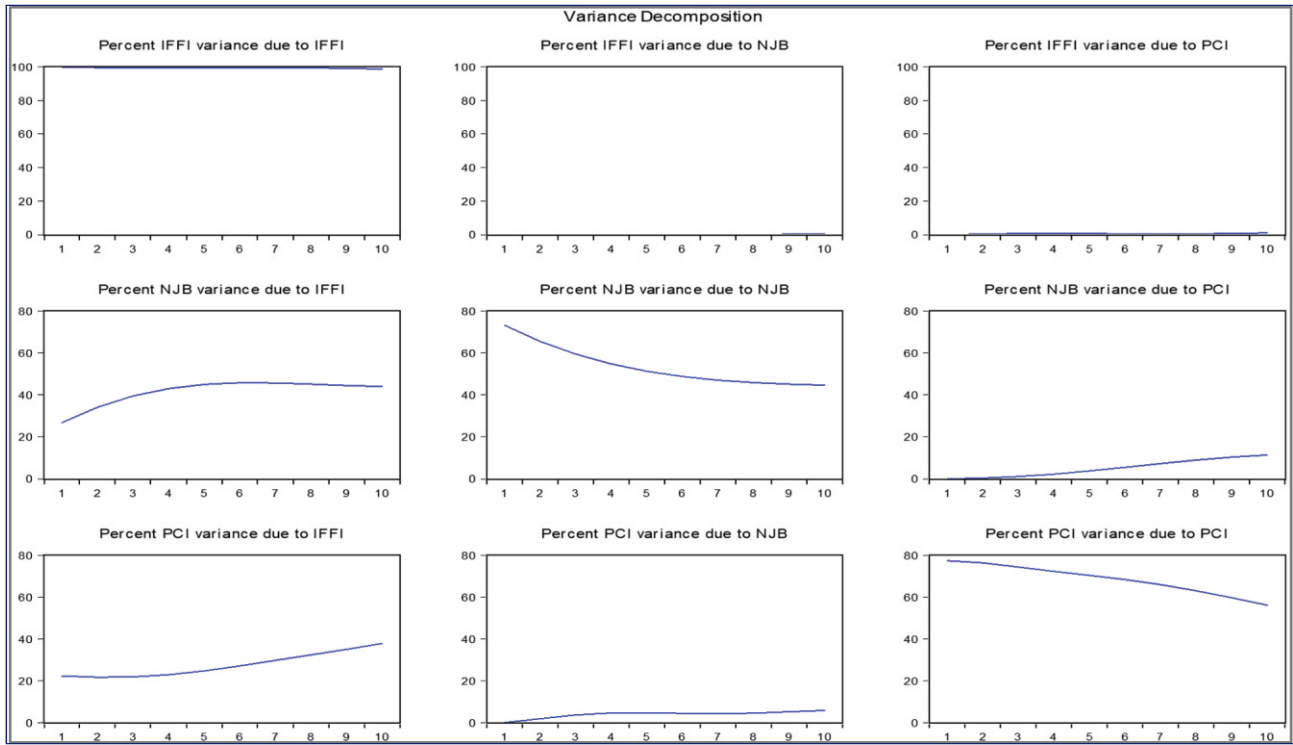


Figure 6f: Variance Decomposition of IFFI, NJB and PCI

## SECTION 6:

# Policy Implication, Recommendation and Conclusion

**T**his report analyzed the nexus between financial inclusion and job creation in Nigeria using Granger causality tests to establish the existence of a supply-side, demand-side, feedback and neutral causal relationship between financial inclusion, job creation and per capita income - the control variable believed to constitute the interface between job creation and financial inclusion.

The results of the forecast error variance decomposition analysis showed that innovations in the variables are mostly explained by reflexive shocks of the variables on themselves. This finding was consistent with the implications of the impulse response functions. Based on the results obtained, the hypothesis of a positive feedback relationship between financial inclusion and job creation in Nigeria is validated.

Therefore, it is recommended that current efforts towards financial inclusion should be sustained since financial inclusion contributes to job creation and in so doing, fosters economic growth. Per capita income is skewed because majority of people in the rural areas have income which falls below the established development indicator threshold as a result of population dynamics therefore policymakers should encourage policies such as population control and enact laws that fosters sustained increase in productivity through the provision of basic amenities linked directly to education, and in infrastructure development.

An established unidirectional causal impact proceeding from overall financial inclusion to per capita income contrasts the bi-directional causal relationship found between formal financial

inclusion and per capita income. This is reflective of income inequality. It is recommended that policies that will raise lower- and middle-class income and substantially close the inequality gap should be of priority at all levels of government. It is further recommended that government at both the federal and state levels as well as development finance institutions should support cooperative societies and other registered microfinance institutions with access to low-interest loans and training on loans evaluation. Disbursements and repayments of the loans should, however, be through members' accounts with formal financial institutions.

**From the results obtained,** it is conceivable that policies targeted at creating jobs in the informal sector will in the medium-long run have some positive impact on informal financial inclusion. Policies directed at creating jobs at the grassroots can, therefore, be blended to stimulate and grow informal financial inclusion, as well.

Finally, if the financial inclusion goal and other inclusive growth targets are to be achieved, policies which can complement the existing framework on job creation, social support and conditional transfers, should be pursued vigorously with a careful guide against leakages which can undermine expected and positive policy effects.



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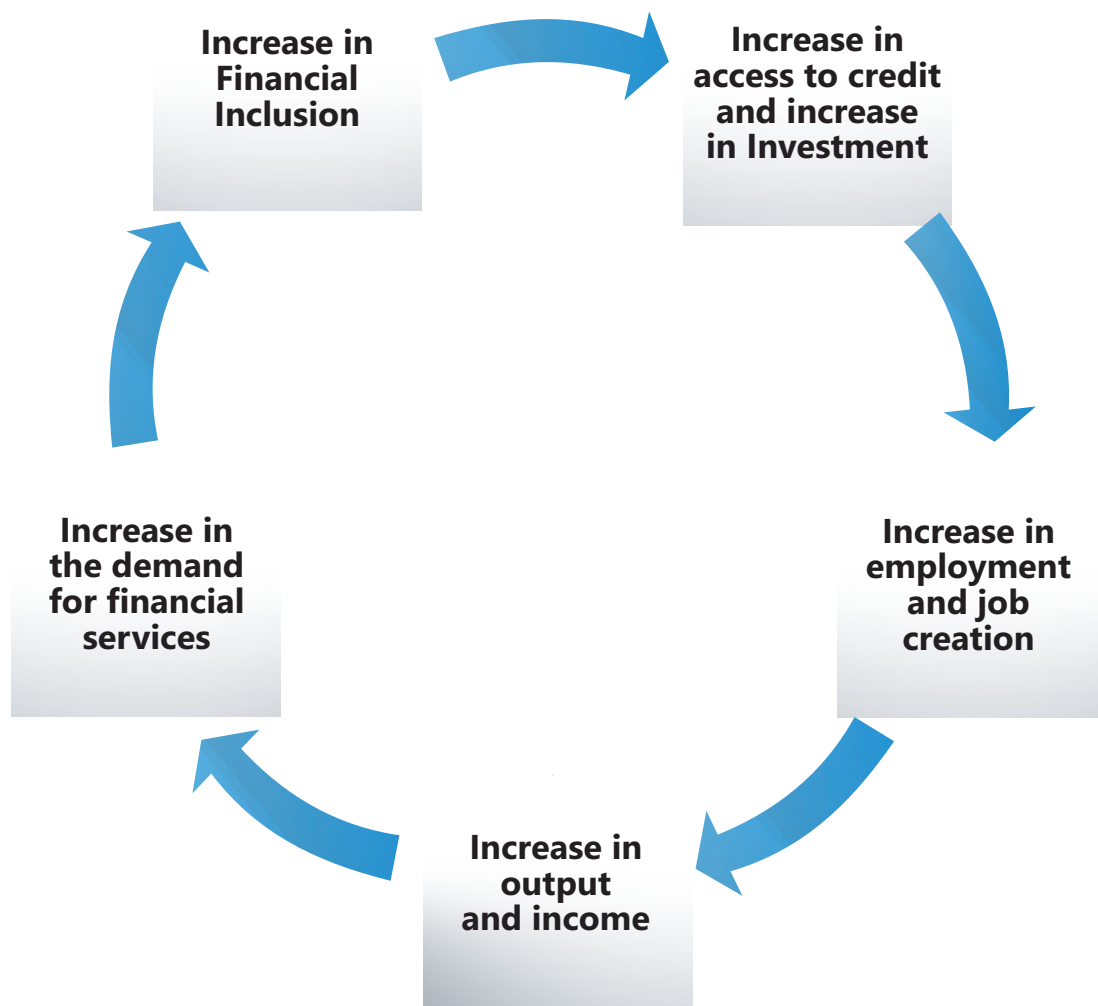
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## APPENDIX 1

# An illustration of the bidirectional relationship between FI and employment



### About SIDFS

The Sustainable and Inclusive Digital Financial Services (SIDFS) initiative of the Lagos Business School engages in research and advocacy projects with the goal of creating an inclusive ecosystem for financial services. The initiative seeks to gain an in-depth understanding of the digital financial services and financial inclusion landscape while providing thought leadership on sustainable business models to deliver digital financial services to the unbanked poor. Our overall objective is to support the development and promotion of sustainable solutions to Nigeria's financial inclusion challenges and help more Nigerians access the financial services they need to improve their lives.

Founded in 2015, the initiative combines rigorous research (which informs a pragmatic approach to responsible market development) with an evidence-based advocacy platform (to inform policy and influence key decision makers in the industry).

The Nexus Series consists of six technical papers exploring the relationship between financial inclusion and macroeconomic indicators



KM 22 Lekki-Epe  
Expressway Ajah-Lagos

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